



The 31<sup>st</sup> World Congress on  
Controversies in Obstetrics,  
Gynecology & Infertility (COGI)  
*All About Women's Health*

**Vienna, Austria**  
**November 23-25, 2023**

*Congress Program & Abstracts*



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# Timetable

## Thursday, November 23, 2023

	Hall A (Grand Klimt Hall 2 & 3)	HALL D (Grand Park Hall 3)
13:30-14:30	PUBLICATION BIAS	
14:30-15:30	PCOS AND PERINATAL RISKS	
15:30-15:45	Coffee Break	
15:45-17:10	ENVIRONMENTAL EFFECTS ON REPRODUCTION	
17:10-18:10	INDUSTRY SUPPORTED SESSION (see page 40)	14:00-17:00 INDUSTRY SUPPORTED LASER COURSE (See page 39)
18:10-19:10	OPENING SESSION	
19:10-20:10	Networking Reception	

## Friday, November 24, 2023

	HALL A ART/IVF/Infertility (Grand Klimt Hall 2 & 3)	HALL B IVF/ART/Infertility II (Grand Klimt Hall 1)	HALL C Gynecology (Grand Park Hall 2)	HALL D Fetomaternal Medicine (Grand Park Hall 3)	HALL E Oral Presentations (Park Suite 1)
08:30-10:00	DECREASED OVARIAN RESERVE	OLD QUESTIONS, NEW ANSWERS?	PERIMENOPAUSAL CONTRACEPTION	GESTATIONAL DIABETES MELLITUS (GDM), OBESITY	ORAL PRESENTATIONS 1 - GYNECOLOGY
10:00-10:20	Coffee break, visit the exhibition and e-poster viewing 10:05-10:15: MODERATED E-POSTER SESSION 1 - ART/IVF/INFERTILITY				
10:20-12:20	THE USE OF ADD-ONS	IN VITRO MODELS OF EMBRYO AND IMPLANTATION, ARE THEY REALLY USEFUL?	IMS SESSION: MANAGING CLINICAL DILEMMAS IN DAY-TO-DAY MENOPAUSE PRACTICE  11:40-12:20 ENDOMETRIOSIS, PAIN COMORBIDITIES AND SEXUALITY	PROGESTERONE AND PRE-ECLAMPSIA: WHAT ARE THE FUTURE TRENDS?  11:50-12:20 ORAL PRESENTATIONS 2 - FETOMATERNAL MEDICINE	ORAL PRESENTATIONS 3 - FETOMATERNAL MEDICINE
12:20-13:20	INDUSTRY SUPPORTED SESSION (see page 41)	INDUSTRY SUPPORTED SESSION (see page 41)	INDUSTRY SUPPORTED SESSION (see page 42)	INDUSTRY SUPPORTED SESSION (see page 42)	Live stream from Hall B
13:20-14:30	13:20-14:30 - Lunch break & visit the exhibition, e-posters viewing 13:30-14:30 - Industry supported movie (Hall A and live stream to Hall D) (see page 43)				
14:30-16:30	FIBROIDS AND INFERTILITY Live stream to Hall C	BENCH TO BED-SIDE? THE CENTRAL ROLE OF FERTILIZATION IN ART	FIBROIDS AND INFERTILITY Live stream from Hall A	INTRAUTERINE GROWTH RESTRICTION (IUGR)	ORAL PRESENTATIONS 4 - ART/IVF/INFERTILITY
16:30-16:50	Coffee break, visit the exhibition and e-poster viewing 16:35-16:44: MODERATED E-POSTER SESSION 2 - OTHER				
16:50-18:20	FERTILITY PRESERVATION	PGT	PREDICTION AND MANAGEMENT OF MENOPAUSE	NEW TECHNOLOGIES IN OBSTETRICS	ORAL PRESENTATIONS 5 - FETOMATERNAL MEDICINE

## Saturday, November 25, 2023

	HALL A ART/IVF/Infertility (Grand Klimt Hall 2 & 3)	HALL B IVF/ART/Infertility II (Grand Klimt Hall 1)	HALL C Gynecology (Grand Park Hall 2)	HALL D Fetomaternal Medicine (Grand Park Hall 3)	HALL E Oral Presentations (Park Suite 1)
08:30-10:00	PCO/PCOS	ENDOMETRIOSIS AND INFERTILITY Live stream to Hall C	ENDOMETRIOSIS AND INFERTILITY Live stream from Hall B	PRETERM LABOR	ORAL PRESENTATIONS 6 - HPV; GYNECOLOGICAL ONCOLOGY; DIAGNOSTIC PROCEDURES
10:00-10:20	Coffee break, visit the exhibition and e-poster viewing				
10:20-11:50	REPEATED MISCARRIAGE	NEW FRONTIERS IN OVULATORY DYSFUNCTION: NEW GUIDELINES & NEW TOOLS FOR FERTILITY PROGNOSIS	10:20-10:50 ESTETROL  10:50-11:50 SLS: SOCIETY OF LAPAROSCOPIC & ROBOTIC SURGEONS	HOT CONTROVERSIES ON CLINICAL ASPECTS	ORAL PRESENTATIONS 7 - GYNECOLOGY
11:50-12:00	Short break				
12:00-13:30	DISCUSSION ON PRACTICAL HOT CONTROVERSIES	INNOVATION IN REPRODUCTIVE TECHNOLOGY - SHOWCASE SESSION FOR START-UPS	HYSTEROSCOPY - A GCH SESSION	PREVENTION OF MEDICAL COMPLICATIONS IN PREGNANCY	ORAL PRESENTATIONS 8 - ART/IVF/INFERTILITY
13:30-14:30	Lunch break, visit the exhibition and e-poster viewing 13:40-13:52: MODERATED E-POSTER SESSION 3 (screen 1) - GYNECOLOGICAL ONCOLOGY & GYNECOLOGY 13:40 - 14:16: MODERATED E-POSTER SESSION 4 (screen 2) - FETOMATERNAL MEDICINE				
13:40-14:15		ORAL PRESENTATIONS 9 - FETOMATERNAL MEDICINE		ORAL PRESENTATIONS 10 - OTHER	ORAL PRESENTATIONS 11 - FETOMATERNAL MEDICINE; GYNECOLOGY
14:30-16:30	LABORATORY WORK	ORAL PRESENTATIONS 12 - OTHER; FETOMATERNAL MEDICINE	HRT AND CANCER	PROGESTERONE & PREGNANCY: NEW INDICATIONS - A PREIS SCHOOL ACADEMY SESSION	ORAL PRESENTATIONS 13 - ART/IVF/INFERTILITY; DIAGNOSTIC PROCEDURES; GYNECOLOGY



# Welcome from Chairs

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Dear Colleagues,

We, the COGI chairpersons, are delighted to welcome you to the **31<sup>st</sup> World Congress on Controversies in Obstetrics, Gynecology and Infertility**, taking place at the **Hilton Vienna Park, Vienna, Austria** from **November 23-25, 2023**.

We look forward to attracting approximately 1,200 participants from over 100 countries.

COGI Congress hosts world-renowned leaders in the fields of OBGYN and infertility, to discuss, debate and review advances in clinically oriented issues in all the fields of OBGYN and Infertility.

Like every year, we have worked tirelessly to develop and offer an inspiring scientific program, that will allow the busy clinician to get a clinically oriented solution to the controversial topics that are so characteristic of our profession. The program will allow ample time for discussion and speaker-audience interaction.

In addition, we thank the next generation of physicians, scientists and researchers who have submitted abstracts for consideration for the Young Scientist Award.

Welcome to Vienna!

Sincerely,  
COGI Congress Co-Chairpersons



**Zion Ben Rafael**  
*Israel*



**Bart C.J.M. Fauser**  
*The Netherlands*



**Anja Pinborg**  
*Denmark*



**Rita Vassena**  
*Spain*



**Johannes Ott**  
*Austria*

## Honorary President

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**Rene Frydman**  
*France*

## Fetomaternal Medicine

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**Yariv Yoge**  
*Israel*  
Section chair



**Asma Khalil**  
*UK*  
Section chair



# know what matters in



**Women's  
and Children's  
Health**



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## Words of Welcome from the Mayor & Governor of Vienna

As Mayor of the City of Vienna, I would like to welcome you most warmly to Europe's leading conference city. Around 400 national and international congresses are held in Vienna every year and more than 240,000 participants can experience the beauty, charm and vitality of the city and its inhabitants during their days in Vienna. As a metropolis in the heart of Europe with a major science and research focus, Vienna not only offers perfect working conditions for scientists, but also fascinates as a cultural capital with its impressive architecture, the many world-class museums and, last but not least, its unrivaled position in the field of classical music. For many of Vienna's residents, therefore, a good work-life balance has long been a reality.

Vienna also has a particularly long and respected tradition as an important venue for medical conferences in Europe. Since 1873, when the "III<sup>rd</sup> International Medical Congress", which took place in Vienna, helped to develop medicine into a modern scientific discipline, the city has rightly earned a reputation as an international hub for the most up-to-date knowledge in medicine. Vienna also achieved international importance in the field of obstetrics, particularly through the work of the important Hungarian-Austrian physician Ignaz Semmelweis after 1865. Somewhat later, in the years after 1900, the "Viennese School of Obstetrics" founded by Rudolf Chrobak and Friedrich Schauta once again gained worldwide attention because of its pioneering achievements in the field of gynecological operations.

I am therefore extremely pleased that the 31<sup>st</sup> World Congress on Controversies in Obstetrics, Gynecology and Infertility (COGI) 2023 will again be held in Vienna. Obstetrics, gynecology and infertility concern highly private and often taboo areas of women's lives. This makes it all the more necessary to exchange current research results and therapeutic options on an international level. I am convinced that the approximately 130 speakers and the more than 1,200 participants from more than 85 countries will discuss innovative findings for the benefit of women and their health and will later successfully apply the "Viennese findings" thus obtained.

I thank you very much for your great commitment to this important field of women's medicine and wish you a successful World Congress. Enjoy your time in Vienna, the most livable city in the world!

### **Dr. Michael Ludwig**

*Mayor and Governor of Vienna | Bürgermeister und Landeshauptmann von Wien*



## Message from Rector MedUni Vienna

Dear Colleagues,

I am delighted to extend my warmest welcome to you on behalf of the Medical University of Vienna, as we prepare to host the 31st World Congress on Controversies in Obstetrics, Gynecology & Infertility in 2023. We are honored to host this prestigious congress once again and look forward to your arrival in Vienna.

Vienna, renowned for its rich history in music and academic medicine, is one of the top international event locations, making it a fitting venue for this congress. The Medical University of Vienna, the largest medical institution in Austria, is among the top medical research institutions in Europe and houses Europe's largest hospital, the University Hospital Vienna, with a highly qualified medical staff.

Our institution boasts a 650-year history and tradition, and has developed into a modern medical research institution. Our core tasks include internationally competitive medical research and the development of innovative solutions for relevant medical needs, such as those covered by this congress.

I hope that your time in Vienna will be inspiring and fruitful, allowing you to forge new connections, maintain old friendships, and lay the groundwork for progress in your work.

Thank you for choosing to participate in this congress and we look forward to welcoming you to the Medical University of Vienna.

Best regards,

**Markus Müller, o.Univ. Prof. Dr.**  
*Rector, Medical University of Vienna*



# General Information

## VENUE

**Hilton Vienna Park**  
Am Stadtpark 1  
Vienna, A – 1030, Austria

## LANGUAGE

The official language of the congress is English.

## COGI CONGRESS HOURS

Thursday, November 23 13:30-19:10 (Networking Reception - 19:10-20:10)  
Friday, November 24 08:30-18:20  
Saturday, November 25 08:30-16:30

## CONGRESS ADMISSION – NAME BADGE

Admission to the scientific sessions, exhibition area and e-Posters is available to registered delegates only.

## EXHIBITION OPENING HOURS

Thursday, November 23 19:00-20:10 (Networking Reception - 19:10-20:10)  
Friday, November 24 09:30-16:50  
Saturday, November 25 09:30-14:30

## POSTERS

All the posters are presented in electronic format. The e-posters are situated in the exhibition hall on the ground level and are also available for online viewing.

## WIFI

Network name: Hilton Honors  
Password: **cogi2023**

## CERTIFICATE OF ATTENDANCE (non-CME/CPD)

Certificates of attendance will be sent by email after the congress to all registered delegates.

## CME ACCREDITATION & TRACKING

The 31<sup>st</sup> COGI Congress has been accredited by the European Accreditation Council for Continued Medical Education (EACCME<sup>®</sup>) for a maximum of **17.5** CME credits (ECMEC<sup>®</sup>s).

To receive your CME accreditation certificate, please visit the congress website after the congress and complete the online form. Your certificate will be sent to you approximately 60 days after completion of the survey.

EACCME requires that all participation to accredited sessions be tracked.

*See page 8 for QR Codes*

## LIABILITY AND INSURANCE


The COGI Congress secretariat and the organizers cannot accept liability for personal accidents, or loss or damage to private property of participants, either during or directly arising from the 31<sup>st</sup> COGI Congress.

## RECORDING POLICY

Recording (photographic, video and audio) of the session is **strictly prohibited**. A recorded version of the congress will be available on a password protected website for 1 month after the congress. The link and password will be sent to registered delegates after the congress.

## SOCIAL MEDIA

Follow COGI social media pages for the latest updates, key date reminders, and discussions with colleagues and experts from around the world.

 **COGI Congress**

 **Controversies in Obstetrics, Gynecology & Infertility (COGI)**

 **@cogicongress / #COGI**

 **www.instagram.com/cogi\_congress**

 **cogicongress**







## CME ACCREDITATION TRACKING

EACCME requires that all participation to accredited sessions be tracked.








If you forgot to scan the code for a session attended, please scan the below QR CODE.

*Please note that you are not able to claim credits for sessions at the same time in different halls.*

### Thursday, November 23

Time	Session Hall	Session Title	QR Code
13:30-14:30	Hall A (Grand Klimt Hall (2 & 3))	PUBLICATION BIAS	
14:30-15:30	Hall A (Grand Klimt Hall (2 & 3))	PCOS AND PERINATAL RISKS	
15:45-17:10	Hall A (Grand Klimt Hall (2 & 3))	ENVIRONMENTAL EFFECTS ON REPRODUCTION	
18:10-19:10	Hall A (Grand Klimt Hall (2 & 3))	OPENING SESSION	

### Friday, November 24

Time	Session Hall	Session Title	QR Code
08:30-10:00	Hall A (Grand Klimt Hall (2 & 3))	DECREASED OVARIAN RESERVE	
08:30-10:00	Hall B (Grand Klimt Hall 1)	OLD QUESTIONS, NEW ANSWERS?	
08:30-10:00	Hall C (Grand Park Hall 2)	PERIMENOPAUSAL CONTRACEPTION	
08:30-10:00	Hall D (Grand Park Hall 3)	GESTATIONAL DIABETES MELLITUS (GDM), OBESITY	
08:30-10:00	Hall E (Park Suite 1)	ORAL PRESENTATIONS 1 - GYNECOLOGY	
10:20-12:20	Hall A (Grand Klimt Hall (2 & 3))	THE USE OF ADD-ONS	
10:20-12:20	Hall B (Grand Klimt Hall 1)	IN VITRO MODELS OF EMBRYO AND IMPLANTATION, ARE THEY REALLY USEFUL?	







**Friday, November 24**

Time	Session Hall	Session Title	QR Code
10:20-11:40	Hall C (Grand Park Hall 2)	IMS SESSION: MANAGING CLINICAL DILEMMAS IN DAY-TO-DAY MENOPAUSE PRACTICE	
10:20-11:50	Hall D (Grand Park Hall 3)	PROGESTERONE AND PRE-ECLAMPSIA: WHAT ARE THE FUTURE TRENDS?	
10:20-12:20	Hall E (Park Suite 1)	ORAL PRESENTATIONS 3 - FETOMATERNAL MEDICINE	
11:40-12:20	Hall C (Grand Park Hall 2)	ENDOMETRIOSIS, PAIN COMORBIDITIES AND SEXUALITY	
11:50-12:20	Hall D (Grand Park Hall 3)	ORAL PRESENTATIONS 2 - FETOMATERNAL MEDICINE	
14:30-16:30	Hall A (Grand Klimt Hall (2 & 3)) Hall C (Grand Park Hall 2)	FIBROIDS AND INFERTILITY <i>Live stream to Hall C</i>	
14:30-16:30	Hall B (Grand Klimt Hall 1)	BENCH TO BED-SIDE? THE CENTRAL ROLE OF FERTILIZATION IN ART	
14:30-16:30	Hall D (Grand Park Hall 3)	INTRAUTERINE GROWTH RESTRICTION (IUGR)	
14:30-16:30	Hall E (Park Suite 1)	ORAL PRESENTATIONS 4 - ART/IVF/INFERTILITY	
16:50-18:20	Hall A (Grand Klimt Hall (2 & 3))	FERTILITY PRESERVATION	
16:50-18:20	Hall B (Grand Klimt Hall 1)	PGT	
16:50-18:20	Hall C (Grand Park Hall 2)	PREDICTION AND MANAGEMENT OF MENOPAUSE	



### Friday, November 24

Time	Session Hall	Session Title	QR Code
16:50-18:20	Hall D (Grand Park Hall 3)	NEW TECHNOLOGIES IN OBSTETRICS	
16:50-18:20	Hall E (Park Suite 1)	ORAL PRESENTATIONS 5 - FETOMATERNAL MEDICINE	

### Saturday, November 25

Time	Session Hall	Session Title	QR Code
08:30-10:00	Hall A (Grand Klimt Hall (2 & 3))	PCO/PCOS	
08:30-10:00	Hall B (Grand Klimt Hall 1) Hall C (Grand Park Hall 2)	ENDOMETRIOSIS AND INFERTILITY <i>Live stream to Hall C</i>	
08:30-10:00	Hall D (Grand Park Hall 3)	PRETERM LABOR	
08:30-10:00	Hall E (Park Suite 1)	ORAL PRESENTATIONS 6 – HPV; GYNECOLOGICAL ONCOLOGY; DIAGNOSTIC PROCEDURES	
10:20-11:50	Hall A (Grand Klimt Hall (2 & 3))	REPEATED MISCARRIAGE	
10:20-11:50	Hall B (Grand Klimt Hall 1)	NEW FRONTIERS IN OVULATORY DYSFUNCTION: NEW GUIDELINES & NEW TOOLS FOR FERTILITY PROGNOSIS	
10:20-10:50	Hall C (Grand Park Hall 2)	ESTETROL	
10:20-11:50	Hall D (Grand Park Hall 3)	HOT CONTROVERSIES ON CLINICAL ASPECTS	
10:20-11:50	Hall E (Park Suite 1)	ORAL PRESENTATIONS 7 - GYNECOLOGY	
10:50-11:50	Hall C (Grand Park Hall 2)	SLS: SOCIETY OF LAPAROSCOPIC & ROBOTIC SURGEONS	



**Saturday, November 25**

Time	Session Hall	Session Title	QR Code
12:00-13:30	Hall A (Grand Klimt Hall (2 & 3))	DISCUSSION ON PRACTICAL HOT CONTROVERSIES	
12:00-13:30	Hall B (Grand Klimt Hall 1)	INNOVATION IN REPRODUCTIVE TECHNOLOGY - SHOWCASE SESSION FOR START-UPS	
12:00-13:30	Hall C (Grand Park Hall 2)	HYSTEROSCOPY – A GCH SESSION	
12:00-13:30	Hall D (Grand Park Hall 3)	PREVENTION OF MEDICAL COMPLICATIONS IN PREGNANCY	
12:00-13:30	Hall E (Park Suite 1)	ORAL PRESENTATIONS 8 - ART/IVF/INFERTILITY	
13:40-14:15	Hall B (Grand Klimt Hall 1)	ORAL PRESENTATIONS 9 - FETOMATERNAL MEDICINE	
13:40-14:15	Hall D (Grand Park Hall 3)	ORAL PRESENTATIONS 10 - OTHER	
13:40-14:15	Hall E (Park Suite 1)	ORAL PRESENTATIONS 11 - FETOMATERNAL MEDICINE; GYNECOLOGY	
14:30-16:30	Hall A (Grand Klimt Hall (2 & 3))	LABORATORY WORK	
14:30-16:30	Hall B (Grand Klimt Hall 1)	ORAL PRESENTATIONS 12 - OTHER; FETOMATERNAL MEDICINE	
14:30-16:30	Hall C (Grand Park Hall 2)	HRT AND CANCER	
14:30-16:30	Hall D (Grand Park Hall 3)	PROGESTERONE & PREGNANCY: NEW INDICATIONS - A PREIS SCHOOL ACADEMY SESSION	
14:30-16:30	Hall E (Park Suite 1)	ORAL PRESENTATIONS 13 - ART/IVF/INFERTILITY; DIAGNOSTIC PROCEDURES; GYNECOLOGY	







# *Scientific Program*

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13:30-14:30	<b>PUBLICATION BIAS</b>	HALL A (Grand Klimt Hall 2 & 3)
Capsule	In recent years increasing attention is focusing on poorly reproducible science, and poor science quality. How often does this occur, what can we do about it, and is there an urgent need to fundamentally change policies	
Chairpersons	<b>Zion Ben Rafael</b> , <i>Israel</i> <b>Guelen Yerlikaya-Schatten</b> , <i>Austria</i>	
13:30-13:50	Save us from bad quality publications <b>Bart Fauser</b> , <i>Netherlands</i>	
13:50-14:10	Venture Capital – good or bad for clinical outcomes? <b>Rita Vassena</b> , <i>Spain</i>	
14:10-14:30	<b>Debate: Is there a need to “revise” the peer-review process in our medical journals?</b>	
14:10	Yes: <b>Norbert Gleicher</b> , <i>USA</i>	
14:15	No: <b>Edgardo Somigliana</b> , <i>Italy</i>	
14:20	Discussion	
14:00-17:00	<b>INDUSTRY SUPPORTED COURSE</b> <i>See page 39 for details</i>	HALL D (Grand Park Hall 3)
14:30-15:30	<b>PCOS AND PERINATAL RISKS</b>	HALL A (Grand Klimt Hall 2 & 3)
Capsule	PCOS is the most common endocrinopathy. It changes over life span and has implications for patients and offspring. What are the risks to babies born from frozen embryos of which obstetricians should be aware?	
Chairpersons	<b>Zion Ben Rafael</b> , <i>Israel</i> <b>Asma Khalil</b> , <i>UK</i>	
14:30-14:45	PCOS phenotype throughout women’s life span <b>Joop Laven</b> , <i>Netherlands</i>	
14:45-15:00	Polycystic ovary syndrome: General health implications for patients and offspring <b>Bart Fauser</b> , <i>Netherlands</i>	
15:00-15:15	Health of children born after frozen embryo transfer <b>Anja Pinborg</b> , <i>Denmark</i>	
15:15-15:30	Discussion	
15:30-15:45	<i>Coffee break</i>	Foyer area Mezzanine Level
15:45-17:10	<b>ENVIRONMENTAL EFFECTS ON REPRODUCTION</b>	HALL A (Grand Klimt Hall 2 & 3)
Capsule	The changes in the global environment, with increased pollution, higher temperature and weather disruptions, can affect the reproductive functions in ways we may not be aware of. This session will explore the threats ahead and how ART can help tackle the emergency.	
Chairpersons	<b>Asma Khalil</b> , <i>UK</i> <b>Bart Fauser</b> , <i>Netherlands</i> <b>Joop Laven</b> , <i>Netherlands</i>	
15:45-16:05	Microplastics and the placenta: Not a perfect barrier? <b>Hanna Dusza</b> , <i>Netherlands</i>	
16:05-16:25	Impact of lifestyle and environmental exposures on testicular function <b>Niels Jørgensen</b> , <i>Denmark</i>	
16:25-16:45	Prenatal exposure to environmental pollution and long-term outcomes in children <b>Paul A. Fowler</b> , <i>UK (virtual)</i>	
16:45-17:10	Beyond publication <b>Anja Pinborg</b> , <i>Denmark</i>	
17:10-18:10	<b>INDUSTRY SUPPORTED SESSION</b> <i>See page 40 for details</i>	HALL A (Grand Klimt Hall 2 & 3)
18:10-19:10	<b>OPENING SESSION</b>	HALL A (Grand Klimt Hall 2 & 3)
Chairperson	<b>Zion Ben Rafael</b> , <i>Israel</i> <b>Bart Fauser</b> , <i>Netherlands</i> <b>Rene Frydman</b> , <i>France</i>	
18:10-18:15	Welcome and thank you <b>Zion Ben Rafael</b> , <i>Israel</i>	
18:15-19:00	Keynote lecture in honor of Nobel Prize Laureate Robert G. Edwards Prediction and prevention of preeclampsia <b>Kypros Nicolaides</b> , <i>UK (virtual)</i>	
19:00-19:10	Best Abstract Awards Announcement	



**Hall A - ART/IVF/INFERTILITY** (*Grand Klimt 2 & 3*)

08:30-10:00	<b>DECREASED OVARIAN RESERVE</b>	HALL A ( <i>Grand Klimt Hall 2 &amp; 3</i> )
Capsule	DOR remains a challenge, can we devise a better protocol?	
Chairpersons	<b>Bart Fauser</b> , <i>Netherlands</i> <b>Andrea Weghofer</b> , <i>Austria</i>	
08:30-09:00	<b>Debate: We should offer ovarian reserve test for all women at age 30!</b>	
08:30	Pro: <b>Teresa Almeida-Santos</b> , <i>Portugal</i>	
08:40	Con: <b>Scott Nelson</b> , <i>UK</i>	
08:50	Discussion	
09:00-09:30	Do we have an effective protocol for decrease ovarian reserve? <b>Frank Broekmans</b> , <i>Netherlands</i>	
09:30-10:00	<b>Debate: Duo-stimulation</b>	
09:30	Pro: <b>Dominique de Ziegler</b> , <i>France</i>	
09:40	Con: <b>Frank Broekmans</b> , <i>Netherlands</i>	
09:50	Discussion	
10:00-10:20	Coffee break, visit the exhibition and e-poster viewing 10:05-10:15: MODERATED E-POSTER SESSION 1 - ART/IVF/INFERTILITY ( <i>Exhibition Hall</i> )	All exhibition areas
10:20-12:20	<b>THE USE OF ADD-ONS</b>	HALL A ( <i>Grand Klimt Hall 2 &amp; 3</i> )
Capsule	Add-ons are frequently used along with IVF, with the assertion that they are the solution for Repeated Implantation Failure (RIF) - despite the lack of soundproofs.	
Chairpersons	<b>Rene Frydman</b> , <i>France</i> <b>Dominique de Ziegler</b> , <i>France</i>	
10:20-10:50	Definition of RIF and failure of add-ons <b>Zion Ben Rafael</b> , <i>Israel</i>	
10:50 - 11:20	<b>Debate: Do we need PGT-A for drawing a diagnosis of RIF?</b>	
10:50	Yes: <b>Paul Pirtea</b> , <i>France</i>	
11:00	No: <b>Edgardo Somigliana</b> , <i>Italy</i>	
11:10	Discussion	
11:20 - 11:50	RIF – intrauterine hCG and PGT-A is that all ESHRE can come up with? <b>Scott Nelson</b> , <i>UK</i>	
<b>LONG RANGE EFFECTS OF REPRODUCTION</b>		
Capsule	Our work does not end with a healthy baby. More and more evidence is accumulating that the interplay between assisted reproduction technologies and certain patients characteristics can have long-term effects on the health and wellbeing of the next generation. In this session we'll explore some of the most fascinating aspects of long range effects of reproduction.	
11:50-12:20	Offspring outcomes of ICSI vs IVF <b>Anja Pinborg</b> , <i>Denmark</i>	
12:20-13:20	<b>INDUSTRY SUPPORTED SESSIONS</b> See pages 39-42 for details	HALLS A, B, C & D
13:20-14:30	13:20-14:30 - Lunch break & visit the exhibition, e-posters viewing 13:30-14:30 - Industry supported movie ( <i>Hall A and live stream to Hall D</i> ) (see page 43)	All exhibition areas
14:30-16:30	<b>FIBROIDS AND INFERTILITY</b>	HALL A ( <i>Grand Klimt Hall 2 &amp; 3</i> ) Live stream to HALL C ( <i>Grand Park Hall 2</i> )
Capsule	With the increased age of IVF patients, close understanding of these solutions for fibroid is mandatory	
Chairpersons	<b>Andrea Tinelli</b> , <i>Italy</i> <b>Teresa Almeida-Santos</b> , <i>Portugal</i>	
14:30-14:50	Myoma FIGO 3 – is hysteroscopy approach feasible? <b>Sergio Haimovich</b> , <i>Spain/Israel</i>	
14:50-15:05	Uterine fibroids-related infertility: What are the mechanisms and the solution? <b>Marie Madeleine Dolmans</b> , <i>Belgium</i>	
15:05-15:35	<b>Debate: Intramural myoma and fertility – the big controversy</b>	
15:05	Pro Surgery: <b>Gernot Hudelist</b> , <i>Austria</i>	
15:15	Con Surgery: <b>Kazem Nouri</b> , <i>Austria</i>	
15:25	Discussion	
15:35-15:50	How to avoid the recurrence of myoma after myomectomy? <b>Jacques Donnez</b> , <i>Belgium</i>	
15:50-16:05	Myoma and uterine malformations, a unique association <b>Luis Alonso Pacheco</b> , <i>Spain</i>	
16:05-16:30	<b>Counter current lecture:</b> Ovarian tissue freezing to delay menopause <b>Marie-Madeleine Dolmans</b> , <i>Belgium</i>	



16:30-16:50	Coffee break, visit the exhibition and e-poster viewing 16:35-16:44 MODERATED E-POSTER SESSION 2 - OTHER (Exhibition Hall)	All exhibition areas
16:50-18:20	<b>FERTILITY PRESERVATION</b>	HALL A (Grand Klimt Hall 2 & 3)
Capsule	Fertility preservation indications keep expanding	
Chairpersons	<b>Klara Rosta</b> , Austria <b>Edgardo Somigliana</b> , Italy	
16:50-17:15	Fertility preservation in women with genetic reduction of ovarian reserve <b>Marie-Madeleine Dolmans</b> , Belgium	
17:15 -17:55 17:15 17:25 17:35	Debate: <b>Is there room for ovarian tissue cryopreservation for breast cancer patients</b> Yes: <b>Michael Grynberg</b> , France No: <b>Michel de Vos</b> , Belgium Discussion	
17:55-18:20	Fertility preservation in borderline and malignant ovarian tumors <b>Michael Grynberg</b> , France	

**HALL B - IVF/ART/INFERTILITY (Grand Klimt Hall 1)**

08:30-10:00	<b>OLD QUESTIONS, NEW ANSWERS?</b>	HALL B (Grand Klimt Hall 1)
Chairpersons	<b>Rita Vassena</b> , Spain <b>Mina Popovic</b> , Spain	
Capsule	Among reports of a fast decrease of sperm quality worldwide, there is a renewed interest in sperm biology and the origin of male factor infertility. This session will explore the most compelling and interesting new research in the mechanism of sperm function and its alterations, and potential treatments.	
08:30-09:15 08:30 08:45 09:00	Debate: <b>Microfluidics for sperm selection: Better reproductive outcomes?</b> Yes: <b>Thomas Freour</b> , France No: <b>Rita Vassena</b> , Spain Discussion	
Capsule	We have spent decades growing embryo in the laboratory, and yet there are dozens of different media and culture systems that seem to provide similar development results across patients and laboratories. Are we at the optimal stage of embryo culture, or are we just getting away with it?	
09:15-10:00 09:15 09:30 09:45	Debate: <b>Are our embryo culture systems the best they can be?</b> Yes: <b>Giovanni Coticchio</b> , Italy No: <b>Sebastiaan Mastenbroek</b> , Netherlands Discussion	
10:00-10:20	Coffee break, visit the exhibition and e-poster viewing 10:05-10:15: MODERATED E-POSTER SESSION 1 - ART/IVF/INFERTILITY (Exhibition Hall)	All exhibition areas
10:20-12:20	<b>IN VITRO MODELS OF EMBRYO AND IMPLANTATION, ARE THEY REALLY USEFUL?</b>	HALL B (Grand Klimt Hall 1)
Capsule	The functional continuum between oocyte and embryo and the early phases of implantation have been historically impossible to study properly. New and exciting developments are shedding light on the early events that define out developmental trajectory. This session will dive deep into the mechanistic research shaping our understanding of the origin of life.	
Chairpersons	<b>Bart Fauser</b> , Netherlands <b>Giovanni Coticchio</b> , Italy <b>Anne Goriely</b> , UK	
<b>WHY DO EMBRYOS FRAGMENT, AND WHAT DOES IT MEAN?</b>		
10:20-10:35	The biology of blastomere fragmentation <b>Jean Leon Maître</b> , France	
10:35-10:50	The clinical significance of embryo fragmentation <b>Thomas Ebner</b> , Austria	
10:50-11:05	Discussion	
<b>IN VITRO MODELS OF EMBRYO AND IMPLANTATION, ARE THEY REALLY USEFUL?</b>		
11:05-11:20	In vitro implantation: What have we learned so far? <b>Mina Popovic</b> , Spain	
11:20-11:35	Mechanisms of embryo failure at implantation <b>Marta Shahbazi</b> , UK (virtual)	
11:35-11:50	Discussion	
11:50-12:20	Embryo blastoids as models of human embryo development: What have we learned <b>Nicolas Rivon</b> , Austria	



12:20-13:20	<b>INDUSTRY SUPPORTED SESSIONS</b> <i>See pages 39-42 for details</i>	HALLS A, B, C & D
13:20-14:30	13:20-14:30 - Lunch break & visit the exhibition, e-posters viewing 13:30-14:30 - Industry supported movie (Hall A and live stream to Hall D) (see page 43)	All exhibition areas
14:30-16:30	<b>FROM BENCH TO BED-SIDE? THE CENTRAL ROLE OF FERTILIZATION IN ART</b>	HALL B (Grand Klimt Hall 1)
<b>Capsule</b>	This session will explore some of the initial events in gamete and embryo biology with a focus on translational research, to understand the reasons behind clinical observations and the development of molecular and genetic tool to improve assisted reproduction outcomes.	
<b>Chairpersons</b>	<b>Jean Leon Maitre</b> , France <b>Rita Vassena</b> , Spain	
14:30-14:55	Older father and IVF reproductive outcomes <b>Thomas Freour</b> , France	
14:55-15:20	Oocyte modifications and early developmental events <b>Giovanni Coticchio</b> , Italy	
15:20-15:45	The sperm function in the oviduct and in the dish <b>Mariano Buffone</b> , Spain	
15:45-16:10	The selfish spermatogonia and paternal effect genes <b>Anne Goriely</b> , UK	
16:10-16:30	Discussion	
16:30-16:50	Coffee break, visit the exhibition and e-poster viewing 16:35-16:44 MODERATED E-POSTER SESSION 2 - OTHER (Exhibition Hall)	All exhibition areas
16:50-18:20	<b>PGT</b>	HALL B (Grand Klimt Hall 1)
<b>Capsule</b>	While invasive PGT-A is an established technique, whether useful or not, other kinds of PGTs are entering the scene, taking advantage of new technological developments and knowledge gathered from other areas of genetics. This session will explore the genetic analyses that can be performed on the embryo, and assess their readiness for the clinic.	
<b>Chairpersons</b>	<b>Sebastian Mastenbroek</b> , Netherlands <b>Giovanni Coticchio</b> , Italy	
16:50-17:30	<b>Debate: To improve IVF outcomes non-invasive PGT is the future</b>	
16:50	Pro: <b>Thomas Ebner</b> , Austria	
17:00	Con: <b>Mina Popovic</b> , Spain	
17:10	Discussion	
17:30-17:55	PGT for polygenic diseases <b>Shai Carmi</b> , Israel (virtual)	
17:55-18:20	Why the PGT-A hypothesis for biological reasons, simply, cannot work <b>Norbert Gleicher</b> , USA	

## HALL C - GYNECOLOGY (Grand Park Hall 2)

08:30-10:00	<b>PERIMENOPAUSAL CONTRACEPTION</b>	HALL C (Grand Park Hall 2)
<b>Capsule</b>	Oral contraception until menopause?	
<b>Chairpersons</b>	<b>Santiago Palacios</b> , Spain <b>Nick Panay</b> , UK	
08:30-08:45	Perimenopausal contraception: What should we offer? <b>Christian Egarter</b> , Austria	
08:45-09:00	Hot flushes, peripheral or central nervous system? <b>Mark Brincat</b> , Malta	
09:00-09:15	Optimizing psychosexual health with perimenopausal contraception <b>Rossella Nappi</b> , Italy	
09:15-09:30	Discussion	
09:30-10:00	<b>Debate: Lichen Sclerosus or Vulvodynia</b>	
09:30	Lichen Sclerosus: <b>Zdenko Vizintin</b> , Slovenia	
09:40	Vulvodynia: <b>Mark Brincat</b> , Malta	
09:50	Discussion	
10:00-10:20	Coffee break, visit the exhibition and e-poster viewing 10:05-10:15: MODERATED E-POSTER SESSION 1 - ART/IVF/INFERTILITY (Exhibition Hall)	All exhibition areas



10:20-11:40	<b>IMS SESSION: MANAGING CLINICAL DILEMMAS IN DAY-TO-DAY MENOPAUSE PRACTICE</b>	HALL C ( <i>Grand Park Hall 2</i> )
Capsule	The International Menopause Society session, generously hosted by COGI, is designed to provide practical tools for the clinician to manage challenging conditions and clinical conundrums associated with hormone related disorders, including menopause. There will be formal presentations from experts on each topic, and ample opportunity for questions and answers and discussion.	
Chairpersons	<b>Nick Panay, UK</b> <b>Santiago Palacios, Spain</b> <b>Christian Egarter, Austria</b>	
10:20-10:35	Predicting, preventing and optimising cardiometabolic menopause outcomes in “at risk” women <b>Tommaso Simoncini, Italy (virtual)</b>	
10:35-10:50	Managing perimenopause patients with severe premenstrual disorders <b>Nick Panay, UK</b>	
10:50-11:05	Dealing with VVA/GSM in patients contraindicated to or unresponsive to topical estrogen <b>Santiago Palacios, Spain</b>	
11:05-11:20	Managing sexuality issues in patients contraindicated to or unresponsive to estrogens and androgens <b>Rossella Nappi, Italy</b>	
11:20-11:40	Panel discussion	
11:40-12:20	<b>ENDOMETRIOSIS, PAIN COMORBIDITIES AND SEXUALITY</b>	HALL C ( <i>Grand Park Hall 2</i> )
Chairpersons	<b>Nick Panay, UK</b> <b>Christian Egarter, Austria</b>	
11:40-12:00	Endometriosis: The challenge to anticipate the diagnosis below the visibility threshold <b>Alessandra Graziottin, Italy</b>	
12:00-12:20	Endometriosis and sexuality <b>Elisa Maseroli, Italy</b>	
12:20-13:20	<b>INDUSTRY SUPPORTED SESSIONS</b> <i>See pages 39-42 for details</i>	HALLS A, B, C & D
13:20-14:30	<i>13:20-14:30 - Lunch break &amp; visit the exhibition, e-posters viewing</i> <i>13:30-14:30 - Industry supported movie (Hall A and live stream to Hall D) (see page 43)</i>	<i>All exhibition areas</i>
14:30-16:30	<b>FIBROIDS AND INFERTILITY</b>	<i>Live stream from HALL A</i>
Capsule	With the increased age of IVF patients, close understanding of these solutions for fibroid is mandatory	
Chairpersons	<b>Andrea Tinelli, Italy</b> <b>Teresa Almeida-Santos, Portugal</b>	
14:30-14:50	Myoma FIGO 3 – is hysteroscopy approach feasible? <b>Sergio Haimovich, Spain/Israel</b>	
14:50-15:05	Uterine fibroids-related infertility: What are the mechanisms and the solution? <b>Marie Madeleine Dolmans, Belgium</b>	
15:05-15:35	<b>Debate: Intramural myoma and fertility – the big controversy</b>	
15:05	Pro Surgery: <b>Gernot Hudelist, Austria</b>	
15:15	Con Surgery: <b>Kazem Nouri, Austria</b>	
15:25	Discussion	
15:35-15:50	How to avoid the recurrence of myoma after myomectomy? <b>Jacques Donnez, Belgium</b>	
15:50-16:05	Myoma and uterine malformations, a unique association <b>Luis Alonso Pacheco, Spain</b>	
16:05-16:30	<b>Counter current lecture: Ovarian tissue freezing to delay menopause</b> <b>Marie-Madeleine Dolmans, Belgium</b>	
16:30-16:50	<i>Coffee break, visit the exhibition and e-poster viewing</i> <i>16:35-16:44 MODERATED E-POSTER SESSION 2 - OTHER (Exhibition Hall)</i>	<i>All exhibition areas</i>
16:50-18:20	<b>PREDICTION AND MANAGEMENT OF MENOPAUSE</b>	HALL C ( <i>Grand Park Hall 2</i> )
Capsule	Can we predict and prevent menopausal complications and side effects?	
Chairpersons	<b>Nick Panay, UK</b> <b>Alessandra Graziottin, Italy</b>	
16:50-17:20	Does anti-Müllerian hormone predict menopause <b>Joop Laven, Netherlands</b>	
17:20-17:50	<b>Debate: Patients with early menopause should be treated continuously to prevent chronic diseases</b>	
17:20	For: <b>Nick Panay, UK</b>	
17:30	Against: <b>Mark Brincat, Malta</b>	
17:40	Discussion	
17:50-18:20	<b>Debate: Menopause symptoms and diseases can be managed without Menopausal HT?</b>	
17:50	For: <b>Santiago Palacios, Spain</b>	
18:00	Against: <b>Rossella Nappi, Italy</b>	
18:10	Discussion	





## HALL D - FETOMATERNAL MEDICINE (Grand Park Hall 3)

08:30-10:00	<b>GESTATIONAL DIABETES MELLITUS (GDM), OBESITY</b>	HALL D (Grand Park Hall 3)
Chairpersons	<b>Nir Melamed</b> , Canada <b>Gerard Visser</b> , Netherlands	
08:30-08:50	How to define patients with GDM as well controlled? <b>Yariv Yogev</b> , Israel	
08:50-09:10	Obesity or GDM - what is more important for pregnancy outcome <b>Gerard Visser</b> , Netherlands	
09:10-09:30	GDM in twins - more good than harm <b>Nir Melamed</b> , Canada	
09:30-10:00	<b>Debate: Should we induce all GDM at 38 weeks of gestation?</b>	
09:30	Yes- TBA	
09:40	No- <b>Amir Aviram</b> , Canada	
09:50	Discussion	
10:00-10:20	Coffee break, visit the exhibition and e-poster viewing 10:05-10:15: MODERATED E-POSTER SESSION 1 - ART/IVF/INFERTILITY (Exhibition Hall)	All exhibition areas
10:20-11:50	<b>PROGESTERONE AND PRE-ECLAMPSIA: WHAT ARE THE FUTURE TRENDS?</b>	HALL D (Grand Park Hall 3)
Chairpersons	<b>Asma Khalil</b> , UK <b>Julia Binder</b> , Austria	
10:20-10:25	Introducing the topic that warrants new research on the progesterone effect on preeclampsia <b>Asma Khalil</b> , UK	
10:25-10:45	Progesterone and pre-eclampsia: Where is the connection and current evidence? <b>Pedro Melo</b> , UK	
10:45-11:05	Should angiogenic markers be included as diagnostic markers for pre-eclampsia <b>Julia Binder</b> , Austria	
11:05-11:20	Editorial comments on the topics presented <b>Asma Khalil</b> , UK	
11:50-12:20	<b>ORAL PRESENTATIONS 2 – FETOMATERNAL MEDICINE</b>	HALL D (Grand Park Hall 3)
Chairpersons	<b>Asma Khalil</b> , UK <b>Julia Binder</b> , Austria	
11:50-11:57	Efficacy of dexamethasone in accelerating postpartum recovery among women with HELLP (hemolysis, elevated liver enzymes, and low platelet) syndrome and its maternal complications in Bicol Medical Center <b>Gladys May Cojo</b> , Philippines	
11:57-12:04	Predictors of placental lesions in pregnancies complicated by Gestational Diabetes Mellitus <b>Chiara Dossi</b> , Italy	
12:04-12:11	Prognostic value of angiogenic markers in pregnancies with fetal growth restriction <b>Pilar Palmrich</b> , Austria	
12:11-12:18	Serum level of Interleukin-17, C-Reactive protein, and uric acid as predictive biomarkers in early-onset and late-onset preeclampsia <b>Emasrissa Latifah Murwani</b> , Indonesia	
12:20-13:20	<b>INDUSTRY SUPPORTED SESSIONS</b> See pages 39-42 for details	HALLS A, B, C & D
13:20-14:30	13:20-14:30 - Lunch break & visit the exhibition, e-posters viewing 13:30-14:30 - Industry supported movie (Hall A and live stream to Hall D) (see page 43)	All exhibition areas
14:30-16:30	<b>INTRAUTERINE GROWTH RESTRICTION (IUGR)</b>	HALL D (Grand Park Hall 3)
Chairpersons	<b>Eran Ashwal</b> , Canada <b>Nir Melamed</b> , Canada	
14:30-14:50	The use and misuse of dopplers in FGR studies <b>Amir Aviram</b> , Canada	
14:50-15:10	Assessment of fetal growth - which chart should we use? <b>Liran Hiersch</b> , Israel (virtual)	
15:10-15:30	Fetal growth restriction in twin pregnancies - when is smaller too small? <b>Nir Melamed</b> , Canada	
15:30-15:50	Late vs. early FGR <b>Gerard Visser</b> , Netherlands	
15:50-16:00	Panel discussion	
16:00-16:30	Do we need specific charts to assess intrauterine fetal growth in twins? <b>Asma Khalil</b> , UK	
16:30-16:50	Coffee break, visit the exhibition and e-poster viewing 16:35-16:44 MODERATED E-POSTER SESSION 2 - OTHER (Exhibition Hall)	All exhibition areas



16:50-18:20	<b>NEW TECHNOLOGIES IN OBSTETRICS</b>	HALL D ( <i>Grand Park Hall 3</i> )
Chairpersons	<b>Asma Khalil, UK</b> <b>Florian Kiefer, Austria</b> <b>Christian Göbl, Austria</b>	
16:50-17:10	Pessary and other mechanical features for prevention of PTL <i>TBA</i>	
17:10-17:40 17:10 17:20 17:30	<b>Debate: Advantages and limitations of novel technology in the treatment of diabetes in pregnancy</b> Continuous Glucose Monitoring is effective: <b>Latife Bozkurt, Austria</b> Continuous Glucose Monitoring is not effective: <b>Christian Göbl, Austria</b> Discussion	
17:40-17:55	Analyses of CGM data and how to assess glucose variability <b>Andrea Tura, Italy</b>	
17:55-18:10	Home blood pressure monitoring in pregnancy (home health/digital health) <b>Asma Khalil, UK</b>	
18:10-18:20	Sleep disorders, melatonin, and pregnancy complications <b>Andrii Berbets, Ukraine</b>	

**HALL E - ORAL PRESENTATIONS** (*Park Suite 1*)

08:30-10:01	<b>ORAL PRESENTATIONS 1 - GYNECOLOGY</b>	HALL E ( <i>Park Suite 1</i> )
Chairpersons	<b>Linda Harel, Israel</b> <b>Attila Vereczkey, Hungary</b>	
08:30-08:37	VAGINAL SYNECHIAE PRESENTING AS PRIMARY INFERTILITY: A CASE REPORT <b>Kimberly April Asio, Philippines</b>	
08:37-08:44	MULLERIAN DUCT APLASIA – RENAL AGENESIS – CERVICOTHORACIC SOMITE DYSPLASIA (MURCS) ASSOCIATION WITH KLIPPEL FEIL SYNDROME (KFS): A CASE REPORT <b>Diana Barretto, Philippines</b>	
08:44-08:51	REDUCED BLEEDING FOLLOWING NON-ABLATIVE THERMAL ND: YAG LASER TREATMENT OF HEAVY MENSTRUAL BLEEDING IN PERIMENOPAUSE <b>Urška Bizjak-Ogrinc, Slovenia</b>	
08:51-08:58	INOSITOL THERAPY IN TREATING SUBFERTILE WOMEN AND ADOLESCENT GIRLS WITH PCOS <b>Lalit Bora, India</b>	
08:58-09:05	VAGINISMUS AND INFERTILITY: WHY IMPOSE PENETRATIVE INTERCOURSE? <b>Danielle Choucroun, Luxembourg</b>	
09:05-09:12	A RARE CASE OF ANGIOMYXOMA OF THE VULVA – A CASE REPORT <b>Emina Ejubovic, Bosnia and Herzegovina</b>	
09:12-09:19	POTENTIAL OF NON-INVASIVE ER:YAG SMOOTH® LASER AND HIGH-INTENSITY TESLA MAGNETIC STIMULATION (HITS®) TREATMENT OF URINARY INCONTINENCE IN WOMEN <b>Ivan Fistonc, Croatia</b>	
09:19-09:26	ENHANCING PRECISION: FLUOROSCOPY-GUIDED REMOVAL OF DEEP CONTRACEPTIVE IMPLANTS <b>Ines Gil Dos Santos, Portugal (virtual)</b>	
09:26-09:33	THE PLACEBO EFFECT AND ITS USE IN GYNECOLOGY <b>Linda Harel, Israel</b>	
09:33-09:40	INFECTED ENDOMETRIOMA LEADING TO CUTANEOUS FISTULA FORMATION <b>Payam Katebi Kashi, USA</b>	
09:40-09:47	THE EFFECT OF HEALTH-SEEKING BEHAVIOR ON KNOWLEDGE OF PELVIC FLOOR HEALTH IN WOMEN <b>Melek Hava Koprulu, Turkiye</b>	
09:47-09:54	SUCCESSFUL TRANSITION FROM MULTI-PORT TO SINGLE-PORT FOR LAPAROSCOPIC HYSTERECTOMY IN THE TREATMENT OF SYMPTOMATIC LEIOMYOMA AND/OR ADENOMYOSIS USING ARTISENTIAL® WRISTED ARTICULATED INSTRUMENT; AN OBSERVATIONAL COHORT STUDY <b>Hee Jeung Lim, South Korea</b>	
09:54-10:01	IMPACT OF HEREDITARY COAGULATION DISORDERS IN FERTILE AGE WOMEN – A RELEVANT SOURCE OF MORBIDITY? <b>Carolina Moura, Portugal (virtual)</b>	
10:00-10:20	<i>Coffee break, visit the exhibition and e-poster viewing</i> 10:05-10:15: MODERATED E-POSTER SESSION 1 - ART/IVF/INFERTILITY ( <i>Exhibition Hall</i> )	<i>All exhibition areas</i>
10:20-12:20	<b>ORAL PRESENTATIONS 3 – FETOMATERNAL MEDICINE</b>	HALL E ( <i>Park Suite 1</i> )
Chairperson	<b>Micaela Morettini, Italy</b> <b>Eileen Manalo, Philippines</b>	
10:20-10:27	INCREASING VACCINE UPTAKE DURING PREGNANCY BY USING PRENATAL EDUCATION CLASSES: AN EFFECTIVE TOOL FOR HEALTH COMMUNICATION AND PROMOTION <b>Silvia Perossini, Italy</b>	
10:27-10:34	ADDED VALUE OF VITAMIN D SUPPLEMENTATION IN THE STANDARD OF CARE FOR TREATING GESTATIONAL MELLITUS DIABETES <b>Rossella Prospero, Italy</b>	



10:34-10:41	IMPACT OF DIFFERENT STRATEGIES OF TREATMENT FOR GESTATIONAL DIABETES MELLITUS ON PLACENTAL FINDINGS <b>Lucrezia Loda, Italy</b>	
10:41-10:48	EFFECT OF COVID-19 INFECTION IN PLACENTAL HISTOLOGY: ANALYSIS OF VARIANTS ACCORDING TO THE DIFFERENT PANDEMIC WAVES <b>Silvia Gherardi, Italy</b>	
10:48-10:55	SLOW-RELEASE METFORMIN FOR TREATING GESTATIONAL MELLITUS DIABETES IN PRESENCE OF LANGUAGE BARRIERS: EVIDENCE FROM THE FIRST STUDY IN ITALY AFTER ITS AUTHORIZATION IN PREGNANCY <b>Cavallaro Damiana, Italy</b>	
10:55-11:02	THE EFFECT OF DOUBLE-BALLOON CERVICAL RIPENING CATHETER ON CERVICAL SHORTENING RATES IN NULLIPAROUS AND MULTIPAROUS WOMEN <b>Melih Velipasaoglu, Turkiye</b>	
11:02-11:09	UNUSUAL PRESENTATION OF PLACENTA ACCRETA <b>Howaida Zahhar, Saudi Arabia</b>	
11:09-11:16	NEW POSSIBILITIES TO USE CARDIOTOCOGRAPHY TO ASSESS THE FETAL FUNCTIONAL STATE IN THE SECOND TRIMESTER OF PREGNANCY <b>Rozaliia Zamaleeva, Russia</b>	
11:16-11:23	EFFECTS OF ALLOSTATIC LOAD ON GESTATIONAL DIABETES MELLITUS AND PRETERM LABOR: ANALYSIS OF A CHINESE COHORT <b>Xu Zhou, China</b>	
11:23-11:30	THE CORRELATION BETWEEN THE VITAMIN D RECEPTOR AND TIMP-1 IN THE PLACENTA ACCRETA SPECTRUM <b>Yoga Paripurna, Indonesia</b>	
11:30-11:37	RISK FACTORS FOR EMERGENT DELIVERY BEFORE 36 WEEKS AMONG PREGNANT WOMEN WITH PLACENTA ACCRETA SPECTRUM DISORDER – EXPERIENCE FROM A TERTIARY CENTER IN THAILAND <b>Nawaporn Phetrat, Thailand</b>	
11:37-11:44	A STUDY ON THE AGREEMENT BETWEEN ANTENATAL DIAGNOSIS OF PLACENTA ACRETA SPECTRUM (PAS) BY ULTRASOUND AND INTRA-OPERATIVE CLINICAL GRADING BY FIGO CORRELATED WITH PATHOLOGY RESULTS <b>Warittha Limsirisawat, Thailand</b>	
11:44-11:51	A SUCCESSFUL VAGINAL MYOMECTOMY IMPROVE THE OUTCOME OF PEDUNCULATED SUBMUCOSAL FIBROID DURING CAESAREAN SECTION AT RURAL HOSPITAL: A RARE CASE REPORT <b>Andika Pratama, Indonesia</b>	
11:51-11:58	MANAGEMENT OF A VIABLE THIRD TRIMESTER ABDOMINAL PREGNANCY <b>John Paul Reyes, Philippines</b>	
11:58-12:05	COMPARISON OF HYPERIMMUNE GLOBULIN THERAPY EVERY TWO WEEKS VERSUS EVERY FOUR WEEKS FOR PREGNANT WOMEN WITH PRIMARY CYTOMEGALOVIRUS INFECTION <b>Nawa Schirwani-Hartl, Austria</b>	
12:05-12:12	ANTIIPHOSPHOLIPID ANTIBODIES SCREENING IN WOMEN PRESENTING WITH PRETERM DELIVERY DUE TO PREECLAMPSIA OR PLACENTAL INSUFFICIENCY – IS IT WORTH IT? <b>Sara Sereno, Portugal</b>	
12:12-12:19	CHALLENGES AND SOLUTIONS OF MAJOR THALASSEMIA COMPLICATED BY PULMONARY TUBERCULOSIS, SEVERE PREECLAMPSIA & HELLP SYNDROME: A RARE CASE REPORT <b>Dani Setiawan, Indonesia (virtual)</b>	
12:20-13:20	<b>INDUSTRY SUPPORTED SESSIONS</b> See pages 39-42 for details	HALLS A, B, C & D
13:20-14:30	13:20-14:30 - Lunch break & visit the exhibition, e-posters viewing 13:30-14:30 - Industry supported movie (Hall A and live stream to Hall D) (see page 43)	All exhibition areas
14:30-16:30	<b>ORAL PRESENTATIONS 4 – ART/IVF/INFERTILITY</b>	HALL E (Park Suite 1)
Chairpersons	<b>Mattheos Fraidakis, Greece</b> <b>Franco Borruto, Monaco</b>	
14:30-14:37	RELATIONSHIP BETWEEN SERUM PROGESTERONE CONCENTRATION AND PREGNANCY RATE IN CLEAVAGE-STAGE FROZEN-THAWED EMBRYO TRANSFER AFTER ARTIFICIAL ENDOMETRIAL PREPARATION <b>Olivia Attolico, Italy</b>	
14:37-14:44	WHAT IS THE OPTIMAL CUT OFF VALUE OF NUMBER OF EGG DONATION FROM SAME EGG DONOR LIFE TIME? <b>Biol Aydin, Slovakia</b>	
14:44-14:51	GOLDEN EGG. DOES GENETICALLY TESTED OOCYTE CAN INCREASE EFFICIENCY? <b>Biol Aydin, Slovakia</b>	
14:51-14:58	DYDROGESTERONE VERSUS CONVENTIONAL GONADOTROPIN RELEASING HORMONE ANTAGONIST FOR PREVENTION OF PREMATURE LUTEINIZING HORMONE SURGE DURING CONTROLLED OVARIAN STIMULATION <b>Ludmila Barbakadze, Georgia</b>	
14:58-15:05	IS MY CLINIC READY FOR AI? EFFECT OF CYCLE NUMBERS AND DATA COMPLETENESS ON THE PREDICTION OF MATURE OOCYTES (MII) <b>Lucie Borovickova, Czech Republic</b>	
15:05-15:12	SUPEROVULATION CYCLE. A NEW WAY TO HAVE BETTER ENDOMETRIAL RESPONSE DURING ERA AND EMBRYO TRANSFER CYCLES: A CASE SERIES <b>Daniella Cardenas Armas, UK</b>	
15:12-15:19	ARE WE THERE YET? – REAL WORLD EXPERIENCE OF THE SAFETY AND EFFICACY PROFILE OF FOLLITROPIN DELTA USING DOSING ALGORITHM IN POTENTIAL HYPER-RESPONDERS <b>Meenakshi Choudhary, UK</b>	



15:19-15:26	AN INTERPRETABLE ARTIFICIAL INTELLIGENCE (AI) MODEL PREDICTS BLASTOCYST DEVELOPMENT FROM SEGMENTED IMAGES OF MATURE (METAPHASE II, MII) OOCYTES <b>Isabel Puerta Vega, Canada</b>	
15:26-15:33	THE IMPACT OF EMBRYO BIOPSY TIMING ON PREGNANCY RATES IN PATIENTS UNDERGOING PREIMPLANTATION GENETIC TESTING FOR ANEUPLOIDY WITH FRESH EMBRYO TRANSFER <b>Walid Ghutmi, United Arab Emirates</b>	
15:33-15:40	CONSERVATIVE VERSUS RADICAL SURGICAL MANAGEMENT OF CESAREAN SCAR ECTOPIC PREGNANCY: A REPORT OF 2 CASES <b>Ma Melody Diaz, Philippines (virtual)</b>	
15:40-15:47	POST WAR EGG DONOR CYCLES OUTCOME: DOES PSYCHOLOGICAL ADJUSTMENT OF EGG DONORS AND STRESS FACTOR INFLUENCE EFFICIENCY ? <b>Ulyana Dorofeyeva, Slovakia</b>	
15:47-15:54	PROGESTERONE-PRIMED OVARIAN STIMULATION COMPARED WITH GNRH ANTAGONIST IN FERTILITY PRESERVATION CYCLES FOR MEDICAL REASONS. <b>Manuel Duarte Perez, Spain</b>	
15:54-16:01	SOCIAL FREEZERS – DO THEY EVER COME BACK <b>Desislava Dyulgerova-Nikolova, Bulgaria</b>	
16:01-16:08	LONG-TERM IMPACT OF COVID-19 PANDEMIC ON ART-MEDIATED BIRTHS IN LOMBARDY, ITALY <b>Francesca Filippi, Italy</b>	
16:08-16:15	CUMULATIVE DELIVERY RATE IN IVF CYCLES WITH OWN OOCYTES IN SPAIN: TREND OVER TIME AND ANALYSIS OF 516776 CYCLES FROM 2009 TO 2020 <b>Rocío Núñez Calonge, Spain</b>	
16:15-16:22	REPRODUCTIVE OUTCOMES IN COUPLES WHO LOST THEIR CHILD DURING THE WAR: EVALUATING THE EFFECTIVENESS OF A STATE ASSISTANCE PROGRAM FOR POST-WAR FAMILIES APPLYING FOR ASSISTED REPRODUCTIVE TECHNOLOGIES <b>Tatevik Kirakosyan, Armenia</b>	
16:22-16:29	BREAKING THE SILENCE: SHEDDING LIGHT ON THE SILENT CONSEQUENCES OF EMBRYO QUALITY AND ANEUPLOIDY AND OBESITY IN HUMAN DEVELOPMENT <b>Fernando Prado Ferreira, Brazil</b>	
16:30-16:50	Coffee break, visit the exhibition and e-poster viewing 16:35-16:44 MODERATED E-POSTER SESSION 2 - OTHER (Exhibition Hall)	All exhibition areas
16:50-18:21	<b>ORAL PRESENTATIONS 5 – FETOMATERNAL MEDICINE</b>	HALL E (Park Suite 1)
Chairperson	<b>Gerard Visser, Netherlands</b>	
16:50-16:57	DETERMINING PREGNANT WOMEN'S BODY IMAGE PERCEPTIONS AND THEIR IMPACT ON SEXUAL RESPONSE DURING PREGNANCY <b>Menekse Nazli Aker, Turkiye</b>	
16:57-17:04	MANAGING SUPRAVENTRICULAR TACHYCARDIA (SVT) DURING PREGNANCY, LABOR AND DELIVERY <b>Frederick Eruo, USA</b>	
17:04-17:11	NEW MODIFIED SHIRODKAR TECHNIQUE "AKHAN TECHNIQUE" FOR URGENT CERCLAGE; ANALYSIS OF PRELIMINARY DATA <b>Sleyman Engin Akhan, Turkiye</b>	
17:11-17:18	KNOWLEDGE, ATTITUDE AND PRACTICE ON GLYCEMIC CONTROL AMONG PREGNANT WOMEN WITH GESTATIONAL DIABETES MELLITUS IN A TERTIARY HOSPITAL IN THE PHILIPPINES <b>Charisse Anne Aquino, Philippines</b>	
17:18-17:25	STREPTOCOCCAL TOXIC SHOCK SYNDROME (STSS) AFTER IMMEDIATE POST-PARTUM INTRA-UTERINE DEVICE INSERTION <b>Dana Lee Benitez, Philippines</b>	
17:25-17:32	POSTPARTUM ECLAMPSIA: POSTERIOR REVERSIBLE ENCEPHALOPATHY SYNDROME DIAGNOSED AT POSTPARTUM DAY 11 <b>Rachel Dominique Conti-Rafael, Philippines</b>	
17:32-17:39	A DELPHI CONSULTATION ON CRITERIA SUPPORTING THE DECISION TO REFER PREGNANT WOMEN FROM A PRIMARY CARE PROVIDER TO A SPECIALIST DURING ANTENAL FOLLOW-UP <b>Elena Costa, Belgium</b>	
17:39-17:46	OOCYTE SELECTION: THE PRESSURE OF CONSTANT MUTATIONS VERSUS THE NEED FOR HEALTHY OFFSPRING <b>Piet De Groen, USA</b>	
17:46-17:53	SPONTANEOUS INTRACEREBRAL HEMORRHAGE IN A COVID 19 POSTPARTUM WITH PREECLAMPSIA: A CASE REPORT <b>Jamielou Dizon, Philippines</b>	
17:53-18:00	EXPLORING PSYCHIATRIC DISORDERS IN PREGNANT WOMEN: A RETROSPECTIVE ANALYSIS OF OUTCOMES AND IMPLICATIONS <b>Ines Gil Dos Santos, Portugal (virtual)</b>	
18:00-18:07	LARGE ANTERIOR LOWER SEGMENT UTERINE FIBROIDS IN PREGNANCY--MANAGEMENT OPTIONS <b>Frederick Eruo, USA</b>	
18:07-18:14	ORAL HEALTH IS OVERALL HEALTH: ASSOCIATION OF MATERNAL PERIODONTAL DISEASE WITH PRETERM BIRTH, A CASE CONTROL STUDY <b>Bernadette Cris Festejo, Philippines</b>	
18:14-18:21	NEWBORN CLAVICLE FRACTURES – 5 YEAR-REVIEW OF A CENTRAL HOSPITAL <b>Joana Galvao, Portugal</b>	



**HALL A - ART/IVF/Infertility** (Grand Klimt Hall 2 & 3)

08:30-10:00	<b>PCO/PCOS</b>	HALL A (Grand Klimt Hall 2 & 3)
Capsule	Full elucidation of all aspects of this enigmatic syndrome is the basis for innovative treatments.	
Chairpersons	<b>Florian Kiefer, Austria</b> <b>Norbert Gleicher, USA</b>	
08:30-09:00	In vitro maturation (IVM) of oocytes in PCOS <b>Michel de Vos, Belgium</b>	
09:30-10:00	An update of the international guideline on PCOS <b>Joop Laven, Netherlands</b>	
09:30-10:00	Clinical general health implications of different PCOS phenotypes <b>Norbert Gleicher, USA</b>	
10:00-10:20	Coffee break, visit the exhibition and e-poster viewing All exhibition areas	
10:20-11:50	<b>REPEATED MISCARRIAGE</b>	HALL A (Grand Klimt Hall 2 & 3)
Capsule	Be it two or three successive miscarriages, do we have a proven solution?	
Chairpersons	<b>Giovanni Coticchio, Italy</b> <b>Anja Pinborg, Denmark</b>	
10:20-10:40	Recurrent implantation failure and the microbiome <b>Joop Laven, Netherlands</b>	
10:40-11:10	<b>Debate: Proposition Uterine Septum Repair before IVF?</b>	
10:40	Yes: <b>Jacques Donnez, Belgium</b>	
10:50	No: <b>Edgardo Somigliana, Italy</b>	
11:00	Discussion	
11:10-11:30	Treatment of threatened miscarriage is not required beyond 9 weeks <b>Martina Kollmann, Austria</b>	
11:30-11:50	Rethinking miscarriages: Are aneuploidies as causal as has been thought <b>Norbert Gleicher, USA</b>	
11:50-12:00	Short break	
12:00-13:30	<b>DISCUSSION ON PRACTICAL HOT CONTROVERSIES</b>	HALL A (Grand Klimt Hall 2 & 3)
Capsule	Audience expert opinion on "what do you do when..." controversial issues	
Moderators	<b>Zion Ben Rafael, Israel</b> <b>Bart Fauser, Netherlands</b>	
Panelists:	<b>Thomas Ebner, Austria</b> <b>Sebastian Mastenbroek, Netherlands</b> <b>Giovanni Coticchio, Italy</b> <b>Scott Nelson, UK</b> <b>Edgardo Somigliana, Italy</b> <b>Astrid Stecher, Austria</b>	
	<p>What should we do:</p> <ol style="list-style-type: none"> <li>1. When a high percentage of eggs are immature?</li> <li>2. When the fertilization rate is low?</li> <li>3. When ET fails due to cervical constriction?</li> <li>4. When blastulation rates are low/there is a blast-only policy?</li> <li>5. When semen quality is borderline for IVF?</li> <li>6. Timings in the lab vs. outcomes? (OPU to IVF or to ICSI, What sperm selection method is best?)</li> <li>7. Should "time-to-pregnancy" represent the most important driver of our actions?</li> <li>8. Should we embrace the view of aiming for many oocytes in order the increase chances for a second child from the same stimulation cycle?</li> <li>9. What would represent the best parameter to define a high-quality IVF program?</li> <li>10. What should we do when IVF outcomes in our clinical are suboptimal?</li> </ol>	
13:30-14:30	<p>Lunch break, visit the exhibition and e-poster viewing</p> <p>13:40-13:52: MODERATED E-POSTER SESSION 3 (screen 1) - GYNECOLOGICAL ONCOLOGY &amp; GYNECOLOGY (Exhibition Hall)</p> <p>13:40 – 14:16: MODERATED E-POSTER SESSION 4 (screen 2) - FETOMATERNAL MEDICINE (Exhibition Hall)</p>	All exhibition areas
14:30-16:30	<b>LABORATORY WORK</b>	HALL A (Grand Klimt Hall 2 & 3)
Chairpersons	<b>Stefan Jirecek, Austria</b> <b>Olha Mykytas, Austria</b>	
14:30-15:00	Blastocyst - Endometrium crosstalk: What is new? <b>Jan Brosens, UK</b>	
15:00-15:30	Ovarian rejuvenation <b>Cesar Diaz-Garcia, UK</b>	





15:30-16:00	Proven and unproven techniques currently used in the IVF lab <b>Sebastiaan Mastenbroek, Netherlands</b>
16:00-16:30	<b>Debate: Should extended embryo culture to the blastocyst stage be the routine practice in IVF centers?</b>
16:00	Yes: <b>Thomas Ebner, Austria</b>
16:10	No: <b>Norbert Gleicher, USA</b>
16:20	Discussion

**HALL B - IVF/ART/Infertility II (Grand Klimt Hall 1)**

08:30-10:00	<b>ENDOMETRIOSIS AND INFERTILITY</b>	HALL B (Grand Klimt Hall 1) & Live stream to HALL C (Grand Park Hall 2)
Chairpersons	<b>René Wenzl, Austria</b> <b>Heinrich Husslein, Austria</b>	
08:30-08:50	Future biomarkers of endometriosis <b>Arne Vanhie, Belgium</b>	
08:50-09:15	Is endometriosis associated with ovarian cancer and argument for surgery in reproductive age <b>Johnny Younis, Israel</b>	
09:15-09:35	Advanced imaging of endometriosis and adenomyosis <b>Heinrich Husslein, Austria</b>	
09:35-10:00	How to preserve fertility in case of endometriosis? <b>Julian Marschalek, Austria</b>	
10:00-10:20	Coffee break, visit the exhibition and e-poster viewing	All exhibition areas
10:20-11:50	<b>NEW FRONTIERS IN OVULATORY DYSFUNCTION: NEW GUIDELINES &amp; NEW TOOLS FOR FERTILITY PROGNOSIS</b>	HALL B (Grand Klimt Hall 1)
Chairpersons	<b>Bart Fauser, Netherlands</b> <b>Nick Panay, UK</b>	
10:20-10:45	ESHRE, ASRM, CREWHIRL and IMS New guidelines for management of POI <b>Nick Panay, UK</b>	
10:45-11:05	ESHRE, ASRM, CREWHIRL and IMS New guidelines for the genetic diagnosis of POI <b>Micheline Misrahi, France</b>	
11:05-11:25	Diminished ovarian reserve: Is genetics an Innovative tool to predict fertility? <b>Micheline Misrahi, France</b>	
11:25-11:50	Why the new FIGO classification for ovulatory dysfunction, and possible implications for POI diagnosis <b>Bart Fauser, Netherlands</b>	
11:50-12:00	Short break	
12:00-13:30	<b>INNOVATION IN REPRODUCTIVE TECHNOLOGY - SHOWCASE SESSION FOR START-UPS</b>	HALL B (Grand Klimt Hall 1)
Chairpersons	<b>Rita Vassena, Spain</b> <b>Cesar Diaz-Garcia, UK</b>	
12:00-12:20	Hypersperm, a novel approach to improve embryo development in ART <b>Mariano Buffone, Spain</b>	
12:20-12:40	Research-based data collection and decision support system for COS <b>Olga Chabr Grillová, Czech Republic</b>	
12:40-13:00	Preimplantation DNA Methylation Screening (PIMS): Potential biomarker in ART <b>Ida Dimitra Christopikou, Greece</b>	
13:00-13:20	A deep learning model (DLM) to predict blastocyst development from metaphase II (MII) oocytes <b>Isabel Puerta Vega, Canada</b>	
13:20-13:30	Discussion	
13:30-14:30	Lunch break, visit the exhibition and e-poster viewing 13:40-13:52: MODERATED E-POSTER SESSION 3 (screen 1) - GYNECOLOGICAL ONCOLOGY & GYNECOLOGY (Exhibition Hall) 13:40 – 14:16: MODERATED E-POSTER SESSION 4 (screen 2) - FETOMATERNAL MEDICINE (Exhibition Hall)	All exhibition areas
13:40-14:22	<b>ORAL PRESENTATIONS 9 - FETOMATERNAL MEDICINE</b>	HALL B (Grand Klimt Hall 1)
Chairperson	<b>Michael Sinosich, Australia</b>	
13:40-13:47	RELIABILITIES OF THE SONOGRAPHIC EVALUATION FOR CERVICAL LENGTH AND ELASTOGRAPHY WITH PELVIC PARAMETERS IN TERM PREGNANCY BY VARIOUS LEVELS OF EXPERIENCED OPERATORS <b>Noppasin Khwankaew, Thailand</b>	
13:47-13:54	MATERNAL MORTALITY DUE TO DENGUE FEVER COMPLICATING TETRALOGY OF FALLOT - A RARE CASE REPORT <b>Kevin Dominique Tjandraprawira, Indonesia</b>	



13:54-14:01	TELE-MEDICINE VERSUS TRADITIONAL FOLLOW-UP FOR EVALUATION OF MATERNAL AND FETAL OUTCOMES IN GESTATIONAL DIABETES MELLITUS <b>Ebtisam Alofi, Saudi Arabia</b>
14:01-14:08	PREVALENCE OF COMPLETE COURSE OF DEXAMETHASONE IN PREGNANT WOMEN WITH LATE PRETERM DELIVERY IN SIRIRAJ HOSPITAL <b>Piyamon Srisakulpanich, Thailand</b>
14:08-14:15	GLUCOSE VALUE LOWER THAN 5 MMOL/L AFTER A GLUCOSE LOADING TEST IS ASSOCIATED WITH ADVERSE PREGNANCY OUTCOMES RELATED TO GESTATIONAL DIABETES: SYSTEMATIC REVIEW AND META ANALYSIS <b>Muhammad Pradhiki Mahindra, UK</b>
14:15-14:22	PHEOCHROMOCYTOMA IN PREGNANCY: A DIAGNOSIS NOT TO BE MISSED <b>Sidonie Monteiro, Portugal</b>
14:30-16:30	<b>ORAL PRESENTATIONS 12 - FETOMATERNAL MEDICINE; OTHER</b> <span style="float: right;">HALL B (Grand Klimt Hall 1)</span>
Chairpersons	<b>Dana Muin, Austria</b> <b>Natascha Berger, Austria</b>
<b>FETOMATERNAL MEDICINE</b>	
14:30-14:37	A CASE REPORT OF COMPLETE HYDATIDIFORM MOLE COEXISTING WITH NORMAL FETUS <b>Kristina Angela Ibon, Philippines (virtual)</b>
14:37-14:44	THE EFFECT OF PARITY ON DIFFERENT PREGNANCY AND NEONATAL ADVERSE OUTCOMES AMONG WOMEN WITH PRE-GESTATIONAL DIABETES <b>Nadia Mordenfeld, Israel</b>
14:44-14:51	THE EFFECT OF ACUPRESSURE AND HALOGEN LIGHT STIMULATION ON NONSTRESS TESTING AND ANTENATAL ANXIETY: A RANDOMIZED CONTROLLED TRIAL <b>Yasemin Sokmen, Turkiye (virtual)</b>
14:51-14:58	A REPORT FOR A CASE OF UTERINE ARTERIOVENOUS MALFORMATION CO-EXISTING WITH A PLACENTA ACCRETA IN A 30-YEAR-OLD POST CURETTAGE FOR MISSED MISCARRIAGE <b>Mark John Arnel Mascarinas, Philippines</b>
14:58-15:05	ANALYSIS OF MANAGEMENT OF RAISED PULSATILITY INDEX (PI) IN PREGNANCY <b>Kimberly Lim Xinyi, UK</b>
<b>OTHER</b>	
15:05-15:12	SACRAL MAGNETIC STIMULATION USING INTERMITTENT THETA BURST STIMULATION IN ANESTHETIZED RATS: A NOVEL THERAPEUTIC APPROACH TO TREAT OVERACTIVE BLADDER <b>Nurida Khasanah, Taiwan</b>
15:12-15:19	PREDICTORS OF SURGICAL SITE INFECTION AMONG WOMEN FOLLOWING CESAREAN DELIVERY: A HOSPITAL-BASED CASE-CONTROL STUDY <b>Patricia Ferreira, Portugal (virtual)</b>
15:19-15:26	KNOWLEDGE, ATTITUDE AND PRACTICES OF REPRODUCTIVE AGED FILIPINO WOMEN ON FAMILY PLANNING AND SEXUAL HEALTH DURING THE COVID-19 PANDEMIC <b>Priscilla Alameda, Philippines</b>
15:26-15:33	ISOLATED FALLOPIAN TUBE TORSION IN AN EARLY ADOLESCENT: A CASE REPORT <b>Princess Bianca Palabrica, Philippines (virtual)</b>
15:33-15:40	ORGANISATION OF FOLLOW-UP AND REFERRAL OF PREGNANCY WOMEN IN PRIMARY CARE: PERCEPTION OF GYNAECOLOGISTS AND MIDWIVES <b>Elena Costa, Belgium</b>
15:40-15:47	KNOWLEDGE AND ATTITUDES OF HEALTH DISCIPLINE STUDENTS TOWARD FAMILY PLANNING <b>Pinar Kara, Turkiye</b>
15:47-15:54	COEXISTING PATHOLOGY OF UNRUPTURED ECTOPIC PREGNANCY WITH CONCURRENT IPSILATERAL DERMOID CYST: A RARE OCCURRENCE <b>Anne Nicole Fuentes, Philippines</b>
15:54-16:01	UNINTENDED AND ECTOPIC PREGNANCY IN WOMAN WITH IUD TRANSLOCATION WITH HISTORY OF TWO TIMES PREVIOUS CAESAREAN SECTION AND HISTORY OF SPONTANEOUS ABORTION: CASE REPORT <b>Dina Marlina, Indonesia</b>
16:01-16:08	CLINICAL CHARACTERISTICS AND OUTCOMES OF ELECTIVE GYNECOLOGIC CASES USING MODIFIED MEDICALLY NECESSARY, TIME SENSITIVE (MENTS) SCORING SYSTEM IN PHILIPPINE GENERAL HOSPITAL DURING THE COVID-19 PANDEMIC <b>Divine Macanip, Philippines</b>
16:08-16:15	REGENERATIVE THERAPY IN SEVERE ENDOMETRIOSIS. A CASE REPORT <b>Wendy Belen Castro Hernandez, Mexico</b>
16:15-16:22	EFFICACY AND SAFETY OF THE GALACTAGOGUES, DOMPERIDONE AND METOCLOPRAMIDE, IN BREASTFEEDING: A SYSTEMATIC REVIEW AND META-ANALYSIS <b>Charmaine Gem Dela Merced, Philippines</b>
16:22-16:29	METABOLIC PHENOTYPING IDENTIFIES DISTINCT SYSTEMIC AND FOLLICULAR BILE ACID PROFILES THAT DEPEND ON BODY FAT CONTENT <b>Natascha Berger, Austria</b>
16:29-16:36	PREDICTION OF THE COURSE OF THE FIRST TRIMESTER OF PREGNANCY AT DIFFERENT LEVELS OF HLA CLASS I (G, E, C) IN THE BLOOD. <b>Margarita Shengelia, Russia</b>



**HALL C - Gynecology** (Grand Park Hall 2)

08:30-10:00	<b>ENDOMETRIOSIS AND INFERTILITY</b>	Live stream from Hall B
Chairpersons	<b>René Wenzl, Austria</b> <b>Heinrich Husslein, Austria</b>	
08:30-08:50	Future biomarkers of endometriosis <b>Arne Vanhie, Belgium</b>	
08:50-09:15	Is endometriosis associated with ovarian cancer and argument for surgery in reproductive age <b>Johnny Younis, Israel</b>	
09:15-09:35	Advanced imaging of endometriosis and adenomyosis <b>Heinrich Husslein, Austria</b>	
09:35-10:00	How to preserve fertility in case of endometriosis? <b>Julian Marschalek, Austria</b>	
10:00-10:20	Coffee break, visit the exhibition and e-poster viewing	
10:20-10:50	<b>ESTETROL</b>	HALL C (Grand Park Hall 2)
Chairpersons	<b>Alessandra Graziottin, Italy</b> <b>Jessica Ybanez-Morano, USA</b>	
10:20-10:50	The history of the fetal estrogen estetrol for human use <b>Herjan Coelingh Bennink, Netherlands</b>	
10:50-11:50	<b>SLS - SOCIETY OF LAPAROSCOPIC &amp; ROBOTIC SURGEONS</b>	HALL C (Grand Park Hall 2)
Chairpersons	<b>Alessandra Graziottin, Italy</b> <b>Jessica Ybanez-Morano, USA</b>	
10:50-11:10	Adhesion prevention in gynecologic surgery <b>Mona Orady, USA</b>	
11:10-11:30	Minimally invasive surgery during pregnancy <b>Jessica Ybanez-Morano, USA</b>	
11:30-11:50	Parametrial endometriosis: Robotic approach <b>Thiers Soares Raymundo, Brazil</b>	
11:50-12:00	Short break	
12:00-13:30	<b>HYSTEROSCOPY – A GCH SESSION</b>	HALL C (Grand Park Hall 2)
Chairpersons	<b>Justin Clark, UK</b> <b>Andrea Tinelli, Italy</b>	
12:00-12:20	Intrauterine blind procedures: The beginning of the end? <b>Luis Alonso Pacheco, Spain</b>	
12:20-12:40	Endometrial adenocarcinoma and intrauterine surgery: When and how <b>Andrea Tinelli, Italy</b>	
12:40-13:00	Pregnancy related hysteroscopy <b>Sergio Haimovich, Spain/Israel</b>	
13:00-13:20	Pain management in office procedures <b>Justin Clark, UK</b>	
13:20-13:30	Discussion	
13:30-14:30	Lunch break, visit the exhibition and e-poster viewing 13:40-13:52: MODERATED E-POSTER SESSION 3 (screen 1) - GYNECOLOGICAL ONCOLOGY & GYNECOLOGY (Exhibition Hall) 13:40 – 14:16: MODERATED E-POSTER SESSION 4 (screen 2) - FETOMATERNAL MEDICINE (Exhibition Hall)	All exhibition areas
14:30-16:30	<b>HRT AND CANCER</b>	HALL C (Grand Park Hall 2)
Capsule	Demystification of the relationship between HRT and cancer	
Chairpersons	<b>Mark Brincat, Malta</b> <b>Santiago Palacios, Spain</b>	
14:30-15:00	Can HRT and treatment for menopause be individualized to reduce the incidence of breast cancer? <b>Mark Brincat, Malta</b>	
15:00-15:30	HRT in cancer survivors <b>Pierluigi Benedetti Panici, Italy</b>	
15:30-16:00	Postmenopausal hormone treatment and the risk for malignancies <b>Johannes Ott, Austria</b>	
16:00-16:30	Fertility-sparing management in recurrent gynecological cancer <b>Pierluigi Benedetti Panici, Italy</b>	



## HALL D - Fetomaternal Medicine (Grand Park Hall 3)

08:30-10:00	<b>PRETERM LABOR</b>	HALL D (Grand Park Hall 3)
Chairperson	<b>Amir Aviram, Canada</b>	
08:30-09:00	<b>Debate: First pregnancy 20 weeks. Asymptomatic CL of 18 mm</b>	
08:30	To Cerclage: <b>Patrick Stelzl, Austria</b>	
08:40	In favor of progesterone: <b>Hanns Helmer, Austria</b>	
08:50	Discussion	
09:00-09:30	<b>Debate: Progesterone for arrested preterm labor?</b>	
09:00	Pro: <b>Howard Berger, Canada</b>	
09:10	Con: <b>Eran Ashwal, Canada</b>	
09:20	Discussion	
09:30-09:45	Lack of evidence of steroids in twins <b>Gerard Visser, Netherlands (virtual)</b>	
09:45-10:00	Should we administer steroids after 34 weeks of gestation? <b>Hanns Helmer, Austria</b>	
10:00-10:20	Coffee break, visit the exhibition and e-poster viewing All exhibition areas	
10:20-11:50	<b>HOT CONTROVERSIES ON CLINICAL ASPECTS</b>	HALL D (Grand Park Hall 3)
Chairperson	<b>Gerard Visser, Netherlands</b>	
Panelists	<b>Amir Aviram, Canada</b> <b>Hanns Helmer, Austria</b> <b>Johanna Tiechl, Austria</b>	
	<ol style="list-style-type: none"> <li>1. Obese women should be advocated to lose weight in pregnancy</li> <li>2. Intrapartum management of the obese patient- Important pitfalls</li> <li>3. When is the appropriate time for delivery in PPRM?</li> <li>4. Should we offer amniocentesis for all? And what about Exome?</li> <li>5. What is the recommended mode of delivery after 3rd degree perineal tear?</li> <li>6. Who should be treated with aspirin in pregnancy?</li> <li>7. What is the appropriate time to deliver accreta?</li> </ol>	
11:50-12:00	Short break	
12:00-13:30	<b>PREVENTION OF MEDICAL COMPLICATIONS IN PREGNANCY</b>	HALL D (Grand Park Hall 3)
Chairpersons	<b>Dana Muin, Austria</b> <b>Hans Duvekot, Netherlands</b>	
12:00-12:20	Placental disorders and diagnosis <b>Michael Sinosich, Australia</b>	
12:20-12:40	When to perform an elective cesarean section in cases of placenta previa, PAS or other high-risk pregnancies? <b>Hans Duvekot, Netherlands</b>	
12:40-13:30	Panelists: <b>Hans Duvekot, Netherlands</b> <b>Dana Muin, Austria</b> <b>Michael Sinosich, Australia</b> <b>Gerard Visser, Netherlands</b>	
	Panel Discussion: <ol style="list-style-type: none"> <li>1. Can we prevent IUGR?</li> <li>2. Can we prevent GDM?</li> <li>3. Can we prevent T2DM in GDM patients?</li> <li>4. Can we prevent Uterine rupture in TOLAC?</li> <li>5. Can we prevent PPH?</li> <li>6. Can we prevent Shoulder Dystocia?</li> </ol>	
13:30-14:30	Lunch break, visit the exhibition and e-poster viewing 13:40-13:52: MODERATED E-POSTER SESSION 3 (screen 1) - GYNECOLOGICAL ONCOLOGY & GYNECOLOGY (Exhibition Hall) 13:40 - 14:16: MODERATED E-POSTER SESSION 4 (screen 2) - FETOMATERNAL MEDICINE (Exhibition Hall)	
13:30-14:22	<b>ORAL PRESENTATIONS 10 - OTHER</b>	HALL D (Grand Park Hall 3)
Chairpersons	<b>Hanns Helmer, Austria</b> <b>Klara Rosta, Austria</b>	
13:40-13:47	ENHANCING PUBLIC HEALTH: CHALLENGES IN PROMOTING TRIPLE ELIMINATION PROGRAM AND SYPHILIS TREATMENT ACCESSIBILITY IN INDONESIAN PRIMARY HEALTHCARE FACILITY FOR PREGNANT WOMEN - A CASE REPORT <b>Alvin Wijaya, Indonesia</b>	



13:47-13:54	RECURRENT PREGNANCY LOSS IN COMPLETE SEPTATE UTERUS WITH DUPLICATED CERVIX AND LONGITUDINAL VAGINAL SEPTUM: A CASE REPORT AND REVIEW OF THE LITERATURE <b>Beatriz Eusebio, Philippines</b>	
13:54-14:01	ISTHMOCELE DURING PREGNANCY - TREAT IT OR LEAVE IT? <b>Laurentiu Pirtea, Romania</b>	
14:01-14:08	(DIS)HOPE IN WOMEN DIAGNOSED WITH PELVIC CONGESTION SYNDROME (PCS) <b>Maria Gabriela Pinto, Brazil</b>	
14:08-14:15	EARLY SECOND TRIMESTER CESAREAN SCAR ECTOPIC PREGNANCY: UTERINE RUPTURE AFTER ASPIRATION <b>Patricia Ferreira, Portugal (virtual)</b>	
14:15-14:22	CHALLENGES OF HUMAN REPRODUCTIVE MEDICINE IN A CHANGING EUROPE: AN INNOVATIVE PROFESSIONAL CURRICULUM FOR MEDICAL EDUCATION: COHRICE PROJECT <b>Klara Rosta, Austria</b>	
14:30-16:30	<b>PROGESTERONE &amp; PREGNANCY: NEW INDICATIONS A PREIS SCHOOL ACADEMY SESSION</b>	HALL D ( <i>Grand Park Hall 3</i> )
Chairperson	<b>Gian Carlo Di Renzo, Italy</b>	
14:30-14:40	Introduction <b>Gian Carlo Di Renzo, Italy</b>	
14:40-15:05	A narrative story of progesterone and progestins <b>Paul Piette, Belgium</b>	
15:05-15:25	First trimester biomarkers and prevention of obstetrical syndrome <b>Valentina Tsibizova, Italy</b>	
15:25- 15:50	New indications for progesterone supplementation in pregnancy: Miscarriage and hypertensive disorders <b>Pedro Melo, UK</b>	
15:50-16:10	Prevention of preterm birth <b>Gian Carlo Di Renzo, Italy</b>	
16:10-16:25	Q & A	
16:25-16:30	Conclusions <b>Gian Carlo Di Renzo, Italy</b>	

**HALL E - Oral Presentations (Park Suite 1)**

08:30-10:00	<b>ORAL PRESENTATIONS 6 - HPV; GYNECOLOGICAL ONCOLOGY; DIAGNOSTIC PROCEDURES</b>	HALL E ( <i>Park Suite 1</i> )
Chairpersons	<b>Alessandra Graziottin, Italy</b> <b>Igor Jeremic, Serbia</b>	
<b>HPV</b>		
08:30-08:37	DISCREPANCY OF CYTOHISTOLOGICAL FINDINGS IN HPV-POSITIVE PREMENOPAUSAL WOMEN: ARE THERE ANY RISK FACTORS INVOLVED? <b>Ana Beatriz De Almeida, Portugal (virtual)</b>	
08:37-08:44	GENITAL WARTS IN PREGNANCY-DIAGNOSIS AND TREATMENT THE MOST COMMON CAUSE OF LARYNGEAL PAILLOMATOSIS IN CHILDREN UNDER 10 YEARS OLD <b>Igor Jeremic, Serbia</b>	
08:44-08:51	CERVICAL CANCER SCREENING: IMPACT OF THE RESULT ON WOMEN'S SEXUAL DESIRE AND SATISFACTION <b>Sidonie Monteiro, Portugal</b>	
08:51-08:58	COMPARISON OF CHATGPT AND PERPLEXITY'S RESPONSES ON HPV INFECTION AND HPV VACCINE <b>Bengu Mutlu Sutcuoglu, Turkiye</b>	
<b>GYNECOLOGICAL ONCOLOGY</b>		
08:58-09:05	ACCEPTANCE, TOLERANCE AND COMPLIANCE OF WEEKLY PACLITAXEL THERAPY FOR EPITHELIAL OVARIAN CANCER <b>Aparna Jha, India</b>	
09:05-09:12	A RANDOMIZED TRIAL COMPARING SURGICAL SITE INFILTRATION WITH LIPOSOMAL BUPIVACAINE TO THORACIC EPIDURAL FOR PATIENTS UNDERGOING LAPAROTOMY IN A GYNECOLOGIC ONCOLOGY SERVICE <b>Payam Katebi Kashi, USA</b>	
09:12-09:19	A RARE CASE, A GOOD RESPONSE OF CHEMORADIOTHERAPY ON TEENAGE LEIOMYOSARCOMA : CASE REPORT <b>Dina Marlina, Indonesia</b>	
09:19-09:26	PREVALENCE OF ADJACENT ORGAN INJURIES IN CESAREAN HYSTERECTOMY AMONG WOMEN HAVING PLACENTA ACCRETA SPECTRUM DISORDER AT A UNIVERSITY HOSPITAL IN SOUTHERN THAILAND <b>Thitaporn Sae-Sue, Thailand</b>	
09:26-09:33	PRETREATMENT SYSTEMIC IMMUNE-INFLAMMATORY INDEX FOR A PROGNOSTIC IMPACT IN PATIENTS WITH LOCALLY ADVANCED CERVICAL CANCER TREATED WITH CONCURRENT CHEMORADIOTHERAPY <b>Kunfa Sompongawakit, Thailand</b>	
09:33-09:40	IDENTIFICATION OF POLQ AS A KEY GENE IN CERVICAL CANCER PROGRESSION USING INTEGRATED BIOINFORMATICS ANALYSIS AND EXPERIMENTAL VALIDATION <b>Yuqin Zang, China</b>	





09:40-09:47	THYROID HORMONE RECEPTOR B KNOCKDOWN REDUCES SUPPRESSION OF PROGESTINS BY ACTIVATING THE MTOR PATHWAY IN ENDOMETRIAL CANCER CELLS <b>Yan Zhu, China</b>	
<b>DIAGNOSTIC PROCEDURES</b>		
09:47-09:54	PUBIC SYMPHYSIS DIASTASIS: DIAGNOSIS AND MANAGEMENT <b>Frederick Eruo, USA</b>	
09:54-10:01	DEVELOPING A PREDICTIVE MODEL FOR MINIMAL-MILD ENDOMETRIOSIS AS A CLINICAL SCREENING TOOL IN INFERTILE WOMEN: UTEROSACRAL TENDERNESS AS A KEY PREDICTOR <b>Jie Zhang, China</b>	
10:00-10:20	Coffee break, visit the exhibition and e-poster viewing	All exhibition areas
10:20-12:00	<b>ORAL PRESENTATIONS 7 - GYNECOLOGY</b>	HALL E (Park Suite 1)
Chairpersons	<b>Attila Vereczkey, Hungary</b> <b>Julian Marschalek, Austria</b>	
10:20-10:27	UTERINE FIBROID IN A 16-YEAR-OLD ADOLESCENT MANAGED WITH A FERTILITY-SPARING APPROACH: A CASE REPORT <b>Polina Nikiforova, Russia</b>	
10:27-10:34	UTERINE TORSION AND PRESERVED REPRODUCTIVE FUNCTION: EXTREMELY RARE CASE REPORT <b>Polina Nikiforova, Russia</b>	
10:34-10:41	SUCCESSFUL PULL-THROUGH VAGINOPLASTY FOR DISTAL VAGINAL AGENESIS: A CASE REPORT <b>Mohanna Moya, Philippines</b>	
10:41-10:48	DISTAL VAGINAL AGENESIS PRESENTING WITH FECAL RETENTION FROM AN ABDOMINOPELVIC MASS <b>Patrick Jose Padilla, Philippines</b>	
10:48-10:55	PAIN, GASTROINTESTINAL FUNCTION AND FERTILITY OUTCOMES OF MODIFIED NERVE-VESSEL SPARING AND FULL THICKNESS DISCOID RESECTION FOR DEEP COLORECTAL ENDOMETRIOSIS – A PROSPECTIVE COHORT STUDY <b>Daria Pashkunova, Austria</b>	
10:55-11:02	THE EFFECTS OF GINGER FOR PREVENTION POST-OPERATIVE ILEUS AFTER HYSTERECTOMY: A RANDOMIZED CONTROLLED TRIAL <b>Preeyanuntar Pongsupanimit, Thailand</b>	
11:02-11:09	FIRST TRIMESTER PLACENTA ACCRETA WITH MYOMA IN A NULLIPARA: A CASE REPORT <b>Catherine Grace Reyes, Philippines</b>	
11:09-11:16	PRESENCE OF ABNORMAL UTERINE BLEEDING AND RECURRENT ENDOMETRIOSIS ASSOCIATED WITH TIME TO SEEK MEDICAL ATTENTION IN ENDOMETRIOSIS PATIENTS <b>Rilla Saeliputri, Indonesia</b>	
11:16-11:23	CHARACTERISTICS OF TOTAL LAPAROSCOPIC HYSTERECTOMY AMONG WOMEN WITH OR WITHOUT PREVIOUS ABDOMINAL SURGERY: RETROSPECTIVE ANALYSIS <b>Susana Saraivav, Portugal (virtual)</b>	
11:23-11:30	CONCERNS ABOUT FERTILITY, SOCIAL APPEARANCE, AND RELATIONSHIPS IN YOUNG ADULTS WITH POLYCYSTIC OVARY SYNDROME <b>Esra Sari, Turkiye</b>	
11:30-11:37	CAN LASER ALLEVIATE THE MANIFESTATIONS OF SJOGREN'S SYNDROME IN GYNECOLOGY – PILOT STUDY PRELIMINARY DATA <b>Aleksandra Mikic Novakov, Slovenia</b>	
11:37-11:44	OBSTETRIC OUTCOMES AFTER CERVICAL CONIZATION: A SINGLE-CENTER DESCRIPTIVE REVIEW <b>Gisela Almeida, Portugal</b>	
11:44-11:51	SEXUAL QUALITY OF LIFE AND MARITAL ADJUSTMENT IN WOMEN WITH ENDOMETRIOSIS: A CASE-CONTROL STUDY <b>Hamide Arslan Tarus, Turkiye</b>	
11:51-11:58	SEXUAL SATISFACTION LEVELS OF WOMEN WITH OVERACTIVE BLADDER: SYSTEMATIC REVIEW AND RECOMMENDATIONS <b>Ruveyda Olmez Yalazi, Turkiye</b>	
12:00-13:31	<b>ORAL PRESENTATIONS 8 – ART/IVF/INFERTILITY</b>	HALL E (Park Suite 1)
Chairpersons	<b>Johannes Ott, Austria</b> <b>Luís Ferreira Vicente, Portugal</b>	
12:00-12:07	ATOSIBAN THE DAY OF EMBRYO TRANSFER MAY IMPROVE SUCCESS RATE IN PATIENTS OVER 1.5 UTERINE CONTRACTIONS PER MINUTE <b>Belen Moliner, Spain</b>	
12:07-12:14	IMPACT OF ENDOMETRIOSIS ON UTERINE PERISTALSIS AND SERUM CONCENTRATIONS OF PROGESTERONE IN PATIENTS WITH RECURRENT IMPLANTATION FAILURE UNDERGOING FROZEN-THAWED EMBRYO TRANSFER <b>Belen Moliner, Spain</b>	
12:14-12:21	EXPLORING THE LANDSCAPE OF ALTRUISTIC SURROGACY IN BRAZIL: AN IN-DEPTH ANALYSIS OF PARTICIPANT DEMOGRAPHICS OVER 8 YEARS <b>Marcelo Montenegro, Brazil</b>	
12:21-12:28	MATERNAL AND PATERNAL ATTACHMENT AFTER IVF-ET TREATMENT: A CROSS-SECTIONAL STUDY <b>Evsen Nazik, Turkiye</b>	
12:28-12:35	GEOGRAPHIC DIFFERENCES IN SEMEN QUALITY OF SPANISH INFERTILE PATIENTS <b>Rocio Nunez Calonge, Spain</b>	



12:35-12:42	NANOPORE SEQUENCING TECHNOLOGY IN REPRODUCTIVE GENETICS – CURRENT APPLICATIONS AND FUTURE PERSPECTIVES <b>Anna Oberle, Austria</b>	
12:42-12:49	DETERMINATION OF MEN'S PERCEIVED SOCIAL SUPPORT AND STYLES OF COPING WITH STRESS IN COUPLES RECEIVING INFERTILITY TREATMENT <b>Funda Ozdemir, Turkiye</b>	
12:49-12:56	VOLATILOMICS AS AN EMERGING STRATEGY TO DETERMINE POTENTIAL BIOMARKERS OF FEMALE INFERTILITY: A PILOT STUDY <b>Ana Ramalinho, Portugal</b>	
12:56-13:03	DOES DUAL TRIGGER IMPROVES REPRODUCTIVE OUTCOMES IN VITRO FERTILIZATION CYCLES? <b>Isabel Saavedra Rocha, Portugal</b>	
13:03-13:10	POLYCYSTIC OVARIAN SYNDROME: WHAT TO EXPECT FROM IVF? <b>Alicia Sarandeses Vazquez, Spain</b>	
13:10-13:17	THE IMPACT OF ENDOMETRIOSIS IN IN VITRO FERTILIZATION OUTCOMES <b>Ana Beatriz De Almeida, Portugal (virtual)</b>	
13:17-13:24	TREATMENT AND REHABILITATION OF PATIENTS OF REPRODUCTIVE AGE WITH PROLIFERATIVE UTERINE FIBROIDS <b>Mariami Kaviladze, Russia</b>	
13:24-13:31	MICRO-MAGNETIC RESONANCE SPECTROSCOPY OF INDIVIDUAL MAMMALIAN EMBRYOS: A CUTTING-EDGE, NON-INVASIVE TOOL FOR IDENTIFYING THE MOST VIABLE EMBRYOS <b>Conley Gaurasundar, Switzerland</b>	
13:30-14:30	Lunch break, visit the exhibition and e-poster viewing 13:40-13:52: MODERATED E-POSTER SESSION 3 (screen 1) - GYNECOLOGICAL ONCOLOGY & GYNECOLOGY (Exhibition Hall) 13:40 – 14:16: MODERATED E-POSTER SESSION 4 (screen 2) - FETOMATERNAL MEDICINE (Exhibition Hall)	All exhibition areas
13:40-14:22	<b>ORAL PRESENTATIONS 11 - FETOMATERNAL MEDICINE; GYNECOLOGY</b>	HALL E (Park Suite 1)
Chairpersons	<b>Gian Carlo Di Renzo, Italy</b> <b>Frederick Eruo, USA</b>	
<b>FETOMATERNAL MEDICINE</b>		
13:40-13:47	CHALLENGES IN DETERMINING CHORIONICITY AND DIAGNOSING SELECTIVE FETAL GROWTH RESTRICTION IN MULTIFETAL PREGNANCIES WITH SUSPECTED TWIN-TWIN TRANSFUSION SYNDROME: A CASE REPORT <b>Amadea Ivana Hartanto, Indonesia</b>	
13:47-13:54	CORONAVIRUS IN PREGNANCY- DOMAGOJ KRPINA, GYN&OBS, CROATIA <b>Domagoj Krpina, Croatia</b>	
13:54-14:01	DIAGNOSTIC ACCURACY OF ANGIOGENIC MARKERS IN PREECLAMPSIA DIAGNOSIS – A REALITY IN A TERTIARY CENTRE <b>Carolina Moura, Portugal (virtual)</b>	
14:01-14:08	WAGR SYNDROME AND PREGNANCY ULTRASOUND PRENATAL DIAGNOSIS CASE REPORT <b>Sladjana Malic Voncina, Slovenia</b>	
14:08-14:15	864 PERIPARTUM PUBIC SYMPHYSIS DIASTASIS: DIAGNOSIS AND MANAGEMENT IN 2023 <b>Frederick Eruo, USA</b>	
<b>GYNECOLOGY</b>		
14:15-14:22	EARLY RECOGNITION AND MINIMALLY INVASIVE MANAGEMENT OF URETERAL INJURY AFTER TOTAL HYSTERECTOMY <b>Huang Jimiao, China</b>	
14:30-16:30	<b>ORAL PRESENTATIONS 13 - ART/IVF/INFERTILITY; DIAGNOSTIC PROCEDURES; GYNECOLOGY</b>	HALL E (Park Suite 1)
Chairpersons	<b>Jessica Ybanez-Morano, USA</b> <b>Emina Ejubovic, Bosnia and Herzegovina</b>	
<b>ART/IVF/INFERTILITY</b>		
14:30-14:37	MATERNAL FERTILITY STATUS AND INFANT OUTCOMES: THE EREBOUNI MEDICAL CENTER STUDY OF ASSISTED REPRODUCTIVE TECHNOLOGY <b>Hasmik Sedrakyan, Armenia</b>	
14:37-14:44	ASSOCIATION OG GENETIC MARKERS WITH INFERTILITY IN WOMEN UNDERGOING BARIATRIC SURGERY <b>Charalampos Voros, Greece</b>	
14:44-14:51	FROZEN EMBRYO TRANSFER AND ANTICOAGULANT IMPROVE IN VITRO FERTILISATION OUTCOMES IN ENDOMETRIOSIS WITH RECURRENT PREGNANCY LOSS – ORIGINAL RESEARCH <b>Kevin Dominique Tjandraprawira, Indonesia</b>	
14:51-14:58	DOES PROLONGED CRYOPRESERVATION AFFECT LIVE BIRTH RATES IN ELECTIVE FREEZE ALL CYCLES? <b>Amita Subramanian, India</b>	
14:58-15:05	PTIP IS REQUIRED FOR MALE MEIOSIS <b>Guo-Zhang Zhu, USA</b>	
15:05-15:12	In Person CHRONIC ENDOMETRITIS IN PATIENTS WITH RECURRENT IMPLANTATION FAILURE: DIAGNOSIS AND REPRODUCTIVE OUTCOMES FROM A PROSPECTIVE COHORT <b>Ana Vegas, Spain</b>	



15:12-15:19	IMPACT OF OOCYTE AGE ON EMBRYO DEVELOPMENT AND QUALITY: INSIGHTS FOR FERTILITY TREATMENTS <b>Fernanda Souza Peruzzato, Brazil</b>
15:19-15:26	HUMAN ERROR MEASUREMENT AND HUMAN ERROR REDUCTION WITH ELECTRONIC WITNESSING SYSTEM (EWS) <b>Daria Hudkova, Slovakia</b>
15:26-15:33	SUPPLEMENTATION WITH A 3.6:1 MYO-INOSITOL TO D-CHIRO-INOSITOL RATIO FOR PATIENTS WITH PCOS TO IMPROVE OOCYTE QUALITY DURING OVARIAN STIMULATION <b>Virginia Calvente, Spain</b>
15:33-15:40	HYPERSPERM, A NOVEL SPERM PREPARATION METHOD FOR HUMAN IN VITRO FERTILIZATION (IVF), IMPROVES EMBRYO DEVELOPMENT IN A PROSPECTIVE SIBLING OOCYTE PILOT STUDY <b>Mariano Buffone, Spain</b>
<b>DIAGNOSTIC PROCEDURES</b>	
15:40-15:47	THE ANALYSIS OF MICRONUTRIENT STATUS OF PREGNANT WOMEN WITH CONGENITAL MALFORMATIONS OF THE FETUS <b>Margarita Shengeliia, Russia</b>
<b>GYNECOLOGY</b>	
15:47-15:54	THE EFFECT OF POSTPARTUM GENITAL SELF-IMAGE AND BODY PERCEPTION DURING SEXUAL INTERCOURSE ON SEXUAL DYSFUNCTION: A MIXED METHOD STUDY <b>Vesile Kocak, Turkiye</b>
15:54-16:01	Cancelled
16:01-16:08	THE EVALUATION OF EFFICACY AND SAFETY OF APPLICATION OF ULIPRISTAL ACETATE IN THE TREATMENT OF PATIENTS WITH VARIOUS TYPES OF UTERINE FIBROIDS <b>Mariami Kaviladze, Russia</b>
16:08-16:15	APPLICATION OF 3D-TUMOR SPHEROIDS IN DRUG DISCOVERY <b>Mariami Kaviladze, Russia</b>
16:15-16:22	PERCUTANEOUS TRANSCATHETER UTERINE ARTERY EMBOLIZATION: A NEW APPROACH TO TREAT UTERINE FIBROIDS <b>Mariami Kaviladze, Russia</b>
16:22-16:29	NON-PUERPERAL UTERINE INVERSION SECONDARY TO PROLAPSED ADENOMYOMA <b>Hanz Deihl Carmona, Philippines</b>

## MODERATED E-POSTER SESSIONS

### Friday, November 24

10:05-10:15	<b>MODERATED E-POSTER SESSION 1 - ART/IVF/INFERTILITY</b>	Exhibition Hall
Chairperson	<b>Edgardo Somgaliana, Italy</b>	
10:05-10:08	TREATMENT WITH MYO-INOSITOL TO D-CHIRO INOSITOL 3.6:1 RATIO-BASED FOOF SUPPLEMENT IN WOMEN WITH HISTORY OF ASSISTED REPRODUCTIVE TECHNIQUES FAILURES: A SERIES OF CASE REPORTS <b>Belen Hernandez, Spain</b>	
10:08-10:11	COMPARISON OF CONTROLLED OVARIAN STIMULATION IN DIFFERENT PHASES OF MENSTRUAL CYCLE AMONG OOCYTE DONORS <b>Ludmila Barbakadze, Georgia</b>	
10:11-10:14	POST-THAW VIABILITY OF CANINE FOLLICLES CRYOPRESERVED WITH DIFFERENT METHODS <b>Bence Somoskoi, Hungary</b>	
16:35-16:44	<b>MODERATED E-POSTER SESSION 2 - OTHER</b>	Exhibition Hall
Chairperson	<b>Johannes Ott, Austria</b>	
16:35-16:38	PREVALENCE AND RISK FACTORS OF PERIPARTUM DEPRESSION AMONG WOMEN IN THE PRENATAL AND POSTNATAL PERIOD IN A TERTIARY HOSPITAL <b>April Joy Gauce, Philippines</b>	
16:38-16:41	MENSTRUAL CYCLE MANAGEMENT AND PERIOD TRACKER APPLICATION USAGE IN MILLENIALS AND GENERATION Z-CASE OF SOUTH KOREA <b>Minji Hong, South Korea</b>	
16:41-16:44	SWITCHING ANTIPSYCHOTICS TO BLONANSERIN IN PATIENT WITH SCHIZOPHRENIA: AN OPEN-LABEL, PROSPECTIVE, MULTICENTER STUDY <b>Bo-Hyun Yoon, South Korea</b>	



## Saturday, November 25

13:40-13:52	<b>MODERATED E-POSTER SESSION 3 (screen 1) - GYNECOLOGICAL ONCOLOGY &amp; GYNECOLOGY</b>	Exhibition Hall
Chairperson	<b>Alessandra Graziottin</b> , <i>Italy</i>	
13:40-13:43	ITS HAIRSTORY: A RARE CASE OF OVARIAN STEROID CELL TUMOR (SCT) IN A YOUNG FILIPINO FEMALE: A CASE REPORT <b>Innah Tolentino</b> , <i>Philippines</i>	
13:43-13:46	WORK RELATED MUSCULOSKELETAL DISORDERS AMONG SURGEONS PERFORMING MINIMALLY INVASIVE SURGERY IN SOUTHERN PHILIPPINES MEDICAL CENTER <b>Sigrid Barinaga</b> , <i>Philippines</i>	
13:46-13:49	GENITAL HERPES ZOSTER – AN UNUSUAL BUT IMPORTANT CAUSE OF ACUTE NONTRAUMATIC VULVAR ULCERS <b>Joana Galvao</b> , <i>Portugal</i>	
13:49-13:52	HERBAL MEDICINE (TAOHONG SIWU TANG) FOR THE TREATMENT OF PRIMARY DYSMENORRHEA: A SYSTEMATIC REVIEW AND META-ANALYSIS <b>Chang Hoon Lee</b> , <i>South Korea</i>	
13:40-14:16	<b>MODERATED E-POSTER SESSION 4 (screen 2) - FETOMATERNAL MEDICINE</b>	Exhibition Hall
Chairperson	<b>Gerard Visser</b> , <i>Netherlands</i>	
13:40-13:43	HIV INFECTION AND POSTPARTUM HAEMORRHAGE IN A LOW-MIDDLE INCOME SETTING: A RETROSPECTIVE CROSS-SECTIONAL STUDY IN DAR ES SALAAM, TANZANIA <b>Thomas Brown</b> , <i>UK</i>	
13:43-13:46	PREVALENCE OF HIP AND LGA DURING THE COVID-19 PANDEMIC <b>Elena Costa</b> , <i>Belgium</i>	
13:46-13:49	PREVALENCE AND RISK FACTORS OF OCCULT BACTERIAL VAGINOSIS AMONG PREGNANT WOMEN IN A TERTIARY HOSPITAL IN DAVAO CITY <b>Isabela Francesca Delicana</b> , <i>Philippines</i>	
13:49-13:52	PLACENTAL GLUCOSE TRANSPORTER EXPRESSION IN PREGNANCIES WITH ALTERED FETAL GROWTH <b>Muhammad Pradhiki Mahindra</b> , <i>UK</i>	
13:52-13:55	EFFECT OF PREMATURE PLACENTAL AGING IN MATERNAL AND FETAL OUTCOMES IN A TERTIARY HOSPITAL IN DAVAO CITY, PHILIPPINES, A PROSPECTIVE COHORT STUDY <b>Katrina Therese Nartatez</b> , <i>Philippines</i>	
13:55-13:58	6Q22.31Q23.3 INTERSTITIAL DELETION: A RARE PRENATAL DIAGNOSIS <b>Maria Beatriz Palmeira</b> , <i>Portugal</i>	
13:58-14:01	MOSAICISM TRISOMY 5: A RARE PRENATAL DIAGNOSIS <b>Maria Beatriz Palmeira</b> , <i>Portugal</i>	
14:01-14:04	METFORMIN VERSUS INSULIN IN THE MANAGEMENT OF GESTATIONAL DIABETES MELLITUS: A META-ANALYSIS <b>Laurice Gizelle Ramos</b> , <i>Philippines</i>	
14:04-14:07	THE USE OF VAGINAL CERCLAGE PLUS MICRONIZED PROGESTERONE IN PATIENTS DIAGNOSED WITH PREVIOUS HISTORY OF SPONTANEOUS PREGNANCY LOSS OR HISTORY OF PRIOR PRETERM BIRTH <b>Leah Socorro Rivera</b> , <i>Philippines</i>	
14:07-14:10	A CASE REPORT – TORSION OF A PARAOVARIAN CYST IN THIRD TRIMESTER PREGNANCY <b>Hanna Schroeder</b> , <i>Austria</i>	
14:10-14:13	ASSESSING THE INTERRATER RELIABILITY OF TRANSABDOMINAL CERVICAL LENGTH MEASUREMENT TO SCREEN FOR SHORT CERVIX IN A CANADIAN COHORT: A PILOT STUDY <b>Alissa Zhang</b> , <i>Canada</i>	
14:13-14:16	NIPOCALIMAB PHARMACODYNAMICS IN A PHASE 2 STUDY IN PREGNANCIES AT RISK OF EARLY-ONSET SEVERE HEMOLYTIC DISEASE OF THE FETUS AND NEWBORN <b>May Lee Tjoa</b> , <i>USA</i>	



## E-Poster Presentations

### ART/IVF/INFERTILITY

- HERLYN-WERNER-WUNDERLICH SYNDROME, COEXISTING WITH A URETHROVAGINAL FISTULA AND A LOWER VAGINAL ATRESIA, AND VACTERL ASSOCIATION: A CASE REPORT  
**Dianne Beatrice Cuyugan-Vitto**, *Philippines*
- PREIMPLANTATION GENETIC TESTING FOR ANEUPLOIDY (PGT-A) AND REPRODUCTIVE OUTCOME OF WOMEN WITH ADVANCED MATERNAL AGE (AMA) IN THE UNITED ARAB EMIRATES (UAE)  
**Ozge Ayvaz**, *United Arab Emirates*
- METABOLOMIC ANALYSIS OF FOLLICULAR FLUID IN WOMEN WITH ENDOMETRIOSIS: A PROSPECTIVE STUDY  
**Hye Kyeong Kim**, *South Korea*
- IMMUNE PATTERNS OF THE ENDOMETRIUM DURING IMPLANTATION FAILURES  
**Polina Miroslava**, *Russia*
- IMPACT OF THYROID AUTOANTIBODIES AND SERUM TSH LEVEL ON CLINICAL IVF OUTCOMES  
**Woojeong Kim**, *South Korea*
- CLINICAL PREGNANCY RATE AFTER TWO DIFFERENT METHODS OF LASER-ASSISTED HATCHING ON VITRIFIED-WARMED DAY-3 EMBRYOS OR DAY-5 BLASTOCYSTS  
**Woojeong Kim**, *South Korea*
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# *Abstracts*

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## SPEAKER ABSTRACTS

### DEBATE: WE SHOULD OFFER OVARIAN RESERVE TEST FOR ALL WOMEN AT AGE 30! - PRO

Teresa Almeida-Santos, Portugal

The average age of women at birth of first child has been increasing for the last 4 decades all over Europe, being around 30 years old in most countries. Reproductive age women have insufficient knowledge about the age-related fertility decline and 10% of them are faced with an unexpected poor ovarian reserve (POR) when they decide to get pregnant. For women below 30, AMH levels are most likely a marker of oocyte quantity, rather than quality, and therefore would not affect pregnancy rates in the short-term. Nevertheless, screening for POR could improve the outcome of reproductive counselling by providing women with valuable information. A survey conducted in Portugal in 300 reproductive age women not attempting pregnancy revealed that if a low AMH would be found, 83% of them would change their reproductive plans, 36% would accelerate their first pregnancy to the upcoming 2 years and 27.5% would consider oocyte cryopreservation. The remaining women would either not change their plans after getting the information or even consider adoption. By attempting to conceive earlier, pregnancy success rates could be improved, both naturally and with ART, if needed, as women would start trying to get pregnant at a younger age than previously planned. This could potentially reduce costs associated, while allowing for improvement of the birth rate among the 10% of women with lower AMH than expected (>0.4 ng/ml). In conclusion, the introduction of an AMH based ovarian reserve screening program in young women in Portugal could provide valuable information for reproductive decisions and ultimately would also lead to more efficient use of fertility treatments, shortening the infertility journey.

### MYOMA AND UTERINE MALFORMATIONS, A UNIQUE ASSOCIATION

Luis Alonso Pacheco MD <sup>(1,2)</sup>

<sup>1</sup>Director Unidad Endoscopia Centro Gutenberg. Málaga. Spain

<sup>2</sup>Director Unidad Histeroscopia Hospital Quirónsalud. Málaga. Spain

Uterine fibroids affect between 20-50% of women of reproductive age. Fortunately, only 3-5% of these fibroids directly impact fertility. Fibroids that affect the uterine cavity (types 0, 1, and 2) are the ones associated with infertility, lower pregnancy rates, and live births. On the other hand, recent systematic reviews estimate the incidence of uterine malformations in the general population to be between 5.5% and 6.7%, between 7.3% and 8% in infertile populations, and between 13.3% and 16.7% in recurrent miscarriage populations. Despite the relatively common occurrence of both fibroids and uterine malformations, very few documented cases associate the presence of a fibroid with the existence of a uterine malformation. A literature search on the topic yielded fewer than 30 published cases of this association, leading to the conclusion that this association is either extremely rare or that many cases go undiagnosed. This presentation will showcase different cases grouped by uterine malformation in which this association is observed. In cases of uterine septum and fibroids, we will present the diagnosis and management in three possible scenarios: first, the case of a fibroid coexisting with a uterine septum; second, a fibroid located on the septum; and finally, a fibroid located within the septum. We will also discuss the appropriate surgical technique for resolving both pathologies. We will also address the coexistence of a bicornuate uterus, according to the 2013 ESGE/ESHRE classification. The cases presented involve the coexistence of a bicornuate uterus with a submucosal fibroid and the presence of a submucosal fibroid within the septate wall causing the bicornuate uterus. Like in the case of a uterine septum, we will provide guidelines for the correct surgical resolution of both pathologies. Lastly, we will address the coexistence of a unicornuate uterus and uterine fibroid. In conclusion, this presentation aims to showcase different cases of this association between fibroids and congenital uterine malformations, which are either rare or underdiagnosed.

### INTRAUTERINE BLIND PROCEDURES: THE BEGINNING OF THE END?

Luis Alonso Pacheco MD <sup>(1,2)</sup>

<sup>1</sup>Director Unidad Endoscopia Centro Gutenberg. Málaga. Spain

<sup>2</sup>Director Unidad Histeroscopia Hospital Quirónsalud. Málaga. Spain

Uterine curettage is a blind technique that was first used in 1846. Since then, the original technique has seen minimal modification, and it remains the most commonly accepted technique worldwide for the diagnosis and treatment of uterine pathology to this day. In fact, it was considered the gold standard technique for the diagnosis and treatment of intrauterine pathology until the end of the last century. Furthermore, blind endometrial biopsies are still widely used globally for the diagnosis of endometrial pathologies. For this purpose, systems such as Pippelle®, Novak, and others are employed. Gynecologists are the only specialists who continue to use a blind technique for both diagnosing and treating pathologies affecting the uterine cavity. The intrauterine procedures that are still frequently performed blindly include:

- A. Endometrial biopsies in cases of suspected endometrial pathology, thick endometrium, or postmenopausal bleeding.
- B. Dilation and curettage (D&C) for the treatment of retained products of conception.
- C. D&C for the evacuation of first-trimester missed abortions.
- D. D&C for first-trimester pregnancy termination.
- E. D&C for both diagnosis and treatment in cases of heavy menstrual bleeding.
- F. D&C for the treatment of endometrial polyps.
- G. D&C for diagnosis in cases of thick endometrium.

In 2013, experts from three leading societies in intrauterine endoscopic surgery (ESGE, AAGL, and GCH) presented a statement known as the "Málaga Document" in favor of conducting the diagnosis and treatment of intrauterine pathology under direct visualization. They emphasized that when the level of published evidence demonstrates the superiority of direct visualization procedures and the technology is available, blind intrauterine procedures, both for diagnostic and therapeutic purposes, should be avoided.

### DEFINITION OF RIF AND FAILURE OF ADD-ONS

Zion Ben Rafael, Israel

Founder and Co-chairmen COGI Congress

In the last 30 years an "iatrogenic invention" namely "repeated implantation failure" (RIF) was coined in patients failing 1-3 cycles or 4-10 embryos in under <40 years old patients. This definition is baseless, it is not related to the **etiology** of the failure, can have a different reason in every cycle, and does not include crucial information on women's age. (Ben Rafael 2020). We now know that most failures are due to the **embryo's aneuploidy** which is age-dependent and **cannot be mended** by any measure of add-ons. So it is not surprising that after so many years and thousands of publications, none of the many add-ons were proven (ESHRE "traffic lights"). *Current RIF definitions are responsible for many misleading publications and unwarranted procedures as solutions namely, add-ons. Google search for "RIF/scholar" turned over 2M results in 2020, and 3.7 M today (seriously!), mainly suggesting running tests that were probably done prior to IVF, or starting a plethora of unrelated add-ons, or unproven stimulation protocols. Obviously, publications originating from such studies are false. ESHRE workshop quoted that in general "Much of the published medical research is apparently flawed cannot be replicated or has limited or no utility (altman1994). RIF and add-ons contribute to too many bad publications leading also to a drop in the quality of treatment and results worldwide (Gleicher). When did add-ons originate? Most add-ons were developed in the 1990s, When LBR was frustratingly low ~6%. So, every new idea was quickly embraced without the required proof and despite having no relationship to the **etiology of failure**, with the hope of increasing the success rate. But today overall LBR of all European Countries and all ages is **22.2%** (ESHRE, HFEA), and the original reason for applying **unproven add-on procedures** vanished. Nevertheless, 74% of patients in the UK and 84% in Australia are still offered add-ons probably for financial reasons. It was found that LBR after transfer of a single euploid embryo, in women under <35 years is about 60% per cycle and 92.6% after 3 cycles (Pirtea et al) fantastic results, which clearly indicate that no current add-ons are needed or can work since **"it is all in the embryo"** and add-ons like "ERA test" (pET), "Endometrial Scratching", "Assisted Hatching", "freeze all" and all other adjuvant therapies, each manipulating unrelated parts of the IVF equation cannot mend an **aneuploid embryo**. Since we know that the rate of euploid embryos sharply drops from 55% at 35 years to 8.5% at 42 years, and accordingly, LBR drops with age from 22% at 38 years to 6% at 42, it is impossible to discuss RIF, without factoring the chances of success (which drops) with age. In summary, Aneuploidy is the main reason for repeated IVF failures, and no add-ons can mend it or be used except*





for research purposes. Add-ons are chiefly used to increase the cash stream and give the patients false hopes to prevent them from quitting after failure. True RIF is very rare, and publications based on standard RIF definitions should be reviewed with skepticism, (and rejected).

### SLEEP DISORDERS, MELATONIN, AND PREGNANCY COMPLICATIONS

Andrii Berbets

Department of Obstetrics and Gynecology, Bukovinian State Medical University, Chernivtsi, Ukraine

#### Problem

The pineal gland produces the important hormone melatonin, which maintains the human body's circadian rhythm. In pregnant women, melatonin is also produced by the placenta. The effect of melatonin deficiency in case of pregnancy disorders, such as intrauterine growth restriction (IUGR) of fetus and preeclampsia (PE), has been insufficiently studied. **Methods:** We analyzed the recent publications dedicated to the problem. **Results:** In analyzed papers, the relevant information is presented as follows: the morning concentration of melatonin in the blood of pregnant women with IUGR significantly reduces, compared to healthy pregnant women, which authors consider to be caused mostly by placental dysfunction. Changes in the functioning of the pineal gland in patients with IUGR are clinically expressed as sleep disorders and confirmed by a significant decrease of melatonin concentrations in saliva taken at night, in comparison with women with non-complicated pregnancies. Sleep disorders in women with IUGR manifest early during pregnancy, mostly in pregnancy term 22–30 weeks. Changes in melatonin concentrations in such patients are accompanied by a lowering of the concentrations of placental growth factor (PIGF) in blood and with increase of the blood levels of cytokines, namely proinflammatory TNF- $\alpha$ , IL-1- $\beta$  and IL-6, compared to healthy pregnant women. In placental tissue melatonin receptors 1A and 1B are significantly less expressed in the case that pregnancy is complicated with IUGR, which is confirmed by changes in the optical density of these receptors. In publications dedicated to preeclampsia, it is stated that the morning concentrations of melatonin and PIGF were also significantly lower in the blood of women with PE compared to healthy pregnant women. The authors suggest that alterations in the placental production of melatonin and PIGF may contribute to the development of preeclampsia. In contrast, higher levels of the pro-inflammatory cytokine interleukin-6 (IL-6) and the anti-inflammatory cytokine interleukin-10 (IL-10) were observed in preeclampsia patients' blood, compared to the healthy pregnant women. Significant sleep disorders were also described in patients with PE. **Conclusion:** Melatonin is a hormone that plays a very important role in the mechanisms of development of such pregnancy complications as IUGR and PE. Further studies are needed to describe its role in the pathways of mentioned disorders of human pregnancy. Sleep disorders, if present in a pregnant patient, should not be ignored by clinicians.

#### statement:

### HOT FLUSHES, PERIPHERAL OR CENTRAL NERVOUS SYSTEM?

Mark Brincat, Malta

There is an increasing body of evidence that suggests that the sudden depletion of Sex Steroids at the Menopause, notably Oestrogens, cause alterations in Neurotransmitter activity, leading to Hot Flushes. This occurs either directly or indirectly via various neurotransmitters. This is mainly a CNS activity, but there is also evidence of possible peripheral nervous system activity since the various neurotransmitters involved also act peripherally. The Hot Flush is the most characteristic, most frequently encountered symptom of the menopause and causes major inconvenience and distress. The end result is an instability in peripheral blood flow with the initially frequent Hot Flushes followed by a shiver. Understanding its pathophysiology leads to better understanding of treatment options. Oestrogens continue to be the best treatment option. Where there are contraindications, or a lack of desire to take Oestrogens, other options, such as NK3 receptor agonists or SSRI's, are offering interesting possibilities.

### DEBATE- PATIENTS WITH EARLY MENOPAUSE COULD BE TREATED CONTINUOUSLY TO PREVENT DISEASES

Mark Brincat, Malta

Women can nowadays expect to spend one third of their lives without ovarian function, in their oestrogen and other sex steroid deprived states. With increasing longevity and an anti-ageing approach to medicine, the use of HRT is a natural choice. The question is whether all women take it till the end of their lives or not. Given the high level of non-compliance, taking HRT for at least 5 years gives long lasting benefits. We have robust data from the WHI 18 years follow-up studies, showing that taking HRT for at least 5 to 7 years improves outcome in the incidence of osteoporosis, and Alzheimer's, colon cancer and even breast cancer. In HRT groups there are less deaths particularly in those who start HRT in their 50's. There is also a reduction in cardiovascular deaths. This is particularly so in women who are on oestrogen only, probably because they would have had a TAH+BSO, and these have a significantly lower incidence. Would women taking it for longer improve these statistics? This is not known but surely we can individualise women better through an understanding of side effects, and cost of therapy, versus advantages achieved.

### CAN HRT AND OTHER TREATMENT FOR THE MENOPAUSE BE INDIVIDUALISED TO REDUCE THE INCIDENCE OF BREAST CANCER?

Mark Brincat, Malta

Initially when this was suggested there was some scepticism that such a reduction in Breast Cancer could be achieved, through HRT and other treatment. Two bodies of evidence indicated that this was such. The first was the Raloxifene Studies that indicated reductions of around 45% in Oestrogen receptor Breast Cancer rates, particularly the Oestrogen Receptor positive ones. The WHI study showed that even after 18 years follow up women on conjugated oestrogen alone could reduce oestrogen receptor positive Breast Cancer rates similarly by a factor of 45%. Other studies focused on the Progesterone/Progesterone Component of HRT. This indicated that the closer one the progesterone was to the original natural Progesterone the lower the increased risk of Breast Cancer, such that Didrogesterone, Micronised Progesterone showed no increased risk in incidence of Breast Cancer. Other modalities commonly used in the menopause such as Statins, and Vitamin D have also been associated with lower incidences of Breast Cancer. The latest Oestrogen being used in HRT, Estetrol E4 also is very promising in that basic science studies have indicated that E4 has dose related apoptotic actions on Breast Cancer cells. It is therefore possible to individualise treatment at the time of the Menopause so as not to just simply not put the woman at risk of Breast Cancer, but to actually reverse the trend and offer some degree of protection. This area of study needs to be further developed such that the benefits of HRT are potentially further extended to reducing the incidence of Breast Cancer.

### DEBATE: LICHEN SCLEROSUS OR VULVODYNIA VULVODYNIA

Mark Brincat, Malta

Isolated vulval pain is classified as vulvodynia and is not to be confused with the pain derived from Lichen Sclerosus. The pathology of Lichen Sclerosus is clear and therefore the diagnosis is reliably made both clinically and if necessary histologically after biopsies are taken. In Lichen Sclerosus the vulva exhibits a white, oedematous, crinkled plaque, with fragility, manifested by purpura from rubbing and scratching. In this case treatments including corticosteroids, moisturisers, oestrogen and laser treatment and are often successful. Vulvodynia on the other hand is an all pervasive, possibly multi-aetiological condition that is manifested as genital pain syndrome. It is defined as sensations of chronic burning, irritation, rawness, and soreness in the absence of objective disease and infections. Vulvodynia occurs in 7 to 8% of women. Lichen Sclerosus can sometimes progress to dysplasia and eventually possibly to squamous cell carcinoma. Vulvodynia does not normally progress to more serious pathology. Vulvodynia generally occurs as a result of pelvic floor dysfunction and neuropathic pain, with anxiety/depression issues exacerbating symptoms. Common topical irritants exacerbate symptoms as does oestrogen deficiency. Women often exhibit other pain symptoms such as chronic headaches, fibromyalgia and others. Studies have shown biochemical markers of inflammation in the



absence of clinical or histologic inflammation. Constipation, irritable bowel syndrome and intestinal cystitis are commonly present. The treatment for Vulvodynia includes amitriptyline, gabapentin, venlafaxine and others. The place for laser though promising, is still being assessed in the treatment of this condition. In conclusion therefore, the definition and histopathology of Vulvodynia is very different to the pain and manifestations of Lichen Sclerosus and the two are not to be regarded as having similar pathological manifestations even though they both lead to genital pain.

## EMBRYO SELECTION BASED ON POLYGENIC DISEASE RISK: EPIDEMIOLOGICAL AND CLINICAL CONSIDERATIONS

Shai Carmi

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The genetic composition of embryos generated by *in-vitro* fertilization (IVF) can be examined prior to transfer using preimplantation genetic testing (PGT). PGT is currently limited to detecting single-gene, highly-penetrant pathogenic variants or large structural aberrations. Recent advances in PGT have made genome-wide genotyping of IVF embryos feasible and affordable, raising the question whether embryos could (or should) be screened for their risk of *polygenic* diseases such as breast cancer, hypertension, diabetes, or schizophrenia. In this talk, I will review the main arguments for and against polygenic embryo screening, focusing on the following considerations:

- 1) Predictions, based on statistical modeling, that embryo screening will substantially reduce disease risk if only the lowest risk embryo is transferred.
- 2) Practical factors that may limit the achieved risk reduction.
- 3) The possible harms of polygenic embryo screening, including an unnecessary IVF treatment, discarding healthy embryos, and choice overload.

## PAIN MANAGEMENT IN OFFICE PROCEDURES

T Justin Clark, UK

Advances in endoscopic technology and ancillary instrumentation have facilitated the development of operative hysteroscopic procedures in an outpatient setting. Outpatient / office hysteroscopy is successful, safe and well tolerated. However, as with any procedure requiring instrumentation of the uterus, it can be associated with significant pain and anxiety. This not only impacts upon the woman's satisfaction with their experience, but also limits the feasibility and possibly the safety, accuracy and effectiveness of the procedure. In order to minimise pain and discomfort, variations in hysteroscopic equipment, adaptations in technique and use of pharmacological agents have been advocated. This talk will assess all these components and future interventions to optimise pain management to facilitate successful office hysteroscopic procedures.

## THE HISTORY OF THE FETAL ESTROGEN ESTETROL FOR HUMAN USE

Herjan JT Coelingh Bennink

President of Pantarhei Bioscience and Pantarhei Oncology

Estetrol (E4) was first identified by Egon Diczfalussy at the Karolinska Institute in Stockholm in 1965 and confirmed in 1966 by Gurpide at the Rockefeller Institute in New York, who named it Estetrol. In preclinical studies E4 was found to be a weak estrogen, with a potency about 100x less than E2 and unsuitable as marker of fetal wellbeing. Halfway the eighties interest in E4 disappeared and the estrogen was forgotten. In 2001, Pantarhei Bioscience decided to investigate whether E4 might be useful as an estrogen for human use and performed an extensive preclinical and phase I and II clinical development program to develop E4 for Combined Oral Contraception (COC) and Menopausal Hormone Therapy (MHT). In 2015 Pantarhei sold the rights for E4 to Mithra Pharmaceuticals in Liège, Belgium, but kept the rights on E4 for oncological applications. From 2015-2021 Mithra performed the further phase IIB and III development of E4 for COC and MHT and in 2021 a new E4 containing COC became available, whereas E4 for MHT is expected to follow in 2024. In 2014, Pantarhei Bioscience founded its subsidiary Pantarhei Oncology (PRO) for the development of E4 for the treatment of advanced breast cancer (BCa) and advanced prostate cancer (PCa). The first human E4 BCa study by Singer et al in Vienna,

Austria showed that 20 mg E4 induced apoptosis in BCa tumor tissue. High doses of E4 (HDE4) of 20 mg, 40 mg and 60 mg E4 were investigated in end stage BCa patients by Schmidt et al in Mainz, Germany. In this 12-week study, anti-tumor effects were observed in 5 of 9 patients according to the RECIST criteria and one patient survived for 4 years on HDE4. A dose of 40 mg E4 was selected in healthy older males for further development for advanced PCa. A first 24-week clinical study was performed in four clinics in the Netherlands in patients with advanced PC, starting androgen deprivation therapy (ADT) and co-treated with HDE4 or placebo. Additional anti-tumor effects of HDE4 were demonstrated by further suppression of the biochemical tumor markers total and free T, PSA, FSH and IGF-1 and strong HDE4 estrogen replacement/treatment effects were observed on hot flashes (HFs), bone biomarkers and Quality-of Life (QoL). In conclusion, Estetrol is a weak but safe estrogen, allowing high doses in human applications for Women's Health and Reproductive Endocrine Oncology.

## OOCYTE MODIFICATIONS AND EARLY DEVELOPMENTAL EVENTS

Giovanni Coticchio

IVIRMA Global Research Alliance, 9.baby - Bologna, Italy

Human embryos are very frequently affected by maternally-inherited aneuploidies, which in the vast majority of cases determine developmental failure at pre- or postimplantation stages. Recent evidence, generated by the alliance between diverse technologies now routinely employed in the IVF laboratory, has revealed a broader, more complex scenario. Aberrant patterns occurring at the cellular or molecular level can impact at multiple stages the trajectory of development to blastocyst. In this context, fertilisation is an extremely delicate phase, as it marks the transition between gametic and embryonic life. Centrosomes, essential for mitosis, are assembled *ex novo* from components of both parents. Very large and initially distant nuclei (the pronuclei) are brought together and positioned centrally. The overall cell arrangement is converted from asymmetric to symmetric. The maternal and paternal chromosome sets, initially separate and scattered within their respective pronuclei, become clustered where the pronuclei juxtapose, to facilitate their assembly in the mitotic spindle. The meiotic spindle is replaced by a segregation machinery that may form as a transient or persistent dual mitotic spindle. Maternal proteins assist the decay of maternal mRNAs to allow the translation of newly synthesised zygotic transcripts. The diversity and complexity of these events, regulated in a precise temporal order and occurring in narrow time windows, make fertilisation a highly error-prone process. As a consequence, at the first mitotic division, cellular or genomic integrity may be lost, with fatal consequences for embryonic development.

## ARE OUR EMBRYO CULTURE SYSTEMS THE BEST THEY CAN BE? THE YES ARGUMENT

Giovanni Coticchio

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In the last two-three decades, the clinical outcomes of IVF treatments have increased significantly. This progress has been made possible by several factors, among which novel gamete and embryo culture media and systems have played a crucial role. Until the early 1990, embryos were grown in ordinary non-specific cell culture media that included a balanced salt formulation, serum, an energy source and few amino acids. Embryo growth occurred in plasticware not always tested for embryo toxicity that was placed for culture in large relatively inefficient incubators. Scientists have dedicated substantial efforts to understanding the specific nutritional needs of developing embryos. Over time, this has led to the development of novel and diverse culture media that attempt to mimic the intricate balance of salts, amino acids, and vitamins present in the female reproductive environment of the tubes and the uterus. Indeed, these media largely provide the essential nutrients required for cell division, differentiation, and overall viability. Quality control is another critical factor contributing to the efficacy of modern culture media and components. Rigorous manufacturing processes ensure consistency and stability, minimizing the risk of introducing contaminants that could compromise embryo development. For several reasons, it seems unlikely that the effectiveness of embryo culture can be dramatically improved by the development of even more advanced culture media: i) Irrespective of culture media quality, a large proportion of embryos are affected by chromosomal aberrations that cause cleavage arrest; ii) research to understand the human embryo



biochemical needs is hampered by practical and ethical factors; iii) the many components of culture media mutually interact in a extremely complex fashion that largely elude possible attempts of systematic analysis; iv) the role of growth factors, probably key regulatory elements of embryo growth, remains poorly understood; v) human embryos have impressive adaptive and plastic attributes, also in response to biochemical cues. In addition, recent introduction of time-lapse technology in combination with low oxygen tension has further enhanced the overall efficiency of culture systems, assuring further stability and consistency and overall more appropriate growth conditions. While the field of reproductive medicine is dynamic and continually evolving, the present landscape suggests that the existing culture systems are, indeed, are appropriate to support successful embryo culture.

## IN VITRO MATURATION (IVM) OF OOCYTES IN WOMEN WITH PCOS

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Oocyte in vitro maturation (IVM) is an assisted reproductive technology (ART) designed to obtain mature oocytes following in-vitro culture of immature cumulus–oocyte complexes collected from antral follicles. Oocyte maturation rates in vitro are generally lower than maturation rates of oocytes retrieved in a conventional IVF programme after administration of an ovulation trigger, and the number of useable embryos is also lower. With current IVM systems, a considerable proportion of immature oocytes from small antral follicles do not acquire meiotic competence and would have required more time within their follicular environment to accomplish physiological nuclear and cytoplasmic maturation. As a result, pregnancy rates after IVM are generally lower compared to conventional IVF, and IVM is not widely used. Moreover, there are very few large-scale clinical trials that have compared the efficiency of IVM and conventional IVF. Nevertheless, the endeavors of a group of centers with expertise in IVM have reported acceptable pregnancy rates and provided reassuring safety data for mothers and children, and IVM has recently been endorsed as a non-experimental treatment by the ASRM. According to the 2023 international evidence-based guideline for the management of PCOS, subfertile women who are most suitable for IVM are those with an unacceptably high risk of OHSS. In this talk, I will give an overview of the available data supporting the use of IVM in selected women with PCOS and I will identify the gaps of knowledge that impede a more widespread uptake of this technology.

## DECREASED OVARIAN RESPONSE: DUO-STIMULATION

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Dual stimulation – Duplex or DuoStim – was initiated after the proof of efficacy of OS initiated during the luteal phase. The first such protocol was initiated by Kuang et al. and dubbed the Shanghai Protocol (1). The authors reported that the OS conducted in the luteal phase was more productive – Nb oocytes – than that taking place in the follicular phase. The authors claimed a priming effect of the first OS for the second. Remarkably however, the stimulation doses were different, with higher gonadotropin/CC/letrozole doses during the luteal phase OS. Intrigued by these results, we conducted a dual OS using the exact same doses of gonadotropins for the follicular and luteal phase OS. We retrieved the same number of MII oocytes during the follicular and luteal OS (2). Ubaldi's team pursued and expanded Dual-stim studies and reported retrieving the same number of euploid embryos during both OS (3). Moreover, the same team also reported that the obstetrical outcome was similar for oocytes retrieved in both OS (4). Ultimately this group concluded that DuoStim reduces time to pregnancy (5). As the number of oocytes needed on average per life birth is approximately 20, it is evident that any means that allows increasing the yield is beneficial (6). Importantly for patients, a dual stim – follicular and luteal phase OS – is seen as less stressful than 2 consecutive OS. Most patients describe simply a long OS. Therefore, DuoStim is in our eyes indicated in case of por-insufficient ovarian responders.

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## WHEN TO PERFORM AN ELECTIVE CESAREAN SECTION IN CASES OF PLACENTA PREVIA, PAS OR OTHER HIGH-RISK PREGNANCIES?

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In general, the best timing to perform a planned cesarean section (CS) is not earlier than 39/0 weeks of gestation. Spontaneous onset of labor will occur in 10-23% of cases but this depends on the obstetric history. NICU admission and neonatal death is lowest at 39/0 weeks. In case of placenta previa international guidelines advice to perform a planned CS from 34/0 to 37/6 weeks. With blood loss they advice from 34/0 to 36/6 weeks. Neonatal mortality is at its lowest point at 37/0 weeks. In low-risk situations it seems reasonable to postpone a planned CS even upto 39/0 weeks. In case of risk factors 36 weeks is preferable. In case of placenta accreta spectrum (PAS) guidelines advice to perform a planned CS from 34/0 to 36/6 weeks. Arguments to be considered are reduction of neonatal morbidity with ongoing gestation, chances of bleeding necessitating emergency CS, advantage of non-emergent planned CS, logistics in case of emergency. Cases of bleeding necessitating emergency CS increase from 36 weeks onwards. At 40 weeks in 20% of cases the delivery starts with bleeding. Planned CS in PAS should be scheduled after 36 weeks and should be adapted in case of risk factors. Planned CS in case of multiple CSs is not discussed in guidelines. Arguments to be considered are reduction of neonatal morbidity with ongoing gestation, chances of uterine rupture necessitating emergency CS, logistics in case of emergency. After three CSs the chance of uterine rupture or uterine dehiscence in non-laboring women increases from 1-2 % to more than 4% but this occurs mostly with spontaneous onset of labor. Therefore, a planned CS after multiple CSs can take place at 39/0 weeks of gestation or later. After three CSs earlier planning may be considered.

## WHY THE NEW FIGO CLASSIFICATION FOR OVULATORY DISORDERS, AND IMPLICATIONS FOR POI DIAGNOSIS

Bart CJM Fauser

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The FIGO (Federation International de Gynecologie et d'Obstetrique) recently proposed a new classification for ovulatory disorders (Munto et al. *Hum Reprod* 2022). A very detailed so called Delphi procedure was applied in order to reach consensus amongst the many participants. The new HyPO-P system involves 4 different types (type I hypothalamic, type II pituitary and type III ovarian), where PCOS was now considered a separate entity and referred to as type IV. The proposed classification was considered based on the presumed primary course of ovulatory failure, i.e. hypothalamus, pituitary, or ovary. In the earlier WHO classification hypothalamic and pituitary was combined as group 3. No doubt, POI - predominantly due to ovarian follicle exhaustion - would now belong to the type III, just as group 3 in the earlier WHO classification. However, critical questions regarding the key diagnostic features remain unanswered (Balen et al. *Fertil Steril* 2023):

- regarding serum FSH concentrations; what is the proper cut-off level, and how often should this be repeated and at what interval.





- Should estradiol levels be added for diagnosis
- What definition should be used for amenorrhea, absence of vaginal bleeding for how long?
- And is there any role of AMH (Anti-Mullerian hormone) – as the current best available biomarker for ovarian reserve - in the early detection of POI
- And most importantly the cut-off of 40 years allowing to differentiate between POI and early normal menopause. Such a clear cut-off suggests that a well defined distinction can be made between pathological versus physiological ovarian follicle pool depletion. More recent genomic studies clearly demonstrate that this is not the case. There is a distinct overlap between SNP profiles identified in women entering menopause before or after 40 years of age. Distinct gene mutations can only be found in familial POI.
- Should a distinction be made between isolated or familial cases?

## POLYCYSTIC OVARY SYNDROME: GENERAL HEALTH IMPLICATIONS FOR PATIENTS AND OFFSPRING

**Bart CJM Fauser**

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According to the Rotterdam diagnostic criteria, PCOS is characterized by oligo/anovulation, clinical or biochemical signs of hyperandrogenemia along with the polycystic appearance of ovaries. Although not part of the diagnostic criteria, PCOS often coincides with early signs of metabolic dysfunction and obesity. Even controlled for body weight, insulin resistance can often be observed.

Infertility treatments are often effective resulting in a high proportion of women with PCOS getting pregnant. However, even singleton pregnancies in women with PCOS are more often compromised, especially gestational diabetes, hypertension during pregnancy and premature delivery. We have conducted various prospective cohort follow-up studies demonstrating that especially obese, hyperandrogenic, insulin resistant women with PCOS are more prone to develop pregnancy complications. Sparce children follow-up studies demonstrated early but subtle signs of cardiometabolic dysfunction. It remains to be elucidated to what extent these abnormalities are related to a genetic predisposition or to an abnormal environment during embryonic development. It has been clearly established in the general population that signs of metabolic dysfunction at early age is associated with later life health risks such as myocardial infarction or stroke. The presence of obesity at young age further increases the risk for later life health problems. It is generally believed, that the same would apply for women with PCOS, especially in the hyperandrogenic phenotype. Cross sectional studies of postmenopausal women presenting with hyperandrogenemia (taken as a proxy for PCOS) or few long-term follow up studies have generated conflicting results. The questions arises why women with PCOS, presenting with various early age risk factors, do not clearly present with an increased prevalence of later life cardiovascular disease.

## SAVE US FROM BAD QUALITY PUBLICATIONS

**Bart CJM Fauser**

*Professor Em. of Reproductive Medicine, University of Utrecht, Utrecht, The Netherlands*

The randomized controlled trial - usually comparing a novel treatment strategy with the standard of care - is generally considered the highest level of scientific evidence. The personal views of the opinion leader or the senior doctor was no longer enough to justify interventions. Ultimately, the combined analysis of multiple RCTs - referred to as meta analysis - is considered to be as close as possible to the 'truth'. According to some, at present more than 50% of all medical literature consists of meta analyses. For sure, throughout medicine over the last 3 decades this approach has disclosed numerous widely applied interventions to be of little - if any - clinical value. Example in the field of Reproductive Medicine include, so called add-on adjuvant interventions in IVF, aneuploidy screening of embryos, and the use of the embryoscope in the laboratory. However, the validity of RCTs as the holy grail of the truth is increasingly questioned. Various shortcomings of RCTs deserve further attention, such as; (the often narrow) patient inclusion criteria, which interventions are being compared, the primary study endpoint used in the trial, and the anticipated effect size influencing the number of patients to be included in the trial. Less than

10% of all scientific publications involve RCTs, and even in such trials often surrogate outcomes are being used. In clinical trials the primary study endpoint is often decided by the investigator. Such an endpoint may not represent what is most important for patients. In addition, cost, burden of treatment and complication rates are rarely considered in intervention studies. Recent trends in patient care such as 'value based healthcare' (Porter), or 'shared decision making' (Wennberg) put much more emphasize on involving patients in deciding what should be considered the most desired treatment outcome given their specific circumstances. RCTs represent the science of means, and largely ignores the characteristics and context of individual patients. A different research strategy is required in order to develop patient tailored care. Key approaches in precision medicine include prospective cohort follow-up studies, extensive standardized phenotyping of patients, big data (and possibly artificial intelligence) and the use of multi-variate prediction analysis. Such individualized treatment strategies have already been widely implemented in areas like oncology and cardiovascular disease, but so far reproductive medicine is lacking behind.

## OLDER FATHER AND IVF REPRODUCTIVE OUTCOMES

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In the context of delayed parenthood in both men and women, the impact of advanced paternal age on spontaneous and assisted conception has only been recently explored. Although several studies have shown a decrease in sperm parameters with increasing male age, most probably due to oxidative stress, the exact mechanism of this progressive and slow alteration of spermatogenesis remains unknown. Concerning IVF outcomes, the literature is quite abundant but studies led to discordant conclusions. While some suggest a decreased success rate in IVF cycles with older men, it remains difficult to draw firm conclusions as maternal age represents a major confounding factor. Egg donation model allows studying independently the putative association between advanced paternal age and live birth rate after ART. A recent meta-analysis conducted in >10,000 egg donation cycles concluded to a slight but significant and linear decrease in LBR with increasing paternal age. Advanced paternal age is also associated with an increased risk of adverse obstetrical and neonatal outcomes. However, the mechanisms underlying this phenomenon remain largely unexplored. Among neonatal aspects, the higher risk of fathering children with genetic or neurodevelopmental disorders in older men was recently identified in epidemiological studies. The main mechanism is likely to be de novo mutations, which are more frequent in men with advancing age. However, complex diseases such as autism or schizophrenia are caused by a combination of multiple factors. In conclusion, advanced paternal age is associated with altered sperm parameters and slightly decreased IVF outcomes. Concerns on newborns' health have gained visibility and advocate for further research to decipher the mechanisms involved on paternal age-related disorders. Altogether, these elements advocate for appropriate counselling so that men / couples can make an informed decision about IVF care with expected outcomes and risk of adverse events clearly in mind.

## MICROFLUIDICS FOR SPERM SELECTION: BETTER REPRODUCTIVE OUTCOMES? YES

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Only a very small proportion of the millions of sperm cells present in an ejaculate reach the oocyte following complex and combined selection mechanisms in vivo. Since the early days of ART, sperm selection remains mainly based on density (gradient) or motility (swim up), both characteristics that do not reflect their fertilization competence. Microfluidics is the science which studies the behaviour of fluids through micro-channels. It is a technology based on systems that process and control extremely small amounts of fluids (<μL) in microchannels (<1mm) with low energy consumption. As it might combine more



physiological sperm selection processes, it constitutes a promising tool for sperm selection in ART. Most studies have demonstrated that microfluidics devices allow fair selection of sperm cells with high motility, good morphology, low DNA fragmentation, and high chromatin integrity. However, there is no strong evidence in recent RCTs that embryology parameters and clinical outcomes are improved with microfluidics devices as compared to conventional sperm preparation / selection methods, even though some studies report higher number of good quality embryos or improved pregnancy rates. This apparent lack of translation from improved sperm parameters to clinical outcomes in ART nevertheless advocates for further research in specific subgroups of patients. Moreover, the current technological improvements in the field, with small microfluidics devices combining several selection methods, hold promises for the not too far future.

#### ADVANTAGES AND LIMITATIONS OF NOVEL TECHNOLOGY IN THE TREATMENT OF DIABETES IN PREGNANCY. CONTINUOUS GLUCOSE MONITORING (CGM) IS NOT EFFECTIVE

Christian Göbl, Austria

Despite the possible advantages of CGM in pregnancy with diabetes there are some major pitfalls and limitations, which need to be discussed. More precisely, four concerns for the use of CGM will be addressed in this lecture: i. Concerns related to accuracy; ii. Concerns due to lack of scientific evidence; iii. Concerns related to usability; iv. Concerns related to training and reimbursement. Randomized controlled trials, powered for pregnancy outcomes are still missing, especially, for patients with Gestational Diabetes Mellitus (GDM). For these concerns the effectiveness of CGM in pregnancy with diabetes remains questionable.

#### THE SELFISH SPERMATOGONIA AND PATERNAL EFFECT GENES

Anne Goriely

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It is well established that advanced paternal age is associated with low sperm count/quality and infertility. However paternal ageing has also another facet and it is increasingly recognised that it poses risks to children's physical and mental health. In this presentation I will discuss our current understanding of so-called *de novo* mutations, their origin, prevalence, importance in human disease and the impact of paternal age on their occurrence. Understanding the risks associated with delayed parenthood should be an important factor when advising couples seeking to use ART.

#### IMPACT OF LIFESTYLE AND ENVIRONMENTAL EXPOSURES ON TESTICULAR FUNCTION

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The reasons for the poor and declining semen quality of men in many populations remain elusive. A wide range of environmental variables potentially affect testicular function, both by effects on the testicular function of the mature adult man and by effects on development of the male reproductive system *in utero*. The potential for male reproductive function seems to be determined during a sensitive period *in utero*. This sensitive period appears to occur in humans at around gestational weeks 8-14, termed 'the masculinization programming window'. It has been suggested that testicular development can be disturbed by genetic defects, epigenetic factors, exposures to adverse exposures, including maternal lifestyle, such as smoking during pregnancy, and exposure to environmental chemicals. It seems that it is the cumulative effects of various low dose exposures in our environment, rather than single exposures that contribute to the appearance of adverse effects of the male reproductive system. Animal studies have shown that manmade chemicals can disrupt the hormone dependent pathways responsible for fetal testicular development, subsequently leading to impaired testicular function. Causal relationships are inherently difficult to establish in humans. Although the maximum potential for adult semen quality seems to be determined *in utero*, exposure to manmade chemicals in the environment and to other lifestyle-related stresses in the adult also influence the testicular function. Additionally, several post-natal factors such as infections, surgical procedures, and medical treatment might

cause reduced semen quality in adulthood. While male infertility is a critical problem for couples facing difficulties conceiving, its public health relevance may extend beyond fertility and reproduction. Indeed, current health and reproductive fitness are closely associated but the reproductive health also seems to be a biomarker of the future health.

#### PCOS PHENOTYPE THROUGHOUT WOMEN'S LIFE SPAN

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PCOS is the common endocrine disorder in women of reproductive age. It encounters a complex disease where genetic, endocrine, environmental and behavioral factors are intertwined with each other giving rise to a heterogeneous phenotype with reproductive, metabolic, and psychological characteristics that affects women's health and quality of life across the life-course. In the different life stages the PCOS phenotype evolves which requires a personalized diagnostic approach as well as treatment. It represents the major cause of anovulatory infertility and is also associated with hirsutism and acne. The PCOS diagnosis during adolescence is challenging because the PCOS criteria include normal physiological events that occur during puberty. With increasing age, the syndrome evolves from a reproductive disease to a more metabolic disorder. Along with metabolic disturbances including insulin resistance and abnormalities of energy expenditure, PCOS is recognized as a major risk factor for the development of type 2 diabetes and cardiovascular disease in later life. Moreover, there is evidence for familial clustering of endocrine and metabolic features of PCOS. Environmental factors such as diet and obesity might similarly contribute to the phenotype. Treatment should be tailored to the complaints and needs of the patient and involves restoring fertility, treatment of the metabolic complaints, treatment of androgen excess and providing endometrial protection. The complexity of the disorder, and the impact on quality of life, requires timely diagnosis, screening for complications and management strategies for the long term health issues associated with PCOS. The syndrome remains underdiagnosed and women experience significant delays to diagnosis.

**Key words:** Polycystic Ovary Syndrome (PCOS), Oligomenorrhea, Amenorrhea, Anovulation, Hyperandrogenism, Polycystic Ovarian Morphology (PCOM), Hirsutism, Diabetes Mellitus, Cardiovascular disease, Health Risks, Adolescence, Menopause.

#### RECURRENT IMPLANTATION FAILURE AND THE MICROBIOME

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Repeated Implantation Failure (RIF) has been described as an iatrogenic condition resulting from three unsuccessful fresh in vitro fertilization (IVF) cycles, failing to achieve a pregnancy after three completed fresh IVF-cycles with their resulting embryo transfers (ET) or failure after the transfer of at least four good-quality embryo within a minimum of three fresh or frozen cycles. The prevalence varies depending on the definition of RIF used. A recent evaluation showed that up to 15% of the women undergoing an IVF treatment suffer from RIF which is defined as the failure to obtain a clinical pregnancy after at least three embryo transfer attempts. Recent studies have investigated if and how the vaginal and endometrial microbiome affects endometrial receptivity and reproductive health. Although there is no consensus on the existence of a core uterine microbiome yet, evidence showed that the dominance of *Lactobacillus* spp. in the female reproductive tract is generally associated with eubiosis and improved chances of successful implantation and ongoing pregnancy. Conversely, vaginal and endometrial dysbiosis can cause local inflammation and an increase of pro-inflammatory cytokines compromising the integrity and receptivity of the endometrium mucosa and potentially hampering successful embryonic implantation. This review provides a critical appraisal of the influence of the microbiome on the different parts of the female reproductive tract and its impact on fertility outcomes, focusing on RIF. It seems that RIF as well as RPL are mainly both associated with an increase in microbiome diversity and a loss of *Lactobacillus* dominance in the urogenital system. This presentation provides an updated overview of the vaginal and endometrial bacterial communities and interaction with the local immune system in RIF and RPL. A state of microbiota dysbiosis with overabundance of pathogenic species or absence of *Lactobacillus*-dominated vaginal and endometrial



microbiome might trigger inflammation and hinder the process of embryonic implantation and interfere with early pregnancy.

**Key Words:** Repeated Implantation Failure (RIF), IVF, *Lactobacillus*, Diversity, Dominance

## AN UPDATE OF THE INTERNATIONAL GUIDELINE ON PCOS

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The International evidence-based guidelines address prioritized questions and outcomes and include 254 recommendations and practice points, to promote consistent, evidence-based care and improve the experience and health outcomes in PCOS. The evidence in the assessment and management of PCOS has generally improved in the past 5 years but remains of low to moderate quality. The technical evidence report and analyses (~6000 pages) underpin 77 evidence-based and 54 consensus recommendations, with 123 practice points. Key updates include the following: (1) further refinement of individual diagnostic criteria, a simplified diagnostic algorithm, and inclusion of anti-Müllerian hormone levels as an alternative to ultrasound in adults only; (2) strengthening recognition of broader features of PCOS including metabolic risk factors, cardiovascular disease, sleep apnea, very high prevalence of psychological features, and high risk status for adverse outcomes during pregnancy; (3) emphasizing the poorly recognized, diverse burden of disease and the need for greater healthcare professional education, evidence-based patient information, improved models of care, and shared decision-making to improve patient experience, alongside greater research; (4) maintained emphasis on healthy lifestyle, emotional well-being, and quality of life, with awareness and consideration of weight stigma; and (5) emphasizing evidence-based medical therapy and cheaper and safer fertility management. Overall, recommendations are strengthened and evidence is improved but remains generally low to moderate quality. Significantly greater research is now needed in this neglected, yet common condition. Regional health system variation was considered and acknowledged, with a further process for guideline and translation resource adaptation provided.

**Key Words:** GRADE; assessment; evidence based; guideline; management; polycystic ovary syndrome (PCOS).

## DOES ANTI-MÜLLERIAN HORMONE PREDICT MENOPAUSE

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A recent meta-analysis identified a total of 3207 studies reporting on AMH serum levels and age at menopause. Forty-one, including 28 858 women, were included in the meta-analysis. Of the three studies that assessed AMH for the diagnosis of menopause, one showed that undetectable AMH had equivalent diagnostic accuracy to elevated FSH. No study assessed whether AMH could be used to shorten the 12 months of amenorrhea required for a formal diagnosis of menopause. Studies assessing AMH with the onset of menopause generally indicated that lower age-specific AMH concentrations are associated with an earlier age at menopause. However, AMH alone could not be used to predict age at menopause with precision. The predicted estimates and confidence intervals were ranging from 2 to 12 years for women aged less than 40 years. The predictive value of AMH increased with increasing age, as the interval of prediction e.g. the time to menopause shortened. There is evidence that undetectable, or extremely low AMH, may aid early diagnosis of POI in young women with a family history of POI or those presenting with primary or secondary amenorrhea. AMH might be used to study the age of menopause in population studies. The increased sensitivity of current AMH assays provides improved accuracy for the prediction of imminent menopause. Prediction of age at menopause remains imprecise when it is not imminent, although the finding of very low AMH values in young women is both of clinical value in indicating an increased risk of developing POI and may facilitate timely diagnosis.

**Keywords:** AMH; anti-Müllerian hormone; Fertility; Menopause; Ovarian Reserve; Premature Ovarian Insufficiency (POI).

## ENDOMETRIOSIS AND SEXUALITY

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Deep dyspareunia is one of the most suggestive symptoms of endometriosis with a prevalence ranging from 32 to 70% (De Graaf et al., 2013), and can occur as one of the first symptoms. Data 2008 from the analysis of the "UK General Practice Research" Database on 5540 women showed that dyspareunia had an adjusted OR of 9.4 (8.0-11.1) in predicting the subsequent diagnosis of endometriosis, suggesting its very high predictive value (Ballard et al., 2008). Several mechanisms contribute to sexual pain in endometriosis, including pelvic floor dysfunction, characterized by hyperactivity and hypercontractility of the muscles, and gut and vaginal dysbiosis, associated with chronic abdominal and pelvic pain. These conditions create a vicious circle of poor peripheral arousal, insufficient lubrication, reduced ability to reach orgasm with penetrative intercourse, decreased libido, and profound dissatisfaction, with a strong negative impact on the quality of personal and couple life. Two meta-analyses published respectively in 2020 (Pérez-López et al., 2020) and 2022 (Shi et al., 2022) demonstrated that endometriosis is associated with a more than doubled risk (OR 2.38) of developing sexual dysfunction, defined through the pathological cut-off of the Female Sexual Function Index (FSFI) questionnaire ( $\geq 26.55$ ). The 5 subdomains of the FSFI (desire, arousal, lubrication, orgasm, satisfaction and pain) were also significantly altered in patients compared to controls. In the second part of the natural history of Endometriosis, we frequently witness the appearance of associated painful symptoms, Superficial Dyspareunia and Painful Bladder Syndrome/Interstitial Cystitis (Bladder pain syndrome/Interstitial cystitis) (Graziottin & Maseroli, 2022). In the last decade, a third "evil twin" has appeared in this scenario: vulvodynia and associated superficial dyspareunia (Yong et al., 2015; Graziottin & Maseroli, 2022). Endometriosis does not usually cause superficial dyspareunia with a direct effect, with the exception of rare cases of vulvar localization, but rather with an indirect effect: the pain inhibits adequate lubrication, with consequent dryness and vulvovaginal atrophy, formation of microlesions, and development of Genitopelvic pain and penetration disorder. Comorbidity between deep and superficial dyspareunia has been described in 40% of cases (Yong et al., 2015). In conclusion, it appears that the negative impact of endometriosis on female sexual health is pervasive and concerns, in addition to pain, desire, subjective arousal, genital arousal, lubrication, orgasmic function, and ultimately sexual satisfaction. Therefore, it is essential, both in studies and in clinical practice, to use validated multidimensional tools to assess sexual health, when endometriosis is suspected and during follow-up visits.

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## POSTMENOPAUSAL HORMONE TREATMENT AND THE RISK FOR MALIGNANCIES

**Johannes Ott, Austria**

Menopausal hormone therapy (MHT), also known as hormone replacement therapy (HRT) is associated with specific risk constellations. The main risk familiar to patients is breast cancer, but there is also ongoing discussion about ovarian and endometrial cancer. The lecture focuses on the optimal treatment regimen to avoid increased risks for malignant diseases. Low dose estrogen therapy accompanied by natural progesterone or dydrogesterone seems to be the safest regimen from today's perspective. Literature lacks reliable long-term data on the safety of testosterone replacement therapy.





**DEBATE: PATIENTS WITH EARLY MENOPAUSE SHOULD BE TREATED CONTINUOUSLY TO PREVENT CHRONIC DISEASES: FOR****Nick Panay***Consultant Gynaecologist: Queen Charlotte's & Chelsea Hospital  
Professor of Practice: Imperial College London  
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It is recognised that women with Premature Ovarian Insufficiency/Early Menopause (POI/EM) have an increased incidence of cardiovascular, osteoporosis and cerebrovascular disease. The increased risk in POI/EM is due to the prolonged hypoestrogenic state if untreated. Meta-analyses have shown that women with POI who used MHT longer than 10 years had the lowest risk of cardiovascular disease compared to women who did not use MHT.<sup>1</sup> It is difficult to fully assess the relationship of cardiovascular risk in POI/EM with MHT in cohort studies because accurate data are not always available regarding the i) timing of initiation, ii) dosage, iii) type and iv) duration of use of MHT. A long term prospective randomised trial would be ideal, but in the absence of this, prospectively collated global registry data should provide useful information. Younger age of menopause is also associated with an increased risk of many other serious conditions. A study in 11 258 Australian women showed that women with POI had almost three times higher odds of developing multimorbidity in their 60s, adjusted for a number of chronic conditions at baseline and related risk factors.<sup>2</sup> The 11 conditions studied included osteoporosis, arthritis, depression, diabetes, hypertension and asthma. The growing importance of studies which demonstrate the risks of POI/EM has been illustrated by a meta-analysis examining the global prevalence of POI/EM.<sup>3</sup> This study demonstrated that the prevalence of spontaneous POI was considerably higher (3.7%) than the often-quoted prevalence of POI (1%), particularly in United Nations medium and low human development index countries. It is therefore a public health priority globally that healthcare professionals are given adequate education and resources to identify women at risk at an early stage. Effective measures such as optimising lifestyle, diet and exercise and MHT will have the greatest impact if instituted at the earliest stage possible, and if deployed continuously throughout a woman's post reproductive life.

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**MANAGING PERIMENOPAUSAL PATIENTS WITH SEVERE PREMENSTRUAL DISORDERS****Nick Panay***Consultant Gynaecologist: Queen Charlotte's & Chelsea Hospital  
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Many women experience mild physical and emotional PMS symptoms which are not particularly troublesome. However, when severe these symptoms can lead to a breakdown in interpersonal relationships and interference with normal activities. These symptoms can be particularly troublesome in the late reproductive and perimenopause years due to increasing hormonal fluctuations which can trigger symptoms in genetically predisposed, hormonally vulnerable, women. When PMS is severe, it may satisfy the American Psychiatric Association DSM-V criteria for premenstrual dysphoric disorder (PMDD). The International Society for Premenstrual Disorders (ISPM) has made recommendations for a new classification with core (typical, pure or reference disorders associated with spontaneous ovulatory menstrual cycles) and variant premenstrual disorders (such as symptoms of an underlying psychological or somatic disorder significantly worsening premenstrually). PMS/PMDD continues to be poorly understood and in many cases inadequately managed. It can be the cause of considerable morbidity and at time even mortality. It is imperative that a consensus on definition is reached globally and that properly conducted research continues to be funded. It is through this work that clinicians will be able to practice in an evidence-based way to effectively treat this condition. The alternatives to traditional therapy, such as agnus castus, red clover and St John's Wort, are showing promising results in randomized studies but more data are needed. Data on natural progesterone remain

controversial, although many women derive considerable benefit from this preparation. Progestogens should not be used as they are good at reproducing the symptoms of PMS/PMDD! The more established therapies for which randomized controlled data exist are the combined "fourth" generation pills (e.g. the 24/4 or flexible regimen 20mcg ethinylestradiol / 3mg drospirenone), transdermal estradiol, selective serotonin re-uptake inhibitors (not ideal in perimenopause) and the GnRH analogues with add back HRT. Hysterectomy with BSO and adequate HRT remains an important option for severely afflicted women whose family is complete and have not responded to other therapies. The presentation will use the UK RCOG Green Top Guideline No 48 on the Management of Premenstrual Syndrome as its basis <https://www.rcog.org.uk/guidance/browse-all-guidance/green-top-guidelines/premenstrual-syndrome-management-green-top-guideline-no-48/>. Support for patients and health professionals is available from the National Association for Premenstrual Syndromes <https://www.pms.org.uk/> and the International Association for Premenstrual Disorders <https://iapmd.org>.

**The ESHRE, ASRM, CREWHIRL and IMS update of ESHRE Guidelines for Management of POI****Nick Panay***Consultant Gynaecologist: Queen Charlotte's & Chelsea Hospital  
Professor of Practice: Imperial College London  
President: International Menopause Society*

The presentation will use as its basis the European Society of Human Reproduction and Embryology 2015 POI guidelines which are currently being updated and the International Menopause Society (IMS) 2020 White paper on POI.

A summary of key POI guidelines is shown below.

**Demographics / etiology / pathophysiology of POI**

- Terminology and diagnostic criteria should be standardised to avoid confusion about diagnosis.
- Full understanding of etiology / pathophysiology will facilitate efficient diagnosis and management e.g., global registry / biobank.
- Global, ethnic and cultural variations in prevalence, presentation require clarification.

**Diagnosis of POI**

- Personal e.g., menstrual health and family history are very important in making the diagnosis.
- The diagnosis should not be made on the basis of only one FSH level.
- AMH testing is only required if there is diagnostic uncertainty.
- A baseline DEXA scan should be offered to all women diagnosed with POI.

**Management of POI**

- Management of women with POI should ideally be multidisciplinary and include patient advocacy groups.
- Lifestyle, diet exercise should be optimised.
- Hormone replacement at least until average age of menopause should be first line treatment unless contraindicated or if rejected by the woman after careful counselling.
- There are very few data for the benefits and risks of CAMS and non-hormonal bone sparing agents in POI.
- Replacement can be with the COC initially if contraception is required or because of personal preference, but in the long-term HT is recommended to optimise bone and metabolic health.

**Key Research priorities in POI**

- Global POI registry collaboration / expansion / biobanking. e.g. [https:// poiregistry.net](https://poiregistry.net)
- Further determination of etiology of POI, especially genetic.
- Discovery of reliable biomarkers for predicting POI.
- Impact of hormonal interventions e.g. HT v COC, types of HT / COC on
  - Quality of Life
  - Psychological/psychosexual aspects
  - Bone, cardiovascular and cognitive health.
- Role of androgen supplementation for QOL, cardiovascular, bone, cognitive health and fertility.
- Differential impact and management of iatrogenic and spontaneous POI.



- POI as part of an aging syndrome v aging following POI due to hormone deficiency.
- Confirmation of efficacy and safety of fertility enhancing techniques.
- Further clarification of role and division potential of human oogonial stem cells.

## OFFSPRING OUTCOMES – ICSI VS. IVF

Anja Pinborg, Denmark

The comparison of outcomes following ICSI and IVF pregnancies is a topic of considerable interest. Most large cohort studies generally indicate similar or even lower risks of PTB, LBW, and peri/neonatal mortality in singletons born after ICSI compared to IVF.<sup>1,2</sup> The meta-analysis based on five cohort studies showed a lower risk of PTB in ICSI vs. IVF pregnancies (both fresh and FET) with an adjusted odds ratio (aOR) of 0.80 (95% CI 0.69–0.93) (Pinborg et al., 2013). The cause for the better perinatal outcomes after ICSI is most probably the effect of healthier mothers with no reproductive diseases. This is supported by a large cohort study based on the national HFEA data in the UK, where female causes of infertility was associated with a higher risk of preterm birth and low birth weight in singletons born after IVF/ICSI.<sup>3</sup> Whether the risk of congenital malformations differs between ICSI and IVF offspring remains the subject of ongoing debate. A systematic review and meta-analysis on 19 studies found no increased risk of chromosome abnormalities in the adjusted data when comparing ICSI to either standard IVF (aOR 0.75 (95% CI 0.41–1.38)) or natural conception (aOR 1.29 (95% CI 0.69–2.43)).<sup>4</sup> In contrast, a recent register based Nordic study by the CoNARTS group in 86,862 live-born singletons showed a slight but significantly higher risk of major congenital malformations, especially contributed to respiratory and chromosomal malformations, among fresh ICSI compared to fresh IVF (aOR 1.07 (95% CI 1.01–1.14)).<sup>5</sup> Which is in accordance with a previous South Australian cohort study showing an aOR of 1.57 (95% CI, 1.30 to 1.90) in ICSI pregnancies compared with pregnancies with no use of assisted reproductive technology (ART), the similar adjusted risk for IVF vs. non-ART was 1.07 (95% CI, 0.90 to 1.26).<sup>6</sup> The Danish cohort study revealed no difference when comparing ICSI used for male infertility factor and ICSI for other indications, except for the risk of hypospadias where the risk was significantly higher when male factor infertility was present. Furthermore, decreased semen quality and quantity has been observed in young adults conceived by ICSI due to male factor infertility suggesting that ICSI may cause transgenerational transmission of impaired spermatogenesis.<sup>7</sup>

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## HEALTH OF CHILDREN BORN AFTER FROZEN EMBRYO TRANSFER (FET)

Anja Pinborg, Denmark

Initial systematic reviews and meta-analyses yielded promising results for FET pregnancies with a reduced risk of PTB, LBW, and SGA in FET offspring, while the risks of stillbirth and perinatal deaths were comparable to those after fresh cycles.<sup>1-3</sup> However, a Finnish cohort study in 2010, involving 2,293 FET children, revealed a higher risk of large-for-gestational age (LGA) in FET children.<sup>4</sup> A recent systematic review and meta-analysis encompassing 26 studies offered a more comprehensive understanding of FET outcomes, where pooled risk estimates confirmed a lower relative risk of PTB, LBW, and SGA in pregnancies following FET compared to fresh cycles.<sup>5</sup> Conversely, the risk of LGA offspring and a BW exceeding 4,500 g as well as hypertensive disorders of pregnancy (HDP) was increased in FET pregnancies. In accordance, the most recent Cochrane review on elective FET versus fresh embryo transfer found increased risk of HDP (OR 2.15, 95% CI 1.42 to 3.25), LGA offspring (OR 1.96, 95% CI 1.51 to 2.55) and a higher BW (mean difference 127 g, 95% CI 77.1 to 177.8) of children born following the 'freeze all' strategy.<sup>6</sup> Additionally, convincing data have shown that programmed FET (PC-FET) cycles with endometrial preparation with sequential oestradiol and progesterone without the creation of a corpus luteum in comparison with natural cycle FET (NC-FET) contribute to a higher risk of HDP, postpartum haemorrhage and overgrowth in FET singletons.<sup>7</sup> In agreement, a recent systematic review showed significantly decreased risk of HDP (aOR 0.52, 95% CI 0.47-0.52), preeclampsia (aOR 0.43, 95% CI 0.37-0.51), LGA (aOR 0.87, 95% CI 0.80-0.93) and postpartum haemorrhage (0.44, 95% CI 0.36-0.47) in the NC-FET group compared to PC-FET.<sup>8</sup> In ART pregnancies the absence of a corpus luteum lead to undetectable levels of relaxin, which is a potent vasodilator. This may be a plausible explanation for the adverse outcomes observed in pregnancies without a corpus luteum.<sup>9-10</sup> Studies on long-term outcomes in FET are scarce, recently the Danish cohort study "Health in Children conceived after ART" (HiCART) revealed no differences in cardiovascular function and BMI among children born after FET, fresh embryo transfer and spontaneous conception with 200 children in each group equally distributed between boys and girls.<sup>11-12</sup> A large Nordic register study based on the Committee of Nordic ART and Safety (CoNARTaS) database has shown a significantly increased risk of cancer in children born after FET compared to both fresh embryo transfer adjusted hazard ratio (aHR) 1.59 (95%CI 1.15-2.20) and spontaneous conception aHR 1.65 (95%CI 1.24-2.19)<sup>13</sup> The long-term health of children born after FET in particular cardiovascular function and cancer needs further attention.

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## DEBATE: DO WE NEED PGT-A FOR DRAWING A DIAGNOSIS OF RIF

Paul Pirtea

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### Probably we should use PGT-a for drawing a diagnosis of RIF

It is reasonable to state that implantation failures, let alone RIF, can stem from either an embryo or endometrial cause. Hence, for narrowing our research, we focused on studying implantations of euploid embryos transferred in a standardized E2 and IM progesterone – HRT – replacement cycle (1-3). The former was meant to limit embryo factors of ART failure, such as notably, the age-related decrease in embryo euploidy rates. The latter was chosen because HRT regimens using E2 and IM progesterone has been the long-lasting reference for reliably priming endometrial receptivity (1-3). Therefore PGT-a should be used for determining RIF, in order to control for embryonic competence, even more so in a research setting. In our first study, we showed that, if it exists, RIF is a very rare occurrence, affecting only  $\leq 5\%$  of women whose uterus is normal, and the endometrium is  $\geq 7$  mm (1). Subsequently, a workshop mustering international experts from both the US and Europe in 2022 – the ‘Lugano Workshop’ – to further study RIF (4). The conclusions of this workshop were outlined in the “Lugano Paper”(4). It confirmed that an extensive review of available data indicate that RIF may exist, but is extremely rare, only affecting  $\leq 5\%$  of ART patients whose uterus is morphologically normal (4). Recent data presented confirmed that endometrial receptivity is amazingly resilient in women whose uterus is morphologically normal. This therefore obliges us to reconsider that other possible causes of repeated ART failures may exist, such as possibly, recurrent aneuploidy (RA). If endometrial receptivity in women whose uterus is morphologically normal is so resilient that RIF only exist in  $\leq 5\%$  or less of cases following euploid FET in E2 and progesterone cycles, we must query about other possible causes of ART failure. Specifically, we must ask ourselves whether some couples might never have euploid embryos. This condition of possible maternal or paternal origin would consist in recurrent aneuploidy (RA). RA would evidently cause repeated ART failures, but might be wrongly accounted as RIF, if embryos are not genetically screened. Therefore, this is yet another reasonable indication for PGT-a in order to determine a diagnosis of RIF.

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## MECHANISMS OF EMBRYO FAILURE AT IMPLANTATION

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Human reproduction is very inefficient. It is estimated that only 30% of all conceptions make it to a live birth. A particularly critical period in development is the implantation of the embryo into the maternal uterus. Failure to develop at the time of implantation accounts for approximately 30% of all pregnancy losses, but the reasons behind remain poorly understood. To tackle this issue, we established an *in vitro* system to culture human embryos beyond implantation, in the absence of maternal tissues. Using this methodology, we have characterised at the molecular

and cellular level embryos cultured to post-implantation stages. This has revealed the first signs of symmetry breaking and anterior-posterior axis specification. In addition, we have demonstrated that our culture methodology can be used to study developmental competence by focusing on aneuploid human embryos. Aneuploidy accounts for 50-75% of all spontaneous miscarriages, but the developmental consequences of specific chromosomal alterations remain poorly understood. We show that while trisomy 15 and trisomy 21 embryos develop similarly to euploid embryos, monosomy 21 embryos exhibit high rates of developmental arrest, and trisomy 16 embryos display a hypo-proliferation of the trophoblast. Moreover, we identify cases of mosaicism in embryos diagnosed as full aneuploid by pre-implantation genetic testing. Globally, our methodology provides a unique opportunity to dissect the mechanisms of embryo failure at implantation, with a specific focus on the contribution of aneuploidy.

## ENDOMETRIAL ADENOCARCINOMA AND INTRAUTERINE SURGERY: WHEN AND HOW

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The most prevalent gynecologic cancer in Western nations is endometrial cancer (EC), and its prevalence has been progressively rising in Eastern nations. Endometrioid histotype, isolated, well-differentiated grade 1 (G1) lesion, lack of or limited myometrial invasion, and type 1 EC expressing high levels of estrogen receptor-alpha (ER-alpha) and progesterone receptor (PR) are typical prognostic characteristics of EC in women of reproductive age. About 80% of individuals under the age of 40 have stage I disease, while between 50% and 90% have grade I disease. Depending on the stage and grade of the disease, surgery with a total hysterectomy, bilateral salpingo-oophorectomy (BSO), and perhaps pelvic and para-aortic lymphadenectomy is advised for patients who have been diagnosed with EC. Because more and more women in reproductive age are deferring motherhood, it's critical to provide them a fertility-preserving alternative alongside the appropriate cancer treatment. As Kistner demonstrated in 1959, fertility-sparing treatment (FST) is not a new strategy to avoid radical surgery. High-dose oral progestins like medroxyprogesterone acetate (MPA), megestrol acetate (MA), or local high-dose progestins such levonorgestrel-releasing intrauterine device (LNG-IUD) are currently the most often used medical treatments. Gonadotropin-releasing hormone (GnRH) agonist, hydroxyprogesterone, oral contraceptives, tamoxifen, and letrozole are examples of additional hormonal therapies that have been employed. There are several reports of surgical management as well. The results of the literature on hysteroscopic resection in conjunction with progestin appear to imply an extra benefit in terms of complete response (CR) rate and incidence of successful pregnancy. The CR was defined as the absence of any hyperplastic or neoplastic lesion. The recent publication by Fan et al. of 2017 with a CR of 95.3%, a pregnancy rate of 47.8%, and a recurrence rate of 14.1% validated the efficacy of the hysteroscopic resection procedure. With the exception of one patient's liver malfunction, no major toxic side effects occurred. Intrauterine adhesion is the primary long-term complication of operational hysteroscopic procedures, with an incidence that varies depending on the type and extent of surgery, the surgical rationale, and the patient's age. Adding endometrial resection to the hormonal treatment enhances the risk of intrauterine adhesion. The endometrial resection must not be too deep in the portion of the cavity that appears to be normal (blind biopsies), and a complete resection must be restricted to the macroscopically abnormal endometrium in order to preserve the greatest amount of normal endometrium necessary to permit pregnancy.

## ANALYSES OF CGM DATA AND HOW TO ASSESS GLUCOSE VARIABILITY

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Many studies have recently shown that continuous glucose monitoring (CGM) may be beneficial for pregnant women with gestational diabetes (GDM) or with diabetes before pregnancy, both type 1 and type 2 (T1DM, T2DM, respectively). In fact, CGM allows frequent





("continuous") monitoring of glucose levels in subcutaneous tissue fluids, this reflecting the blood glucose concentration. CGM data help clinicians to adjust the patient's treatment, possibly including tailored titration of glucose-lowering medications, to gain optimal blood glucose control as well as improved pregnancy outcomes. With regard to patients with preexisting T1DM, they are at high risk of developing severe hypoglycemia, which can have serious adverse effects on both mother and fetus. CGM allows detection of glycemic fluctuations that might have been unnoticed with intermittent blood glucose monitoring. An international study named CONCEPTT divided a cohort of women with T1DM into two groups, one monitored only with capillary blood glucose measurement, and the other with added CGM; it was observed that the group undergoing CGM had several better CGM metrics, especially better time in range, TIR (i.e., time interval of blood glucose in good range), as well as lower time above and below range (TAR and TBR, respectively). On the other side, some studies found that CGM can reduce the incidence of gestational hypertension and preeclampsia in patients with preexisting T1DM, though other studies showed different findings about the impact of CGM on preeclampsia (thus, this aspect remains controversial). In addition, several studies showed that CGM reduces adverse perinatal outcomes. Indeed, CGM was found associated to improved newborn health outcomes, including reduced incidence of large-for-gestational-age infants, fewer neonatal intensive care inpatients, decreased occurrence of neonatal hypoglycemia, and shortened hospitalization period. However, there are issues related to glycemic fluctuations in pregnancy that need to be investigated further. In fact, it is well known that, in general, glycemic levels are regulated by several factors, but there are some that can be assumed as the basic ones, those being the insulin resistance (which is a common trait of pregnancy even when not affected by diabetes), pancreatic beta-cell function, and hepatic glucose production. However, in pregnant women with GDM or preexisting diabetes, very few studies investigated the association of those crucial factors in glucose homeostasis and the glycemic levels (especially, the glycemic fluctuations as assessed by CGM). Thus, in our opinion there is room for future relevant investigations exploiting CGM data in pregnancies complicated by diabetes.

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## **IS ENDOMETRIOSIS ASSOCIATED WITH OVARIAN CANCER AND ARGUMENTS FOR SURGERY IN REPRODUCTIVE AGE**

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Endometriosis-associated ovarian cancer (EAOC) is an evolving clinical entity believed to have developed from ovarian endometriosis. Continuous efforts are nowadays invested in exploring its pathogenesis and causality. Since endometrioma is a common sub-type of the disease, malignant transformation to EAOC during reproductive age may cause much concern and affect its management. My talk will discuss the arguments for endometriotic cystectomy during the reproductive age. In addition, it will explore whether the risk of (EAOC) should be an additional argument for surgery at reproductive age. The summary relative risk of developing EAOC in women with endometriosis is 1.93-fold compared to women without endometriosis, but its lifetime risk is relatively low, equivalent to 2.1%. EAOC is an age-dependent disease with a mean age of  $51.6 \pm 3.2$  years at diagnosis; 30.7% of patients are below 50, presumably premenopausal. Only 2.10% and 0.02% of cases are below 45 and 40 years, apparently in reproductive age. The evidence is reassuring and implies that managing an intact endometrioma should not be altered in most women of reproductive age. Particular attention should be focused on sporadic cases with an enlarging endometrioma, atypical findings on transvaginal ultrasound (TVUS), and characteristic magnetic resonance imaging (MRI) features.



## INNOVATION IN REPRODUCTIVE TECHNOLOGY - SHOWCASE SESSION FOR START-UPS

### HYPERSPERM, A NOVEL APPROACH TO IMPROVE EMBRYO DEVELOPMENT IN ART

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**Introduction:** One of the main issues of in vitro fertilization (IVF) treatments is their inefficiency, just ~30% success rate overall, often requiring costly and painful repetitions to achieve a live birth. This drives prohibitive costs and crushing access barriers for most patients worldwide. Fecundis was founded with the mission to improve IVF by developing novel treatments based on a deeper understanding of the molecular and cellular mechanisms of reproduction. Fecundis first product, HyperSperm, is a sperm activator which increases sperm capacitation. Scientists at Fecundis have shown that the way sperm are handled before insemination has long range effects on embryo development and can be manipulated to provide more high-quality embryos from each patient. **Materials & Methods:** HyperSperm is composed by 3 proprietary media that are used sequentially to process the semen sample for IVF. Preclinical studies of HyperSperm in mice were carried out in hybrid (BABL/c x C57BL/6) F1. Female mice were superovulated according to standard protocols. Egg-cumulus complexes were collected 13–14h after hCG and pooled. Mouse sperm were recovered by incising and incubating the cauda epididymis in TYH-HEPES for 15 min at 37°C. Sperm were either capacitated in TYH-HEPES or treated with HyperSperm, as appropriate. Cumulus-intact eggs were inseminated with  $0.5 \times 10^6$  cell/ml spermatozoa for 4 h at 37°C. Embryos were cultured in KSOM and development was evaluated 3 days later and the number of embryos at the blastocyst stage was recorded. Embryos were either transferred to pseudo-pregnant females to test implantation potential and reproductive outcomes in offspring. For initial clinical validation, 10 couples undergoing IVF with donated oocytes were included in a human trial. Sperm samples were divided into two halves and either processed by swim-up (Control) or treated with HyperSperm. Fourteen cumulus-oocyte complexes were assigned to each patient, 7 in each arm, and inseminated with the corresponding sperm preparation. Embryos were cultured in an Esco Miri time-lapse incubator to blastocyst stage. The primary outcome was blastocyst rate. Secondary outcomes were fertilization rate and developmental morphokinetics. **Results:** In mice, HyperSperm increased both fertilization rate ( $71.9 \pm 6.4\%$  vs  $51.9 \pm 5.5\%$ ;  $p=0.032$ ;  $n=10$  experiments) and blastocyst rate ( $85.1 \pm 5.8\%$  vs  $65.1 \pm 6.2\%$ ;  $p=0.029$ ;  $n=10$  experiments) compared to the control, respectively (Figure 1). Further, implantation tests showed that HyperSperm blastocysts implant at a higher frequency than controls ( $76.0 \pm 11.2\%$  vs  $48.7 \pm 10.3\%$ ;  $p=0.163$ ). Pups born from HyperSperm were all healthy at birth, of normal weight. Mating tests showed that both males and females were fertile. In human, while fertilization rate was similar, the blastocyst rate was significantly higher in the HyperSperm group ( $36/53$ ,  $67.9\%$  vs.  $21/47$ ,  $44.7\%$ ;  $p=0.0159$ , Figure 2). HyperSperm increased blastocyst numbers in 8/10 cases, with an average 1.5 more blastocysts available for each patient. Morphokinetic development of HyperSperm blastocysts was not different from Control ( $p>0.05$ ). **Discussion:** Fecundis's first development, HyperSperm, may have the potential to increase IVF efficiency by increasing the proportion of high-quality, competent blastocysts derived from a treatment, potentially lowering costs and repetitions in IVF. Full sperm capacitation may provide long range effect on embryo development.

### RESEARCH-BASED DATA COLLECTION AND DECISION SUPPORT SYSTEM FOR COS

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**Problem statement:** According to a survey of 966 clinicians and healthcare staff in the UK, clinic personnel spend 16.8h per week on average for documentation during initial patient intake recording patients' information and loading it into the clinic's electronic medical record (EMR) system. At the same time, patients are asked the same questions several times throughout their clinical journey and may feel disconnected and isolated within their clinic. Further, the presence of multiple data entry points increases the chances of errors and inconsistencies in clinical data, with possible effects on treatment outcomes and risk detection. Finally, a more connected and accurate data collection and evaluation system allows for the provision of more

precise and safer care, where medical risks can be identified earlier, and outcome prediction can be shared with clinicians and patients alike, lowering the clinic's operational costs, and improving the patient experience through the clinic journey. Leeaf tackles these issues with a unified, automated data collection and interpretation platform based on published clinical guidelines, artificial intelligence (AI) algorithms, and evidence-based medicine. **Methods:** Leeaf collects data directly from patients through a proprietary application (Leeaf app) which is connected to an EMR (Leeaf Physician Portal) deployed in partner clinics. The patient fills out user-friendly questionnaires related to clinical history and other clinically relevant aspects before visiting the clinic, including external reports such as blood hormonal tests and serological analysis, as directed by the clinic in a customizable and flexible fashion. Drawing from Leeaf's extensive database of more than 400,000 real-life patient data points and using a combination of published literature, society's best practices and guidelines, and in-house medical consensus, clinicians are recommended the most effective clinical actions, and potential risks are flagged in a personalized way for each patient. **Results:** We present a series of modules, each consisting of a set of rules with regard to controlled ovarian stimulation (COS). So far, we have implemented four modules: Facts to Consider, Health Risks, ESHRE Guidelines, and Lifestyle Rules. Some of the personalized recommendations provided to clinicians and patients are flagging patients for OHSS risk before the beginning of treatment and suggesting methods to mitigate this risk through appropriate stimulation protocols, doses, and trigger recommendations. Further, the risk of OHSS, risk of thrombosis, and risk of PCOS are also presented (Table 1). All of the rules go through a rigorous approval process by the medical board before they are released on the platform. Moreover, the implementation allows for custom modifications by the clinician should the need arise. **Conclusion:** Leeaf offers clinicians the option to meet digitally and acquaint themselves quickly with the patient before their visit to the clinic, allowing more time to be spent on establishing a bond and exploring deeper concerns for the patients. Furthermore, the patients' information is smartly processed, and the clinician is notified in advance of relevant risks throughout the treatment process, with evidence-based suggestions on alternative courses of action.

### PREIMPLANTATION DNA METHYLATION SCREENING (PIMS): POTENTIAL BIOMARKER IN ART

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**Problem Statement:** DNA methylation is known to play an important role during embryogenesis. Previous studies revealed that a large proportion of human preimplantation embryos harbor abnormal DNA methylome. Whether DNA methylation patterns affect the clinical outcome after ART remains unknown. **Materials and Methods:** A clinical trial (NCT03642574) of 182 PGTA patients [indications: AMA ( $\geq 38$  yrs), RM with (2miscarriages), RIF (3 IVF attempts) and (d) severe OAT] including 800 blastocysts conducted between 2018-2022. PIMS with WGBS protocol was used to measure whole genome DNA methylation and CNV of TE biopsied samples simultaneously. eSET was performed after PIMS. The primary outcome was the LBR while secondary outcomes included clinical pregnancy and first trimester miscarriage rates of patients with embryos of different DNA methylation patterns. Chromosome copy number was calculated with R package (HMMcopy). Fisher's exact and two-sided t-test were employed to compare clinical outcomes of different mean TE methylation level ( $p<0.05$ ). **Results:** 163 euploid of 800 analyzed embryos were transferred. 57 (31.31%), 13 (7.14%) and 90 (56.25%) patients experienced a pregnancy failure, a pregnancy loss and a live birth respectively. Significant variation of TE-DNA methylation level was observed irrespective of maternal age (38: 120 and  $\geq 38$  years: 40,  $p=0.05$ ). Blastocysts with global methylation level of  $0.26 \pm 0.01$  had the highest LBR (31/43 = 72.1%) and clinical pregnancy (33/43 = 76.7%), albeit the lowest miscarriage rate (2/33 = 6.1%). Notably, the embryos with DNA methylation levels between 0.25-0.27 produced significantly higher LBR compared to embryos with methylation levels of 1.13–5.95 ( $p=0.02$ ) while the miscarriage rate had an opposite trend 0.04–1.75 ( $p=0.22$ ). Some embryos had abnormal methylation states in germline ICRs. **Discussion:** DNA methylome analysis of preimplantation embryos could be a potential biomarker to prioritize blastocysts for transfer to increase LB and reduce the birth defect rate of imprinting gene disorders after ART although PIMS cannot cover all the ICRs.

**Study funding/competing interest(s):** The authors claim competing interest of this study.



**Abbreviations:** [ART-assisted reproductive technology, PIMS-preimplantation DNA methylation screening, PGTA-preimplantation genetic testing for aneuploidy, eSET-elective single embryo transfer, CNV-copy number variant, TE-trophoblast, WGBS-whole genome bisulfite sequencing, LBR-live birth rate, AMA-advanced maternal age, RM-recurrent miscarriage, RIF-repeated implantation failure, OAT-oligoasthenoteratozoospermia, ICRs-imprinting control regions]

## A DEEP LEARNING MODEL (DLM) TO PREDICT BLASTOCYST DEVELOPMENT FROM METAPHASE II (MII) OOCYTES

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**Problem Statement:** Unlike sperm and embryos, establishing a standardized non-invasive laboratory assessment for oocytes has been challenging due to the absence of visual markers of quality. Patient age has been utilized as a proxy for oocyte quality but cannot account for deviations within oocyte cohorts or between IVF cycles. Therefore, to detect patterns imperceptible to the human eye, a DLM was applied to discern oocyte quality by its potential of developing into a blastocyst. **Methods:** A dataset of 37,133 static images of MII oocytes denuded for IVF-ICSI cycles, with associated reproductive outcomes, was used to develop the DLM. 29,326 and 7,807 images were allocated into training and test sets, respectively. Performance on a new, external dataset comprising of 12,371 images was used to further validate the model. Performance of the model was evaluated using area under the curve (AUC), accuracy, specificity, and sensitivity. Blastocyst probabilities generated by the model were converted nonlinearly into scores (0-10) for simpler interpretation. Scores were assessed for correlation to blastocyst development and quality. To additionally evaluate clinical relevance, the model's predictive ability was compared to a predictive model based on the current standard of care (age at oocyte retrieval) and to manual assessment by embryologists (assigning scores 0-10 based on visible dysmorphisms). Moreover, multiple applications of oocyte assessment were explored: sorting by oocyte quality for group culture methods, applicability to donor population, and analysis of how clinical factors (e.g., stimulation protocol) impact quality. **Results:** The DLM achieved similar AUC, accuracy, specificity, and sensitivity during model development and external testing [0.64, 0.60, 0.55, 0.65; 0.63, 0.58, 0.57, 0.59, respectively]. When probabilities are converted to scores, higher oocyte scores correlate with both higher blastocyst development and quality. The DLM additionally demonstrates greater relevance with a more balanced distribution of scores than the embryologists' manually assigned scores, which skew high due to the rarity of dysmorphisms. Despite the relevance of age at a patient-population level, a predictive model for blastocyst development built on age alone displayed an AUC of 0.5, similar to chance. Thus, the DLM was superior for investigating a range of applications. In embryo group culture, oocytes were sorted into dishes based on score (Group A: 0-2.5, B: 2.6-5.0, C: 5.1-7.5, D: 7.6-10). Subsequent blastocyst rates exhibited a stepwise increase with significant differences between groups. Applicability to the oocyte donor population was assessed as a preliminary analysis for further investigation into donor oocyte distribution. Donor oocytes that successfully developed into a blastocyst had a significantly higher mean score than those that did not. Finally, it was demonstrated that oocytes matured using a GnRH-antagonist protocol tended towards high quality compared to the GnRH-agonist protocol (even when stratified by age) and as confirmed by higher blastocyst rates. **Conclusions:** A DLM is capable of non-invasively evaluating oocyte quality, filling a gap in standard practice. By displaying good performance across new and diverse datasets, the DLM shows versatility in its clinical applications (group culture, donor oocytes, stimulation protocols) and affords novel insights.

**Disclosure:** Authors are employees of Future Fertility.

## ORAL PRESENTATION ABSTRACTS

### ORAL PRESENTATIONS 1 - GYNECOLOGY

#### VAGINAL SYNECHIAE PRESENTING AS PRIMARY INFERTILITY: A CASE REPORT

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**Problem statement:** This is a case of a 29-year-old nulligravid who presented with primary infertility, complaints of intermenstrual spotting and dyspareunia. On transvaginal ultrasound, a hypoechoic band with

a small opening was noted at the lower third of the vagina 1.3 cm away from the hymenal ring. This hypoechoic band was considered a vaginal synechiae probably secondary to genital tract injury accrued from a vehicular accident. **Methods:** Ultrasound-guided lysis of the vaginal synechiae was done to restore normal anatomy and postoperative insertion of vaginal dilators to prevent recurrence of synechiae and maintain the caliber of the vagina. **Results:** The patient was able to resume sexual activities with no complaints and had regular menses. She has then conceived ten months after the procedure. **Conclusion:** This case highlights the importance of careful evaluation of all primary infertile young couples, because an undocumented acquired, rare and asymptomatic reproductive tract defect could underlie the infertility necessitating surgical intervention.



Figure 4. Vaginal examination revealing fibrosis of the lower third of the vagina with a 0.2 cm opening (→)

#### MULLERIAN DUCT APLASIA – RENAL AGENESIS – CERVICOTHORACIC SOMITE DYSPLASIA (MURCS) ASSOCIATION WITH KLIPPEL FEIL SYNDROME (KFS): A CASE REPORT

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**Introduction:** Mullerian duct aplasia – renal agenesis – cervicothoracic somite dysplasia (MURCS) association and Klippel Feil Syndrome (KFS) are two rare developmental disorders with prevalence rates of 0.002% and 1.7-2%, respectively. **Objective:** The objective of this case report is to discuss the approach to the diagnosis and management of two rare congenital disorders presenting in one patient. **Case Presentation:** A 29-year-old presented with progressive dysmenorrhea and primary infertility. The patient has short stature, webbed neck, and shoulder asymmetry. On pelvic examination, a single cervix was appreciated with a small uterus and a 5 x 5 x 4 centimeter left adnexal mass. Imaging showed a unicornuate uterus with functioning rudimentary horn. The patient underwent laparoscopic excision of functioning distal uterine remnant to remove the cause of dysmenorrhea. After treatment care included counseling regarding plan for pregnancy. **Discussion:** The clinical presentation of MURCS is usually primary amenorrhea from Mullerian agenesis. In contrast, our index case had regular menstruation from a hypoplastic unicornuate uterus and dysmenorrhea from a functioning distal uterine remnant. Also, she presented with the triad of limited neck motion, short neck and low hairline, which is consistent with KFS. The diagnosis of these disorders are based on clinical presentation, imaging and karyotyping. These syndromes have favorable prognosis with option to observe postoperatively. Pregnancy may be possible with a hypoplastic uterus but with higher risk of miscarriage and preterm birth.

#### REDUCED BLEEDING FOLLOWING NON-ABLATIVE THERMAL ND: YAG LASER TREATMENT OF HEAVY MENSTRUAL BLEEDING IN PERIMENOPAUSE

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**Problem statement:** Heavy menstrual bleeding (HMB) is a common symptom of conditions leading to abnormal uterine bleeding (AUB). Several non-invasive treatments have been developed, but they still struggle with lower efficacy than surgical treatments. The aim of our study was to evaluate the efficacy and safety of non-ablative thermal laser treatment of the endometrium for the treatment of heavy menstrual bleeding in perimenopause. **Methods:** Placebo-controlled study of perimenopausal women with HMB randomized to either the





active group of patients treated with a 1064 nm Nd:YAG laser non-ablative mode (10 W, 90 Hz, 0.6 ms) or the placebo group receiving blinded treatment. An optical fiber (Radial Emission fiber 600, id Consulting, Switzerland) was used for intrauterine treatment. All patients were followed for 6 months. The primary efficacy endpoint was the absolute change in menstrual bleeding from baseline to 6 months after treatment, measuring the weight of sanitary pads. In addition, endometrial thickness was measured by transvaginal ultrasonography. Safety outcomes included the frequency and characteristics of adverse events (AEs). **Results:** Preliminary screening included 6 perimenopausal women aged 44 to 52 years who had HMB. Two patients were excluded. In two patients in the active group, blood loss decreased from 128-200 g at baseline to 20-50 g after 1 month and remained below 50 g throughout 6 months. Endometrial thickness in the luteal phase had decreased to less than 5 mm in both patients 3-6 months after treatment. Two patients in the control group had a pad weight 150-200 g at baseline and reported an improvement in bleeding 1 month after treatment, but returned back to baseline 2 months after treatment. Endometrial thickness in the luteal phase averaged 8-13 mm. Monitored AEs included abdominal pain and light bleeding, which occurred transitionally and lasted on an average of 2 days. **Conclusion:** Our results suggest that non-ablative thermal Nd:YAG laser treatment of the endometrium is a potential new treatment alternative for patients with heavy perimenopausal bleeding.

**Disclosure of Interest:** None

## INOSITOL THERAPY IN TREATING SUBFERTILE WOMEN AND ADOLESCENT GIRLS WITH PCOS

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**Problem statement:** PCOS is not merely a common gynaecological and endocrinological disorder affecting 5 - 10% of women in their reproductive age group but it is also very much prevalent in adolescent girls and can be seen in perimenopausal women. Although hyperandrogenism and infertility that PCOS causes are distressing to young women, its metabolic sequelae plaque the individual in terms of morbidity and mortality. No treatment regime with insulin sensitizer like metformin, o/c pills, ovulation induction, or anti-androgens like flutamide are satisfactory due to their limitations. **Method:** A total of 407 cases diagnosed with PCOS were recruited from different gynaecologists after informed consent and ethics approval. Diagnosis of PCOS was made by using the Rotterdam criteria 2003 (RC). There are 4 PCOS phenotypes used in diagnosing criteria, hyperandrogenism, oligo anovulation, and polycystic ovary. MI /DCI are inositol isomers that are abundant in ovaries and follicular fluids and have distinct roles in insulin signaling and follicular development. In this study myoinositol 4000mg and 4 mg of folic acid were used for six months in treating adolescent girls and women of childbearing age group, in both lean and obese women. **Results:** In total 35 women conceived out of 200 women of childbearing age and the pregnancy rate is 15.1% which is at par. 147 women experienced a significant improvement in their menstrual cycles. Out of 207 adolescent girls 164 experienced regular cycles, improvement in skin conditions like acne and hirsutism, BMI, RBS, and fasting insulin levels following MI treatment. No significant adverse effects of MI were reported except 4 cases of flatulence and 3 cases of nausea. **Conclusion:** Inositol can be used as a safe and alternative approach in the treatment of sub fertile women and adolescents with PCOS.

### Abbreviations:

1. PCOS : Polycystic Ovarian Syndrome
2. MI : Myo Inositol
3. DCI : Di Crino Inositol
4. RBS : Random Blood Sugar
5. BMI : Body Mass Index

**Disclosure of interest:** There is no disclosure of interest

## VAGINISMUS AND INFERTILITY: WHY IMPOSE PENETRATIVE INTERCOURSE?

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**Problem statement:** sexual dysfunction could contribute up to 5% of couple infertility, association between infertility and vaginismus is well acknowledged. Is it still legitimate to impose to couples penetrative intercourses to obtain pregnancy, especially when the woman's body refuses vaginal sex? Is it still legitimate to represent vaginal penetration as normal and desirable, even when bodies say no? Couples can obtain sexual satisfaction in other ways and other practices. Must we move our Cultures towards sexual scripts respectful of differences? Is vaginal penetration really mandatory to

obtain pregnancy or sexual pleasure? Intravaginal insemination can be a simply, economical and fast procedure for conception in unconsummated union. **Method:** literature review on Pubmed with the keywords: infertility and vaginismus, unconsummated marriage and pregnancy, infertility and sexual dysfunction. **Result:** vaginismus is always treated by attempts to normalize it in order to achieve penetrative vaginal sexuality. Treatments can be long and costly. In addition, the partner can himself present a sexual dysfunction such as an erectile dysfunction, and may prefer avoid penetrative sexuality and obtain sexual pleasure in another way. **Conclusion:** should we ask ourselves about sexual scripts, sexual pleasure and desire for pregnancy? Is vaginal penetration still desirable to obtain sexual pleasure or pregnancy? Does the conventional treatment of vaginismus improve obstetrical issues? what it really means to force a vagina with vaginal dilators, pelvic exercises, psychotherapy. Must we change our point of view and dissociate sexual pleasure and pregnancy, propose sexual scripts adapted to people and simple and harmless solution to get pregnant. Should we build new representations, new desirable sexual scripts without the vaginal penetration's duty? All couples are different and health care providers have to respect their sexual practices. Pregnancy and sexual pleasure are two different things: people may desire pregnancy and kids without the obligation of vaginal sex. We must say yes to new egalitarian sexual scripts, because sometimes the person with vagina does not want to be penetrated. Intravaginal insemination to obtain pregnancy is easy, costless and harmless compared to vaginismus therapies. We must no longer confuse vaginal penetration, couple sexual pleasure and desire of pregnancy.

## A RARE CASE OF ANGIOMYXOMA OF THE VULVA – A CASE REPORT

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**Problem statement:** Angiomyxoma is a rare, locally invasive, slow-growing mesenchymal tumor occurring usually in women of reproductive age. The tumor is known for multiple local recurrences with a low potential to metastasize. About 350 cases have been documented in the literature so far. **Methods:** We present case of 59-year old woman, para 1 with a swelling on her right labium major for 5 years who presented to the Department of Gynecology and Obstetrics in Cantonal Hospital Zenica due to the acute bleeding from the tumor. **Results:** A 59-year old postmenopausal woman came to the Hospital with acute bleeding from the tumor on her right labium major which was slowly growing for 5 years. Past medical and family history was unremarkable. On general examination, the patient was moderately built and afebrile without anemia, cyanosis, lymphadenopathy, weight loss or any bowel and bladder dysfunction. Local examination showed a well-circumscribed pedunculated polypoidal non-tender, soft and spongy mass measuring 18x15cm with exulcerated area of 3x2cm. A local excision in local anesthesia was performed immediately without complications and bleeding and the specimen was sent to pathological evaluation. The pathology and immunohistochemistry report showed that the tumor was composed of spindle and stellate-shaped cells in a myxoid matrix. Some of the cells had pseudo-inclusions, the tumor was rich in blood vessels and had no mitotic figures. The tumor was positive for estrogen receptors and negative for AE1/AE3, S-100, CD34, SMA, desmin, myogenin and progesterone receptors. These findings were suggestive of deep angioomyxoma of the vulva which was partly exulcerated. **Conclusion:** Angiomyxoma is a rare, locally aggressive neoplasm. It is usually seen among women of reproductive age. However, this case report confirms that, although very uncommon, it can also be seen among postmenopausal women. It can be easily misdiagnosed with other vulvar diseases such as Bartholini's cyst, lipoma, Gartner duct cyst, or sarcoma. It is mandatory to keep in mind angioxyoma when an asymptomatic and slow-growing vulvar mass is detected in women, especially in the reproductive age. Due to the local recurrences, timely diagnosis and management with surgical excision and adjuvant therapy are beneficial for such patients.

## POTENTIAL OF NON-INVASIVE ER: YAG SMOOTH® LASER AND HIGH-INTENSITY TESLA MAGNETIC STIMULATION (HITS®) TREATMENT OF URINARY INCONTINENCE IN WOMEN

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**Problem statement:** Since 2015 great number of clinical studies have shown the advantages of different energy-based devices (EBD) for the treatment of (stress) urinary incontinence (SUI) and genitourinary syndrome of menopause (GSM). Most studies have referred to the use of nonablative Er:YAG SMOOTH® laser for the treatment of SUI and mixed urinary incontinence (MUI), and both Er:YAG and CO<sub>2</sub> lasers in the treatment of GSM. **Methods and results:** Head-to-head studies showed that Er:YAG SMOOTH® laser improves urinary incontinence in women as effectively as the tension-free vaginal tape (TVT) and transobturator tape (TOT) procedures. For patients with mixed urinary incontinence (MUI), some in the TVT and TOT groups showed exacerbation. However, all patients in the laser therapy group tended to improve. Vaginal erbium laser (VEL) safely and effectively improve overactive bladder symptoms score (OABSS) compared to common pharmacotherapies, anticholinergics and  $\beta$ 3-adrenoceptor agonists, however through a different mechanism. VEL improves blood flow in the bladder, urethra, and vaginal wall reducing OABSS without adverse effects typical for medication. The comparative study showed that Er:YAG SMOOTH® delivers an equally significant reduction in SUI, both in hysterectomized and non-hysterectomized patients. Faraday's law of magnetic induction, whereby a magnetic field pulse induces electrical activity that depolarizes the nerves and causes selective supramaximal contraction of the pelvic floor muscles. Repeated activation of the terminal motor nerve fibers and the motor end plates will tend to build muscle strength and endurance. High-intensity Tesla magnetic stimulation (HITS™), enables fast and easy strengthening of the pelvic floor muscles without effort. The results suggest a statistically significant reduction in the frequency of urinary leakage in all three types of urinary incontinence ( $p = 0.001$ ). Magnetic stimulation has a positive impact on reducing the symptoms of urinary incontinence and improving quality of life. **Conclusion:** The combination of these two techniques may work in a synergistic manner to boost the overall effect of pelvic organ support.

#### ENHANCING PRECISION: FLUOROSCOPY-GUIDED REMOVAL OF DEEP CONTRACEPTIVE IMPLANTS

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**Problem statement:** Subcutaneous contraceptive implants have become a widely utilized method for long-term birth control, offering convenience and effectiveness to women. However, the need for removal due to completion of their effective lifespan, desired conception, or unforeseen complications might present a distinct challenge, particularly if they are non-palpable or deeply implanted. Conventional extraction methods may encounter difficulties in accessing these deep implants, potentially leading to procedural complications, patient discomfort, or unsuccessful removal. As such, the demand for refined techniques that ensure safe, efficient, and comprehensive removal of deep contraceptive implants has become paramount. This study addresses this challenge by investigating the utility and outcomes of fluoroscopy-guided extraction techniques for deep contraceptive implants, aiming to contribute valuable insights that advance the precision and efficacy of implant removal procedures. **Methods:** We collected and analyzed data on women presenting with a non-palpable or deep contraceptive implant referred to our institution for extraction over the course of 4 years. **Results:** Our population sample consisted of 52 women with a median age of 31,8 years and BMI between 18,7-37,5kg/m<sup>2</sup>. The mean use time was 3,78 years. The main reasons identified for removal were end of validity (80%) and desire of pregnancy (12%). 38 devices were inserted in a Primary Care Facility and 14 in a Hospital. There were no complications associated with the removal procedures. **Conclusion:** Fluoroscopy-Guided extraction of deep contraceptive implants facilitates the procedure and prevents complications associated with blind removal of these devices.

#### THE PLACEBO EFFECT AND ITS USE IN GYNECOLOGY

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**Problem statement:** The placebo effect in medicine is often considered a nuisance because of its ability to relieve symptoms of medical diseases without the use of medications. **Methods and Results:** This presentation will include definitions of placebo and nocebo, methods of action, and examples of physiological reactions

to placebo. **Main findings:** The placebo effect is an important factor in treatment success and can easily be incorporated to any treatment given. **Conclusions:** In order to utilize the placebo effect in medical treatment, a prescribing physician may easily learn and implement methods to enhance treatment success and reduce unpleasant side effects as presented in this talk.

#### INFECTED ENDOMETRIOMA LEADING TO CUTANEOUS FISTULA FORMATION

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**Problem Statement:** Endometriomas present as adnexal masses which can be densely adherent to surrounding structures, such as fallopian tubes, pelvic sidewalls, and bowel. Infection of endometriomas is a rare complication which may occur after an invasive procedure or may also be local extension of an inflammatory process or hematogenous dissemination. Patients with infected endometriomas typically present with pelvic pain and a low-grade fever, a nonspecific presentation that begets an extensive differential diagnosis. **Methods:** A 44 year-old patient was seen for an enlarged, tender abdomen with a history of progressive abdominal distention over the past two months. Her history was significant for abdominal myomectomy. On ultrasound there was a 6 x 6 x 5.5 cm complex left adnexal mass and a fibroid uterus measuring about 20 cm. After counseling she opted to have an abdominal hysterectomy, left salpingo-oophorectomy, right salpingectomy. **Results:** Exam under anesthesia was notable for erythematous, warm abdomen, cracking skin, and palpable mass to the umbilicus (Figure 1a). Intraoperatively, copious purulent material with significant necrosis was encountered within the subcutaneous tissue and rectus abdominus muscles requiring extensive debridement. A fistula tract was identified from the subcutaneous tissue through the fascia and rectus muscle into an ovarian cyst with small bowel adhered circumferentially (Figure 1b). The bowel was carefully dissected away, and a left salpingo-oophorectomy was performed. The uterus and other adnexa were left in situ, to minimize the amount of surgery. ABThera open abdomen negative pressure therapy device was placed and patient underwent additional washout the following day with abdominal wall closure using biologic XenMatrix. Post operatively, patient was managed on vancomycin, piperacillin-tazobactam, and clindamycin. She was discharged on postoperative day seven with one additional week of amoxicillin-clavulanic acid and wound V.A.C. use to assist with her abdominal wound closure. Cultures collected intraoperatively grew Peptoniphilus harei group. Pathology confirmed that the ovarian cyst and tissue from debridement was an infected endometrioma that perforated and fistulized through this space. **Conclusion:** Spontaneous infection of an ovarian endometrioma is extremely rare. In patients with adnexal mass and suspected abdominal wall endometriosis, presence of cutaneous fistula should be considered for better surgical planning.

#### THE EFFECT OF HEALTH-SEEKING BEHAVIOR ON KNOWLEDGE OF PELVIC FLOOR HEALTH IN WOMEN

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**Objective:** Most women with pelvic floor dysfunction do not engage in health-seeking behavior for their problems. There are many barriers to seeking help. One of these is knowledge. Accordingly, this study aimed to evaluate the effect of women's health-seeking behaviors on pelvic floor health knowledge. **Materials and Methods:** This descriptive study was conducted in women's education and culture centers of a municipality between March and July 2023. The study included 344 literate women over the age of 18. Descriptive Information Form, Health Seeking Behavior Scale, and Pelvic Floor Health Knowledge Test were used as data collection tools. The necessary ethical committee approval, institutional permission, and informed consent from participants have been obtained to conduct the study. **Results:** It was determined that the mean age of the participants included in the study was 44.96±12.68 years and 39.2% of them had secondary school education. It was observed that the mean number of pregnancies was 2.55±1.68. It was observed that the





mean Health Seeking Behavior score was  $3.17 \pm 0.68$  and the mean Pelvic Floor Health Knowledge Test score was  $16.89 \pm 5.93$ . There was a positive correlation between the Pelvic Floor Health Knowledge Test score and the Health Seeking Behavior Scale score ( $p < 0.001$ ). According to the results of multiple linear regression analysis, it was seen that undergraduate and higher education level ( $\beta = 0.268$ ), number of pregnancies ( $\beta = 0.188$ ) and online health-seeking behavior ( $\beta = 0.142$ ) were significant predictors of women's pelvic floor health knowledge levels ( $p < 0.05$ ). There was no significant contribution of Professional and Traditional health-seeking behaviors ( $p < 0.05$ ).

**Conclusion:** The study found that participants' online health-seeking behaviors increase their knowledge of pelvic floor health. Nurses and other health professionals are recommended to increase women's pelvic floor health knowledge levels through effective education programs.

**Keywords:** Pelvic Floor, Health Care Seeking Behavior, Women, Knowledge

### SUCCESSFUL TRANSITION FROM MULTI-PORT TO SINGLE-PORT FOR LAPAROSCOPIC HYSTERECTOMY IN THE TREATMENT OF SYMPTOMATIC LEIOMYOMA AND/OR ADENOMYOSIS USING ARTISENTIAL® WRISTED ARTICULATED INSTRUMENT; AN OBSERVATIONAL COHORT STUDY

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**Problem statement:** Because of the technical difficulty of single-port surgery, many gynecologic laparoscopists have yet to adopt the single-port approach for laparoscopic hysterectomy (LH). This study aims to compare the outcome of hysterectomy before and after the transition of the primary mode of LH from multi-port to single-port.

**Methods:** This study is an observational cohort study subjecting all women who underwent hysterectomy by a single surgeon with an indication of symptomatic leiomyoma and/or adenomyosis. The cohort was divided into three groups for analysis: pre-transition (Oct 2018 ~ June 2020), transition (July 2020 ~ Feb 2022), and post-transition (March 2022 ~ March 2023). The vaginal cuff was closed intracorporeally using an articulating needle holder, ArtiSential® (LIVSMED Inc., Republic of Korea), in single-port LH in the post-transition period. Surgical outcomes and complications were compared between the three groups. Single-port LH in the post-transition period was compared with multi-port LH in the pre-transition period. **Results:** A total of 196 patients were enrolled in this study (61, 70, and 65 patients in the pre-transition, transition, and post-transition periods, respectively). The primary surgical mode dramatically changed (86.9% for multi-port LH in the pre-transition period and 92.3% for single-port LH in the post-transition period), and the laparotomy rate decreased (11.5%, 8.6%, 6.2% in each period) over time. Among patients receiving LH, additional port insertion and open conversion rates were 5.7% and 0% in the pre-transition period and 1.7% and 3.3% in the post-transition period. Vaginal cuff dehiscence and serious complication rates were not different among the three groups (Table 1). In comparing the single-port LH group in the post-transition period with the multi-port LH group in the pre-transition period, the length of stay decreased significantly ( $2.0 \pm 0.5$  vs.  $2.9 \pm 0.4$  days,  $p < 0.001$ ), while uterine weight, surgical time, estimated blood loss, and complication rates were not statistically different.

**Conclusion:** Our study showed that the primary mode of hysterectomy had been successfully switched from multi-port to single-port after some transition period. The technical difficulty and stableness of intra-corporeal cuff closure might benefit from using an ArtiSential® needle holder.

### IMPACT OF HEREDITARY COAGULATION DISORDERS IN FERTILE AGE WOMEN – A RELEVANT SOURCE OF MORBIDITY?

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**Problem Statement:** Coagulation disorders are potential causes of abnormal uterine bleeding (AUB), integrating the PALM-COEIN acronym. Their chronicity carries out relevant morbidity throughout women's reproductive age. **Methods:** Retrospective study of women with coagulopathy followed longitudinally in our centre, with one pregnancy and delivery in the last two years ( $n = 25$ ). **Results:** The most prevalent coagulopathy was Congenital Thrombocytopenia ( $n = 8$ ), followed by Von Willebrand Disease (vWD) ( $n = 7$ ), Idiopathic

Thrombocytopenic Purpura ( $n = 5$ ) and Hemophilia A carriers ( $n = 4$ ). Mean age at diagnosis was 21 years. Sixty-four percent of the women suffered from menorrhagia (maximum of 20 days of bleeding). From the latter, two had history of acute abnormal uterine bleeding, one requiring hospitalisation. At diagnosis, 68% of the women presented with mucocutaneous bleeding signs; 12% had history of iron-deficiency anemia, either requiring iron oral supplementation ( $n = 2$ ) or red blood cell transfusion ( $n = 1$ ). Control of AUB was achieved through combined hormonal contraception in 36% of the cases, placement of levonorgestrel intra-uterine device ( $n = 3$ ) and insertion of etonogestrel subcutaneous implant ( $n = 2$ ). At current pregnancy, an average of 10 years elapsed since diagnosis. Forty-eight percent of the women were multipara. From the latter, two had history of bleeding complications in previous gestation. In the actual pregnancy, two women with vWD required intra-partum factor administration. Two postpartum bleeding cases were registered: one primary, with resolution after misoprostol administration; one secondary, with a hemoperitoneum diagnosis at 96 hours post-partum, requiring an exploratory laparotomy. Twenty-four of the women presented with postpartum anemia with need for intravenous iron administration, 8% required red blood cell transfusion. **Conclusion:** Abnormal uterine bleeding owing to coagulopathy leads to long-term repercussions in fertile age women, interfering with quality of life in affected women since the time of menarche, as well as increasing the odds for adverse obstetric outcomes.

### ORAL PRESENTATIONS 2 - FETOMATERNAL MEDICINE

#### EFFICACY OF DEXAMETHASONE IN ACCELERATING POSTPARTUM RECOVERY AMONG WOMEN WITH HELLP (HEMOLYSIS, ELEVATED LIVER ENZYMES, AND LOW PLATELET) SYNDROME AND ITS MATERNAL COMPLICATIONS IN BICOL MEDICAL CENTER

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**Problem Statement:** The study determined the efficacy of dexamethasone in accelerating postpartum recovery among women with HELLP Syndrome in Bicol Medical Center. **Methods:** This randomized controlled study included postpartum women with complete or partial HELLP syndrome based on Tennessee Classification. A total of 30 patients were analyzed and divided into study and control groups through a systematic randomization technique after fulfilling the inclusion criteria. Postpartum women in the study group received 12 mg of Dexamethasone intravenously every 12 hours for two doses. Baseline parameters, 36th and 48th hours post-treatment were tested and compared with Repeated measures ANOVA and Bonferroni post-hoc test. **Results:** Dexamethasone showed a significant increase in platelet count from baseline of  $131.06 \times 10^3/uL$  to  $150.13 \times 10^3/uL$  at 36th-hour post-treatment and  $224.40 \times 10^3/uL$  at 48th-hour post-treatment in the study group compared to the control group baseline platelet count of  $167.93 \times 10^3/uL$  to  $151.00 \times 10^3/uL$  at 48th hour. Aspartate Aminotransferase (AST) showed a significant decrease from the baseline of  $117.80 u/L$  in the study group to  $60.73 u/L$  at 36th-hour and  $44.13 u/L$  at 48th-hour compared to the control group baseline AST of  $92.40 u/L$  to  $79.06 u/L$  at 48th hour. Alanine Aminotransferase (ALT) showed a significant decrease from a baseline of  $147.53 u/L$  in the study group to  $73.80 u/L$  at 36th-hour and  $48.53 u/L$  at 48th-hour compared to baseline AST of  $81.86 u/L$  in the control group to  $97.40 u/L$  at 48th hour. Lactate Dehydrogenase showed a significant decrease from a baseline of  $777.46 u/L$  in the study group to  $477.93 u/L$  at 36th-hour and  $390.33 u/L$  at 48th-hour as compared to the baseline LDH of  $719.73 u/L$  in the control group to  $609.46 u/L$  at 48th hour. No maternal complications were noted in the study group. **Conclusion:** Dexamethasone use in postpartum HELLP Syndrome provided efficacy in improving disease markers and clinical outcomes thereby reducing hospital stays. This favorable method of management in complications of hypertension in pregnancy offers another direction for obstetricians in managing HELLP Syndrome. In a public health context, a shorter hospital stay would assist in reducing the utilization of limited hospital resources and saving healthcare costs by lowering the number of complications of hypertension in pregnancy.

#### PREDICTORS OF PLACENTAL LESIONS IN PREGNANCIES COMPLICATED BY GESTATIONAL DIABETES MELLITUS

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**Problem statement:** To identify predictors of placental lesions in pregnancies complicated by GDM. **Methods:** A prospective study was designed including pregnant women affected by GDM. Data were collected about demographics, pregnancy course, maternal and fetal outcomes, glycemic control, therapeutical approach. Analysis of placental findings was performed according to the updated criteria from Amsterdam Consensus. **Results:** A total of 553 pregnancies complicated by GDM were included in the analysis (diet, n=391; insulin, n=94; metformin, n=68, respectively). Demographics were similar among three study groups. No statistically significant linear tendency was found for maternal age, ethnicity, education, working status, smoking status, and marital status. Metformin reduced rates of small and large babies in comparison with insulin, suggesting a better control of effects of hyperglycemia on birthweight in all cases requiring a pharmacological treatment. Likewise, placental weight in metformin group showed a lower weight if compared with diet and insulin, reducing cases of placentomegaly, typical feature of poor controlled GDM. By using updated classification criteria for histological evaluation of placenta, all placentas were studied and classified into four categories (maternal vascular malperfusion, fetal vascular malperfusion, acute and chronic inflammation). No differences were found among studies groups, while a slight reduction of inflammation in metformin group. By logistic regression analysis, associations between placental histological damage and maternal age, ethnicity, and treatment were explored. Both age and ethnicity failed to be associated with placental damage. In contrast, diet and insulin were found as risk factors, with odd ratio of 5.2 and 2.8 respectively. Metformin resulted a protective factor for placental damage reaching an OR of 0.2. **Conclusion:** As an alerting obstetric complication, GDM could be prevented by both pregestational weight loss and lifestyle modification. Treatments are the best predictors of placental damage: metformin mitigates excessive pathological growth for fetus and placenta and seems to play an anti-inflammatory role in placenta. However, future studies are warranted for improving knowledge on action mechanism of current treatments for mother, baby, and placenta.

**Keywords:** Pregnancy, diabetes, placenta, metformin, insulin, histology.

## PROGNOSTIC VALUE OF ANGIOGENIC MARKERS IN PREGNANCIES WITH FETAL GROWTH RESTRICTION

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**Problem statement:** Pregnancies with fetal growth restriction are at increased risk of preeclampsia. Angiogenic markers including soluble fms-like tyrosine kinase-1 (sFlt-1) and placental growth factor (PIGF) are altered in pregnancies complicated by fetal growth restriction (FGR). The utility of these markers as a predictor of preeclampsia in women with growth-restricted fetuses is still uncertain. This study aims to evaluate the prognostic value of angiogenic markers for predicting the development of preeclampsia in pregnancies with FGR and suspected preeclampsia. **Methods:** This study included 93 women with FGR, defined according to Delphi consensus criteria, who were assessed for angiogenic markers sFlt-1 and PIGF for suspicion of preeclampsia at the Department of Obstetrics and feto-maternal Medicine at the Medical University of Vienna between 2013 and 2020. Women with established diagnosis of preeclampsia at sampling were excluded. Cox regression analysis and logistic regression were performed to demonstrate the association of angiogenic markers with the outcome. **Results:** Within this cohort, 14 women (15.1%) developed preeclampsia within one week from sampling, 21 (22.6%) within two weeks, 38 (40.9%) at any time. The sFlt-1/PLGF ratio consistently showed a stronger association with development of preeclampsia compared to sFlt-1 or PIGF alone in pregnancies with fetal growth restriction (PE within a week, AUC 0.85 vs 0.82 and 0.72, respectively). Models including sFlt-1/PIGF were more strongly associated with preeclampsia hazard compared to sFlt-1 and PIGF alone models (C-index: 0.79±0.046 vs 0.76±0.048 and 0.75±0.047, respectively). Risk classification capabilities of sFlt-1/PIGF decreased after the two-week time point. The established cut-off value for ruling out preeclampsia (sFlt-1/PIGF ratio 38) was effective with a negative predictive value of 93.3% and sensitivity of 95.2%. **Conclusion:** Combined use of sFlt-1/PIGF can be preferred to PIGF alone in

pregnancies with fetal growth restriction. Moreover, established cut-offs for ruling-out development of preeclampsia seem to be effective in these patients.

## SERUM LEVEL OF INTERLEUKIN-17, C-REACTIVE PROTEIN, AND URIC ACID AS PREDICTIVE BIOMARKERS IN EARLY-ONSET AND LATE-ONSET PREECLAMPSIA

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**Background:** Preeclampsia (PE) is a complication of pregnancy that can increase maternal-fetal morbidity. The incidence of PE is seven times higher in developing country (WHO, 2019). Due to the high complexity of the pathogenesis, oxidative stress and inflammation are theorized to play a main role in PE. Oxidative stress and inflammation are influenced by various factors that could act as predictive biomarkers, such as interleukin (IL)-17, c-reactive protein (CRP), and uric acid. This study aims to compare serum levels of IL-17, CRP, and uric acid as predictive biomarkers in early-onset and late-onset PE. **Methods:** A prospective comparative study with consecutive random sampling was conducted at the Department of Obstetrics and Gynecology RSMH Palembang from January through July 2022. A total of 90 pregnant women met the inclusion criteria and were divided into 3 groups, namely early-onset PE, late-onset PE, and normotension. Blood serum was examined once at the first visit. Differences in IL-17, CRP, and uric acid levels were analyzed with STATA version 15 using Kruskal-Wallis test, chi-square test and receiver operating characteristic. **Results:** There were significant differences in IL-17 (59.12 pg/dl, 45.73 pg/dl, and 39.71 pg/dl, p=0.033), CRP (15.67mg/L, 10.19mg/L, and 3.69mg/L, p0.001), and uric acid (7.57mg/dl, 5.66 mg/dl, and 4.18mg/dl, p0.001) between early-onset PE, late-onset PE, and normotension groups (p0.05). Cut-offs of ≥66.31 and ≥66.84 pg/dL for IL-17, ≥5.70 and ≥5.90 mg/L for CRP, and ≥5.60 and ≥5.76 mg/dl for uric acid could be used to predict early- and late-onset PE, respectively. **Conclusion:** The serum levels of IL-17, CRP, and uric acid could be used to predict early- and late-onset PE patients.

## ORAL PRESENTATIONS 3 - FETOMATERNAL MEDICINE

### INCREASING VACCINE UPTAKE DURING PREGNANCY BY USING PRENATAL EDUCATION CLASSES: AN EFFECTIVE TOOL FOR HEALTH COMMUNICATION AND PROMOTION

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**Problem statement:** Childbirth education classes represent an antenatal tool for supporting pregnant women and couples in increasing knowledge on pregnancy, delivery, breastfeeding, and newborn care. The aim of this study was to investigate the impact of the additional lesson to the prenatal course regarding the advantage of the vaccination on mitigation of maternal anxiety. **Methods:** An observational study was designed including participants in childbirth education classes, comparing courses enhanced by the extra lesson on vaccination during pregnancy versus those lacking it. Assessment of the impact of prenatal educational on vaccine was measured by using validated questionnaires (State-Trait Anxiety Inventory, STAI; Perceived Stress Scale, PSS; World Health Organization- Five Well-Being Index, WHO-5). **Results:** A total of 145 pregnant women participated to the investigation by answering to the online survey. Of them, 33 patients (22.8%) belong to the course without lesson on vaccine, while 112 (77.2%) participated to online prenatal education inclusive of additional meeting on usefulness to get vaccinated during pregnancy. No statistical differences were found between study groups in demographics and perinatal outcomes. Participants to enriched course reported lower basal anxiety levels than those without lesson on vaccine (STAI-State, normal score 40, 30 vs. 19%, p-value 0.041; STAI-State, mild score 40-50, 78 vs 67%, p-value 0.037). With reference to the last two weeks, maternal wellbeing level was improved by the added class (score 13 as measurement of wellbeing: 62% vs 80%, p-value 0.05). Moderate perceived stress assessed by PSS was found in those pregnant women without prenatal education on vaccine (64 vs 50%, p-value 0.042).





**Conclusion:** The introduction of a lesson regarding on vaccination during pregnancy in the program of prenatal education courses improves maternal anxiety levels and wellbeing, in addition to reducing perceived stress.

**Keywords:** Pregnancy, vaccine, health literacy, prenatal education classes.

#### ADDED VALUE OF VITAMIN D SUPPLEMENTATION IN THE STANDARD OF CARE FOR TREATING GESTATIONAL MELLITUS DIABETES

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**Problem statement:** Gestational diabetes mellitus (GDM), defined as any glucose intolerance with the onset or first recognition during pregnancy, is characterized by rising incidence, fostered by the worldwide increase of pathological nutritional status from young age. In pregnant women, lower 25(OH)D concentrations have been suggested to present an inverse association with maternal glycaemia, insulin resistance, and increased risk of GDM. In spite of growing body of evidence, there is not full agreement on the therapeutic association between GDM based on VD deficiency and 25(OH)D supplementation. In the attempt to bring up-to-date the role of low VD levels in the management of GDM, the aim of this study was to illuminate the impact of VD supplementation in GDM controlling.

**Methods:** A retrospective study was designed including pregnant women affected by GDM. Data were collected about demographics, pregnancy course, maternal and fetal outcomes, and therapeutical approach. Vitamin D supplementation was revised in all medical records. Student's t-test for independent samples and Mann-Whitney-U, Pearson- $\chi^2$ , or exact Fisher's tests were used to compare quantitative and qualitative data, respectively. All tests were two-sided, and p-values lower than .05 were established statistically significant. **Results:** A total of 605 pregnancies complicated by GDM were included in the analysis. Among them, 138 (16.5%) pregnant women were supplemented by oral vitamin D, and 467 (83.5%) were treated only by standard of care for GDM (diet, insulin or metformin). Statistical differences were found between study groups in ethnicity (p-value .039), smoking status (p-value .046), BMI at beginning (p-value .022), medical history (chronic hypertension, p-value .022; thyroid disease, p-value .001; neurological disease, p-value .003). Among perinatal outcomes, labor induction (p-value .022) and blood loss (p-value .023) were statistically significant different between study groups. **Conclusion:** Vitamin D supplementation in the treatment of GDM can improve perinatal outcomes among those pregnant women with higher risks related to their baseline characteristics and preexisting medical conditions. Additionally, the potential role in controlling blood loss at birth seems to support its recommendation during pregnancy.

**Keywords:** Pregnancy, diabetes, vitamin D supplementation, diet, metformin, insulin.

#### IMPACT OF DIFFERENT STRATEGIES OF TREATMENT FOR GESTATIONAL DIABETES MELLITUS ON PLACENTAL FINDINGS

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**Problem statement:** Gestational diabetes mellitus is the most common metabolic disturbance during pregnancy. In last decades, the prevalence is rising, mainly due to the increase in maternal obesity and delayed the family planning, reaching an overall rate of 10-15%. Crucial short- and long-term health risks are described in the growing body of literature on this topic. Successful pharmacological interventions represent a fruitful goal for the modern public health. The aim of the present study was to assess effects of GDM treatments on placental histology. **Methods:** A prospective study was designed including pregnant women affected by GDM. Analysis of placental findings was performed according to the updated criteria from Amsterdam Consensus. One-way ANOVA with linear polynomial orthogonal contrast or linear-by-linear association test  $\chi^2$  were used to test the hypothesis of linear trend across the study groups of quantitative and qualitative variables, respectively. Statistically significant p-value was set at 0.05. **Results:** A total of 553 pregnancies complicated by GDM were included in the analysis (diet,

n=391; insulin, n=94; metformin, n=68, respectively). Demographics were similar among three study groups. No statistically significant linear tendency was found for maternal age, ethnicity, education, working status, smoking status, and marital status. A higher rate of labor induction was found in insulin group, mainly due to the established gestational age for delivery, fixed at ending 38-starting 39 weeks. Metformin reduced rates of small and large babies in comparison with insulin, suggesting a better control of effects of hyperglycemias on birthweight in all cases requiring a pharmacological treatment. In metformin group placental weight was lower weight if compared with diet and insulin, with a significant reduction of placentomegaly, typical feature of poor controlled GDM. By using updated classification criteria for histological evaluation of placenta, no differences were found among studies groups. A significant slight reduction of inflammation was found in metformin group. **Conclusion:** Management of GDM requires a multilevel approach for reducing adverse obstetric outcomes. Among therapeutic treatment, metformin seems to mitigate the excessive pathological growth for fetus and placenta. **Keywords:** Pregnancy, diabetes, placenta, metformin, insulin, histology.

#### EFFECT OF COVID-19 INFECTION IN PLACENTAL HISTOLOGY: ANALYSIS OF VARIANTS ACCORDING TO THE DIFFERENT PANDEMIC WAVES

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**Problem statement:** The aim of this study was to investigate perinatal outcomes in pregnancies complicated by COVID-19, to characterize histological findings according to the different waves and vaccine uptake. **Methods:** A retrospective study was designed including pregnant women affected by COVID-19. Data were collected about demographics, pregnancy course, maternal and fetal outcomes, placental biometry and macro- and microscopical morphology. By using a temporal criterion, all waves were defined following national definition (II wave, from October to December 2020; III, from January to October 2021; IV, from November 2021 to March 2022; V, April 2022 to October 2022). **Results:** A total of 239 pregnancies were included in the analysis (II wave, n=24; III, n=22; IV, n=99; V, n=94, respectively). No statistical differences were found between study groups in demographics and perinatal outcomes. Most of the patients in all groups were asymptomatic (II wave, 92%, III, 82%; IV, 93%; V, 94%, respectively). No increases in maternal complications were observed in all groups, such as diabetes or hypertensive disorders. A significant reduction of required hospitalization across the waves (II wave, 17%; III, 18%; IV, 4%; V, 3% respectively) was calculated. According to the vaccine uptake and number of dosis, a significant reduction of placental lesions was found, mainly due to the protective effect of vaccination and changes in pathogenicity of SARS-CoV2, as represented in Figg. 1 and 2. Of interest, placental findings attributable to maternal and fetal malperfusion were predominant in comparison with acute and chronic lesions, but with a significant decrease across the waves. Variants of concern also determined a decrease of chronic inflammation, although a slight increase in acute damage in placenta. **Conclusion:** Across the waves of COVID-19 pandemic placental histology seems to ameliorate, with a significant reduction of adverse perinatal outcomes. A pivotal role can be played not only by vaccination, but also by changes in pathogenicity of SARS-CoV2.

**Keywords:** Pregnancy, COVID-19, placenta, histology, vaccine.

#### SLOW-RELEASE METFORMIN FOR TREATING GESTATIONAL MELLITUS DIABETES IN PRESENCE OF LANGUAGE BARRIERS: EVIDENCE FROM THE FIRST STUDY IN ITALY AFTER ITS AUTHORIZATION IN PREGNANCY

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**Problem statement:** Gestational diabetes mellitus (GDM) represents an open challenge for specialists in feto- maternal medicine, mainly due to short- and long-term risks for the mother-baby dyad. The aim of this study is to explore the impact of slow-release metformin in GDM therapy in patients with poor compliance due to complete or partial language barrier (LB). Study population was classified according to the language barrier, as absent, partial or complete. **Methods:** A prospective study was designed including pregnant women affected by GDM. Data were collected about demographics, pregnancy



course, maternal and fetal outcomes, glycemic control, and therapeutic approach. One-way analysis of variance (ANOVA) with post-hoc Bonferroni correction for multiple comparisons and Pearson's chi-square test were used to test the hypothesis of linear trend in the study groups for quantitative and qualitative variables, respectively. Statistically significant p-value was set at 0.05. **Results:** A total of 54 pregnancies were included in the analysis (absent LB, n=27; partial LB, n=12; complete LB, n=15, respectively). Statistical differences were found among study groups in ethnicity, education level, working status, and marital status, where similar maternal age and BMI at diagnosis were found. Fig. 1 and Fig 2 reports the distribution of maternal glycemic control at diagnosis and at the end of the pregnancy, and the request adjustments of therapy over the time. No statistically significant difference was found in perinatal outcomes. Of interest, no difference was found in placental weight, ratio between placental weight and birthweight and metabolic scaling low. **Conclusion:** The management of GDM by slow-release metformin in GDM therapy in patients with poor compliance due to complete or partial language barrier seems promising in terms of optimal compliance by patients, favorable perinatal outcomes and impact on placental structure and function.

**Keywords:** Pregnancy, diabetes, placenta, metformin, insulin, language barrier.

### THE EFFECT OF DOUBLE-BALLOON CERVICAL RIPENING CATHETER ON CERVICAL SHORTENING RATES IN NULLIPAROUS AND MULTIPAROUS WOMEN

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**Problem statement:** Purpose of this study is to investigate the effect of double balloon catheter (Cook® cervical ripening balloon, Bloomington, Indiana, USA) on the rate of cervical shortening in nulliparous and multiparous patient groups. **Methods:** This prospective study included women who applied for labor induction between 37 and 42 completed weeks of gestation at Eskisehir Osmangazi University, Department of Obstetrics and Gynecology. Women were divided into two groups: nulliparous (n:23), and multiparous (n:23). Cervical length was measured before the application of double-balloon catheter and thereafter every two hours by transvaginal ultrasonography until the double balloon catheter spontaneously expelled. The primary outcome of the study was cervical shortening rate of the women until the expulsion of the balloon. Secondary outcomes were duration from induction to balloon expulsion and the duration from balloon expulsion to delivery. **Results:** Demographic characteristics were comparable. Cervical shortening rates was not different between nulliparous and multiparous women (0.19±0.21 cm/h vs 0.26±0.21 cm/h respectively, p 0.05). Duration from induction to balloon expulsion was significantly shorter in the multiparous women (593±210 min vs 319±129 min.; p=0.049). The duration of balloon expulsion to delivery was similar between two groups (696±225 min vs 506±210 min; p0.05). **Conclusion:** Our study demonstrated that cervical shortening time in women with labor induced by double-balloon catheter is not different between multiparous and nulliparous women.

### UNUSUAL PRESENTATION OF PLACENTA ACCRETA

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**Introduction:** Unusual presentation of Placenta Increta. Placenta increta is one of life-threatening situation that best managed by multidisciplinary approach. We describe a case leading to a rupture of unscarred uterus in the second trimester that leading to massive intra-abdominal hemorrhage. **Case Report:** A 37 year old, Gravida 11 Para 9+1 with previous all Spontaneous Vaginal Delivery and one abortion managed by uncomplicated Extraction of Retained Product of Conception (ERPC), presented to our emergency department with rupture of membrane. While in hospital, she developed tachycardia and significant drops in hemoglobin level. Also she had been diagnosed to have intrauterine fetal demise. Rupture uterus suspected and the ultrasound confirmed the diagnosis by showing hemoperitonium. After starting the resuscitation procedures, Emergency laparotomy performed which showed uterine rupture along with placenta increta for which the patient underwent subtotal hysterectomy. Pathological analysis showed chorionic villi invading the myometrium supporting the diagnosis of placenta increta. **Conclusion:** Though the occurrence of placenta increta is rare with unscarred uterus, and uterine rupture also rare with unscarred uterus and in the second trimester, high index of suspicion should be raised

in grand-multi para even when this was the only risk factor for these serious problems as missing the diagnosis is fatal to the patient.

### NEW POSSIBILITIES TO USE CARDIOTOCOGRAPHY TO ASSESS THE FETAL FUNCTIONAL STATE IN THE SECOND TRIMESTER OF PREGNANCY

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**Problem statement:** Cardiotocography (CTG) is the most common method of instrumental monitoring of the fetal condition. Currently, the full potential of CTG is not utilized because the interpretation and computer analysis of data are possible at a minimum of 24 weeks but are implemented in practice only from 32 weeks of gestation. It is known that the second trimester of pregnancy is partially overlooked for the assessment of fetal well-being. **The aim of this study** was to identify characteristic cardiotocographic parameters in the second trimester of pregnancy. **Research objectives:** Establish the peculiarities of cardiotocography parameters in the second trimester of women with physiological pregnancy. Compare the cardiotocography data in the third and second trimesters of these women. **Methods:** The assessment of fetal functional state was performed from 16 weeks of gestation until delivery, every 7-14 days, using the General Meditech CTG device equipped with ultrasound transducers operating at frequencies of 1.5 and 2.0 MHz, which are safe for use during pregnancy. The transducer was placed at the optimal point for auscultation of the fetal heart rate, considering the gestational age. Cardiotocograms were recorded for a minimum of 20 minutes. Up to 24 weeks of gestation, the optimal position for the woman was lying on her back and after 24 weeks, the lateral position was preferred. A total of 904 cardiotocograms were analyzed. **Results:** The lowest values of CTG parameters related to variability (STV, LTV, EVP, amplitude, and frequency of variability) were observed at 16-19 weeks of gestation, with an increase in variability observed with advancing gestational age. **Conclusion:** The established parameters of cardiotocography, characteristic of fetal physiological condition from 16 to 28 weeks of pregnancy, allow for a fundamental change in the functional diagnosis of the antenatal period of fetal life. Further research in this direction will be continued.

**Keywords:** cardiotocography, STV, LTV, variability

**References:** RS. Zamaleeva, NA Cherepanova, AV Frizina, EY Yupatov, DV Frizin. Prediction of pla-central pathology during the second trimester of pregnancy using a new risk assessment scale and fetal cardiotocography. Vopr. ginek. akus. perinatol. (Gynecology, Obstetrics and Perinatology). 2020;19(5):36-43. DOI: 10.20953/1726-1678-2020-5-36-43

### EFFECTS OF ALLOSTATIC LOAD ON GESTATIONAL DIABETES MELLITUS AND PRETERM LABOR: ANALYSIS OF A CHINESE COHORT

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**Problem statement:** To demonstrate the relationship between allostatic load (AL), a measure of cumulative chronic stress during pregnancy, and the subsequent risk of gestational diabetes mellitus (GDM) and preterm labor. **Methods:** We conducted a cohort study and enrolled pregnant women who met the inclusion criteria. Our primary exposure was their AL in the second trimester, evaluated by a composite score of nine indicators (body mass index, systolic blood pressure, diastolic blood pressure, fasting plasma glucose, plasma albumin, creatinine, total cholesterol, cortisol, and hypersensitive C-reactive protein). The outcome included the risk of GDM and spontaneous preterm birth. Multivariable logistic regression was performed to estimate the association between AL scores and the risk of GDM and preterm birth, adjusted for potential confounders. **Results:** A total of 601 women were enrolled in this analysis. Their median AL score was 2 with a range of 0-5. GDM was identified in 83/601(13.8%) while spontaneous preterm birth occurred in 41/601 (6.8%). After adjusting for potential confounding factors, we found high AL score was significantly associated with the risk of GDM (adjusted odds ratio [aOR] 1.42, 95%CI 1.15-1.76) and preterm labor (aOR 1.38, 95%CI 1.04-1.82). In addition, a significant inverse association was observed between AL scores and days of pregnancy (p-value = 0.009). **Conclusion:** Women with a higher AL score in the second trimester may have a higher risk of GDM and preterm birth.





The assessment of AL and chronic stress during prenatal visits may help improve maternal and child health.

The authors declare no competing interests.

### THE CORRELATION BETWEEN THE VITAMIN D RECEPTOR AND TIMP-1 IN THE PLACENTA ACCRETA SPECTRUM

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**Problem statement:** The incidence of placenta accreta in Indonesia has reached 2%. Placenta accreta occurs due to the invasion of abnormal trophoblasts to the myometrium. 1,25-(OH)<sub>2</sub>D is an active compound of vitamin D and acts as the main ligand of VDR. It also increases the expression of TIMP-1 in trophoblast invasion. This study aimed to determine the correlation of VDR expression with TIMP-1 on the placenta accreta. **Method:** This is a cross-sectional study with 80 samples for two expressions, consisting of 40 placentas accreta and 40 normal placentas. Immunohistochemistry assays were used to assess the expression of VDR and TIMP-1. Data analysis was conducted with different tests and correlation tests. **Results:** There was a significant difference between VDR expression on the placenta accreta and normal placenta with a P value of 0.05. Patients with a lower VDR H-Score were 4.5 times more likely to experience the placenta accreta spectrum disorder than those with a higher VDR H-Score. In addition, there was a significant difference in TIMP-1 expression between placenta accreta and normal placenta with a P value of 0.05. Patients with a lower TIMP-1 H-Score were 3.115 times more likely to experience placenta accreta spectrum disorder than those with a higher H-Score. The results of the Spearman correlation test also showed a correlation between VDR and TIMP-1 on the placental spectrum with a correlation coefficient of 0.89. **Conclusion:** The expressions of VDR and TIMP-1 in placenta accreta spectrum patients were lower than in normal placenta, and there was a correlation between VDR and TIMP-1 in the placenta accreta spectrum disorder.

### RISK FACTORS FOR EMERGENT DELIVERY BEFORE 36 WEEKS AMONG PREGNANT WOMEN WITH PLACENTA ACCRETA SPECTRUM DISORDER – EXPERIENCE FROM A TERTIARY CENTER IN THAILAND

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**Problem statement:** Prenatal diagnosis of placenta accreta spectrum (PAS) followed by early, planned delivery by an experienced team can improve maternal outcomes at the expense of iatrogenic prematurity. Currently, there is inadequate high-quality evidence regarding delivery timing for women with PAS. Most studies on this topic have small sample sizes, and some reported a mixed population with PAS and placenta previa. Our study was conducted to evaluate the risk factors for emergent delivery before gestational age (GA) 36 weeks in women with PAS disorders. **Methods:** A retrospective case-control study was conducted at a tertiary-level hospital in Southern Thailand. Women with prenatal suspicion of PAS who delivered between January 2007 and December 2022 were included. Women who delivered before GA 36 weeks electively or for conditions unrelated to PAS were excluded. Women who had emergent delivery before 36 weeks and who delivered after 36 weeks were compared using univariate and multivariate analysis. Statistical significance was set at P<0.05. **Results:** 177 women with PAS were included in the study; 48 (27.1%) underwent emergent delivery before 36 weeks. Women who had emergent delivery before 36 weeks were more likely to have premature uterine contractions (PUC) before 34 weeks (41.7% vs. 7.0%, p=0.001), premature rupture of membranes before 34 weeks (8.3% vs. 0%, p=0.005), and antepartum hemorrhage (APH) before 34 weeks (75.0% vs 27.9%, p=0.001), compared to women who delivered after 36 weeks. The number of PUC and APH episodes also correlates with an increased risk of emergent delivery (p<0.001). A higher degree of PAS was also significantly associated with emergent delivery (p=0.003). Multivariate logistic regression analysis shows that factors significantly predictive of emergent delivery before 36 weeks are the presence of PUC (OR 4.1, 95%CI 1.5-11.5) and APH (OR 5.7, 95%CI 2.2-14.6). **Conclusion:** Factors associated with emergent delivery before GA 36 weeks were PUC and APH before 34 weeks. Our finding suggests that the timing of delivery in women with PAS should be individualized based on maternal risk factors for the best outcomes for both the pregnant women and the newborns.

### A STUDY ON THE AGREEMENT BETWEEN ANTENATAL DIAGNOSIS OF PLACENTA ACCRETA SPECTRUM (PAS) BY ULTRASOUND AND INTRA-OPERATIVE CLINICAL GRADING BY FIGO CORRELATED WITH PATHOLOGY RESULTS

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**Problem statement:** PAS is a major cause of massive obstetric hemorrhage and cesarean hysterectomies in the era of global rising of cesarean deliveries. Prenatal ultrasound is the recommended method to evaluate the severity of PAS and choose the surgical option, either cesarean hysterectomy or conservative surgery. Recently, the International Federation of Gynecology and Obstetrics (FIGO) has suggested using intraoperative grading criteria as the main diagnostic tool to assess 'PAS severity help in choosing the best management option rather than relying on only antenatal ultrasound assessment. There is some controversy among obstetricians whether intraoperative grading of PAS is accurate enough and should be used routinely or only in addition to antenatal diagnosis by ultrasound due to the lack of good evidence to support this additional management.

**Methods:** A prospective study was done in 70 pregnant women with placenta previa suspected of PAS who were managed in the PSU PAS Center in southern Thailand between May 2022 and July 2023. Antenatal ultrasound evaluation and grading were done between gestational age 28-34 weeks. The patients underwent surgery between 34-36 weeks following the institution's protocol by surgeons with 5 years' experience in PAS surgery. One of the surgeons in each multi-surgeon operative team was blinded to the antenatal diagnosis results and gave an independent intraoperative grading. After the surgery, the histology results were compared with the antenatal and intraoperative gradings. **Results:** There were 28 (41.2%) cases of placenta previa alone and 40 cases of PAS, 3 placenta accreta (4.4%), 21 placenta increta (30.9%), and 16 placenta percreta (23.5%). All PAS cases had histology results to confirm the diagnoses. The interobserver agreement between antenatal and intraoperative findings using Kappa statistics was 0.78 (95% CI: 0.62-0.93). The interobserver agreement between intraoperative findings and histology was 0.82 (95% CI: 0.68-0.96), and the agreement between antenatal ultrasound and histology grading was 0.72 (95% CI: 0.55-0.89). **Conclusion:** Intraoperative grading by experienced surgeons showed the highest agreement with the histology results and can be used to evaluate the severity of PAS alone or combined with antenatal ultrasound to help choose the appropriate option for surgery.

No disclosure of interest.

### A SUCCESSFUL VAGINAL MYOMECTOMY IMPROVE THE OUTCOME OF PEDUNCULATED SUBMUCOSAL FIBROID DURING CAESAREAN SECTION AT RURAL HOSPITAL: A RARE CASE REPORT

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**Introduction:** Uterine myomas are the most common benign growths on female reproductive system, occurring in 20%-40% women with 3%-13% incidence rate in pregnancy. One type of uterine myoma is prolapsed submucosal myoma with 10% prevalence in pregnancy and only 1% of them are cervical myoma, making it a rare clinical entity. It is highly relates to infertility and encountered mostly during pre-conception period. **Case:** A 27-year-old woman, G2P1 36+4 weeks of gestational age, singleton live head presentation, admitted to the emergency room Kojja Hospital with water broke since one day before admission. She admitted history of chronic vaginal spotting accompanied by abdominal cramps a day before admission and came in anemic condition (haemoglobin level was 8.8 g/dl). On examination, a 5cm-diameter mass with a smooth surface, suggested pedunculated cervical fibroid was seen and a solid-supple mass in vagina with 3cm-diameter originated from posterior cervical lips (6 o'clock) was felt. On ultrasound examination, fetus was in head presentation, placenta on fundus, no retroplacental hemorrhage, estimated fetal weight was (2695) grams with oligohydroamnion (ICA 6.5). A 5cm hypoechoic mass in vagina with stalk originated from posterior cervical lips were found (feeding artery was positive); in agreement with pedunculated cervical fibroids. Patient was decided to undergo elective caesarean section and continued with vaginal myomectomy. The surgery went successfully without complications. **Discussion:** Most myomectomy of pedunculated myomas during pregnancy were performed post-delivery. However, surgery during



pregnancy has also been reported. Imaging such as MRI is more accurate than transvaginal ultrasound to determine the location of leiomyoma and also in planning surgery management, but it is not used in this case due to lack of facilities in the hospital. In this case, myomectomy was performed in elective caesarean section. Obara et al. stated that location of myoma and technique as significant factors for surgical treatment and postoperative care during pregnancy. In this case, the pedicle arise from posterior cervical wall, which made it an accessible section. To control bleeding, ligation and section of the 2mm vascular pedicle was considered rather than twisting. To prevent cervicitis due to external dilation of uterus, our patient received systemic antibiotics for one week. **Conclusion:** Cervical leiomyomas and prolapsed submucosal leiomyomas in pregnancy are rare clinical entities. Conservative management is acceptable until the time of delivery unless complications arise. A surgical approach may be considered which is technically less challenging if the leiomyoma is pedunculated.

#### MANAGEMENT OF A VIABLE THIRD TRIMESTER ABDOMINAL PREGNANCY

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Potentially life-threatening abdominal pregnancies are defined by a pregnancy located in the peritoneal cavity exclusive of tubal, ovarian, or ligamentous locations. These pregnancies are either primarily formed in the peritoneal cavity or secondarily as a result of a ruptured ectopic pregnancy or tubal abortion. We present a case of an incidental finding of a viable abdominal pregnancy in a patient who previously underwent tubal ligation. A pre-operative multidisciplinary conference was held to discuss the possibility of prolonging the pregnancy with the ultimate decision being termination of the pregnancy. The patient successfully underwent delivery of the fetus with complete removal of the placenta and had an unremarkable post-operative course. Abdominal pregnancies are exceedingly rare management needs to be individualized on a per case basis in order to determine whether to proceed with immediate termination or to allow for further prolongation of the pregnancy. Our case highlights the importance of careful pre-operative planning and multidisciplinary teamwork to optimize the outcomes for both mother and child.

#### COMPARISON OF HYPERIMMUNE GLOBULIN THERAPY EVERY TWO WEEKS VERSUS EVERY FOUR WEEKS FOR PREGNANT WOMEN WITH PRIMARY CYTOMEGALOVIRUS INFECTION

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**Problem statement:** Cytomegalovirus (CMV) primary infection during pregnancy is linked to an considerable risk for congenital CMV (cCMV) infection, with potentially perinatal as well as long-term morbidity of the newborn. Two randomized controlled trials failed to show a reduction of maternal-fetal transmission with four-weekly hyperimmune globulin (HIG) therapy during pregnancy. Recently published data proposes a benefit of HIG administration every two weeks. Data on directly comparing HIG administration every 2 weeks to HIG administration every 4 weeks in pregnant women with primary CMV infection is lacking. The aim of this study was the comparison between the two regimens for maternal-fetal transmission rates.

**Methods:** This retrospective study included pregnant women with primary CMV infection diagnosed in the first or early second trimester at the Department of Obstetrics and feto-maternal Medicine at the Medical University of Vienna between 2010 and 2022. Pregnant individuals were treated with either 300IE HIG/kg every 4 weeks or with 200IE HIG/kg every 2 weeks depending on local protocol. The primary outcome was maternal-fetal CMV transmission rate evaluated by urine CMV PCR of the newborn. Evaluation of adverse pregnancy outcomes, as well as neonatal outcome up to two years of age were undertaken. **Results:** Overall, 36 women (4 weeks: n=26; 2 weeks: n=10) and 39 newborns (4 weeks: n=29; 2 weeks: n=10) with a median gestational age at first HIG administration of 13.1 weeks were

included. There was no difference in cCMV between the HIG every 4 weeks group and the HIG every 2 weeks group (33.3% vs. 30.0%; p=0.850). Abnormalities in fetal ultrasound was present in three fetuses and fetal MRI anomalies in four fetuses related to cCMV infection with no significant difference between the two groups. Newborn intensive care unit admission (4 weeks: 21.1% vs. 2 weeks: 0.0%; p=0.118) and preterm delivery (4 weeks: 26.3% vs. 2 weeks: 0.0%; p=0.075) were tendentially more frequent in the HIG every four weeks group. **Conclusions:** HIG administration every 2 instead of every 4 weeks does not improve maternal-fetal transmission rates. Alternative therapies for the prevention of maternal-fetal transmission rate after cCMV infection such as Valaciclovir therapy, are considerable.

#### ANTIIPHOSPHOLIPID ANTIBODIES SCREENING IN WOMEN PRESENTING WITH PRETERM DELIVERY DUE TO PREECLAMPSIA OR PLACENTAL INSUFFICIENCY – IS IT WORTH IT?

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**Problem statement:** Preterm delivery due to preeclampsia or placental insufficiency (PREPI) is one of the clinical criteria for obstetric antiphospholipid syndrome (APS). Although previous case-control studies reported higher prevalence of antiphospholipid antibodies (aPL) in these women (up to 17.8% of cases), due to insufficient evidence, current guidelines give conflicting recommendations regarding testing for aPL in this setting. We aimed to assess the proportion of women with positive aPL when screening was performed in these circumstances. **Methods:** A retrospective observational study was conducted. Data from deliveries occurring up to 34 weeks (January/2018 to March/2021), due to PREPI, were retrieved. Previous known APS were excluded (Sapporo's criteria). Postnatal weight percentile was calculated using the Hadlock formula. Statistical analysis was performed using SPSS® 27.0. **Results:** Premature labor due to PREPI occurred in 34 women (mean - 31 weeks of gestation). Preeclampsia was recognized in 15 cases (44.1%), 17 women (50.0%) had fetal growth restriction and 2 cases (5.9%) had other features of placental insufficiency. Most women were nulliparous (67.6%), 26.5% had one previous delivery and 5.8% were multiparous. None had a previous history of spontaneous abortions or fetal death. Postpartum obstetric consultation occurred in 25 cases (73.5%). Screening for aPL was accomplished in 22 women, of which 7 (20.6%) had a result that was considered positive [4 lupus anticoagulant (LA), 2 anticardiolipin antibody (AC) and 1 anti-2 glycoprotein-I antibody (AB2)]. All women with a positive first test, repeated it 12 weeks after, with 4 cases (18% of the tested women) presenting a persistently positive result (2 LA, 1 AC and 1 AB2).

**Conclusion:** Despite the small sample size, our results show a high proportion of positive aPL in women presenting with PREPI. This is in accordance with previous studies. Our work confirms the importance of establishing consistent recommendations regarding the criteria for aPL testing in PREPI and maintaining consequent and appropriate follow-up. Larger studies would be of the utmost importance to better establish the importance of screening these women, given the potential impact in future pregnancies and/or clinical settings with increased thromboembolic risk.

#### CHALLENGES AND SOLUTIONS OF MAJOR THALASSEMIA COMPLICATED BY PULMONARY TUBERCULOSIS, SEVERE PREECLAMPSIA AND HELLP SYNDROME: A RARE CASE REPORT

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**Problem Statement:** Thalassemia pregnancy should be treated as a high-risk pregnancy. Given the fact that the consensus and studies on Thalassemia traits in pregnancy are still limited, this study aims to report a case of beta-Thalassemia Major complicated by pulmonary tuberculosis, severe preeclampsia, and hemolysis, elevated liver enzymes, and low platelet count (HELLP) syndrome which has not been previously reported in any literature as well as to discuss the





challenges and solutions in managing this patient. **Methods:** Case Report. **Results:** A 23-years old primigravida was admitted to the hospital with beta-Thalassemia Major and co-existing pulmonary tuberculosis. She was anemic, stunted, and underweight. Hepatosplenomegaly was found. the lowest Hemoglobin level was 5g/dL, a hematocrit level of 22%, and her ferritin was 5816 µgram/L. Further examinations with electrocardiography and echocardiography showed normal results. Fetal ultrasound and Doppler impression were within normal limits. Fetal Non-Stress Test was routinely performed with reactive results. Her blood pressure suddenly increased at 39-40 weeks of gestation (180/110 mmHg) accompanied by HELLP syndrome. Termination of pregnancy was carried out by Caesarean Section. She gave birth to a female baby girl with a birth weight of 2330 grams. During pregnancy, the patient received antithrombotic in the form of Aspirin and Heparin in the post-partum period. Cardiac function and general condition monitoring were carried out together with the Department of Cardiology and Hemato Oncology. **Conclusion:** Many considerations remain challenges to treating Thalassemia in pregnancy. To optimize obstetric management, insights into the pre-existing medical problems and anticipation of the potential complications related to Thalassemia syndromes along with multidisciplinary approaches hold pivotal roles in addressing this case.

**Keywords:** Beta-Thalassemia Major, Pregnancy, Pulmonary Tuberculosis, Preeclampsia, HELLP Syndrome

## ORAL PRESENTATIONS 4 - ART/IVF/INFERTILITY

### RELATIONSHIP BETWEEN SERUM PROGESTERONE CONCENTRATION AND PREGNANCY RATE IN CLEAVAGE-STAGE FROZEN-THAWED EMBRYO TRANSFER AFTER ARTIFICIAL ENDOMETRIAL PREPARATION

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**Problem Statements:** The embryo cryopreservation technique is an increasingly used therapeutic option in Artificial Reproductive Technique (ART). There is general consensus on the advantage to transfer a cryopreserved blastocyst rather than a cleavage-stage embryo. Nevertheless, in low-prognosis patients, a prolongation of culture until day 5 or 6 could not represent the best option. In such cases, it might be useful to freeze embryos on day 2 or 3. A correlation between the serum progesterone value, on or before the day of blastocyst transfer in Frozen Embryo Transfer (FET) after artificial endometrial preparation, and the success of the procedure has been shown. Different cut-off have been proposed for customizing luteal support. No data is currently available on serum progesterone value as a predictor of FET outcome in cleavage-stage. The search of such cut-off represented our primary endpoint. **Methods:** We performed a prospective observational cohort study. 42 low-prognosis patients aged 28-39 years candidate for an in vitro fertilization cycle were enrolled between October 2022 and July 2023. All patients underwent FET after an endometrial preparation protocol with hormone replacement therapy (HRT). Double blood sampling was performed, the day before (T-1) and the day of the procedure (T0), in order to assess the serum progesterone value and after 14 days to assess human chorionic gonadotropine. **Results:** The average serum progesterone value was 9.06 ng/mL at time T-1 and 12.93 ng/mL at time T0, with a wide range of distribution. No significant cut-off was found correlating with gravid outcome. Focusing on the difference between progesterone values measured at time T-1 and at time T0, the growth trend appeared to be higher in women with gravid success (P value 0.07). **Conclusions:** No specific cut-off of serum progesterone levels, measured at T-1 and at T0, was found correlated with biochemical pregnancy rate in our study. In pregnant patients a significantly higher delta PT0-PT-1, close to statistical significance, was shown compared with nonpregnant patients. The current study suggests the possibility to consider the progesterone delta value T0-T-1 as a useful parameter for customizing luteal support and increase pregnancy rate in FET after HRT.

### WHAT IS THE OPTIMAL CUT OFF VALUE OF NUMBER OF EGG DONATION FROM SAME EGG DONOR LIFE TIME?

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**Problem Statement:** Different country regulations required from single stimulation to maximum 6 stimulations for egg donors in lifetime. This is a balance between efficacy of the ART program and

donor safety. **Methods:** In this single center, 4 years of retrospective study was included oocyte donors (n=96) with repeating cycles of ovarian stimulation (COS). We evaluated the concordance between the follicle-to-oocyte index (FOI), number of oocytes retrieved, maturation rate (MR), utilization rate (UR) and the numbers of attempts from 1st to 6th. The mean age of the patients in this study was represented in dynamics (SD) from 1st COS program 23,2 (3,2) to 27,8 (3,7) years during final 6th cycle. **Results:** The mean number (SD) of mature oocytes retrieved was non significantly different and raised from the 1st attempt –18,46 (8,89), to 5th – 22,03 (10,16), with slightly decreasing during 6th COS – 21,55 (12,06). MR and UR indicators had a fluctuating picture of the dynamics of values. They either increased or decreased from one cycle to another. Mean values of MR was the lowest after 3rd COS (81%) and the highest – 4th COS (84%). UR dynamic was quite similar with lowest value after 1st cycle (12,0%) and the maximum 17,9% after 6th COS program. FOI parameter was measured within the values of 73,82 – 81,02, i.e. min value 73,82 (16,40) was observed after second stimulation cycle and max value – after fifth (mean = 81,02±18,26). These changes between cycles parameters were found to be not significantly different (p0.05). Regarding egg donation cycle outcome for recipients (age average 34,57) attempt 1st -3rd gave 96,14% fertilization rate, %66,89 used blastocysts rate and %60,77 clinical pregnancy rate. Recipients ( age average 33,19) attempt 4th- 6th gave %94.17 fertilization rate, %64,09 used blastocysts rate and %63,19 clinical pregnancy rate. **Conclusion:** The controversial dynamic of the changes of the embryological parameters and COS outcomes in the same donor's pool after repeated stimulation cycles with no statistically observed differences can be ground for making a positive decision both personally by the donor and the IVF specialist.

### GOLDEN EGG. DOES GENETICALLY TESTED OOCYTE CAN INCREASE EFFICIENCY?

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**Problem statement:** There is the possibility of evaluating the aneuploidy status of oocytes with the PGT-A method before vitrification. The chromosomal abnormalities in oocytes reach 60% for advanced maternal age while this figure may be around 30%-40% in donor oocytes. It is possible that 3-4 out of 10 donor oocytes to be taken will have chromosomal anomalies. **Methods:** 115 different egg donor stimulated by short antagonist stimulation protocol and after 35 hours post trigger injection 1726 mature oocytes collected. All oocytes' polar bodies biopsied after 2 hours from egg pick up and oocytes vitrified after polar body biopsy. All biopsied polar body samples analyzed by PGT-A techniques. After the PGT-A result all oocytes had thawing cycle and fertilized by donor sperm. First group included only euploid oocytes and second group included only aneuploid oocytes. After the fertilization all embryos followed up till Day 5 and Day 6 embryo cultured and by trophectoderm biopsy euploidy and aneuploidy rate determined by PGT-A technique. **Results:** Our studies have demonstrated that the aneuploidy ratios obtained from the polar body biopsy and the trophectoderm samples obtained from blastocysts using the same oocytes had a significant similarity with the aneuploidy ratios obtained from the PGT-A test. The post warming survival rate recorded as 95.93% (1650 oocytes survived out of 1720 frozen oocytes). Regarding polar body biopsy result 81,39 % ( 1400 oocytes were euploid out of 1720 oocytes), aneuploidy rate was %18,61. After fertilization by ICSI technique fertilization rate recorded as 91,57% and blastocysts rate recorded 71,88%. Regarding trophectoderm biopsy result by PGT-A was recorded 80,27% euploidy rate. Between euploidy rate of oocyte and embryo correlation recorded as 79,92% of the euploid oocytes were given euploid blastocysts after PGT-A test result. **Conclusion:** Donor oocyte aneuploidy testing may use specially when recipients using small batch of oocytes. The PGT-A based testing can be cost effective and more efficient for egg donation. Genetic testing of the oocytes may be beneficial for the selection of the most competent euploid cells.

### DYDROGESTERONE VERSUS CONVENTIONAL GONADOTROPIN RELEASING HORMONE ANTAGONIST FOR PREVENTION OF PREMATURE LUTEINIZING HORMONE SURGE DURING CONTROLLED OVARIAN STIMULATION

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**Problem statement:** Traditionally, during in-vitro fertilization for controlled ovarian stimulation (COS) with short protocol for prevention of premature luteinizing hormone (LH) surge clinicians use gonadotropin-releasing hormone antagonists (GnRH-antagonist). Recent data indicates that premature LH surge may be prevented also by progestins. Nowadays, there are limited studies about the outcomes of COS using of progestins. Therefore, this study aimed to compare the efficacy of progestins and GnRH-antagonists for blocking premature LH surge and premature ovulation in oocyte donors (ODs). **Methods:** In prospective, randomized study were participated one-hundred and four ODs. Recombinant gonadotropin was administered for COS in all participants. According to the ovarian response, Human Menopausal Gonadotropin was added. Intervention group (group I, n=55) received 20 mg of Dydrogesterone from the first day of stimulation till trigger day and the control group (group II, n=49) received GnRH-antagonist when the leading follicle reached 14 mm in diameter till trigger day. The primary outcome measure was the incidence of a premature LH surge, and the secondary outcome - the total number and metaphase II (MII) oocytes obtained by follicular transvaginal aspiration. **Results:** There were no statistically significant differences in patients' age, BMI and AMH levels between two groups. None of the participants experienced a premature LH surge and ovulation. There was no statistically significant difference in the number of received and MII oocytes between groups (23,7 vs 25.9 p=0.3), (18.3 vs 19.9 p=0.36) respectively. The duration of stimulation was similar also in both groups (9.6 vs 9.9 days, p=0.41). Similarly, there was no statistically significant difference in the total dose of gonadotropins (2269.2 IU vs 2423.4 IU, p=0.08). **Conclusion:** The results of the present study demonstrate the equal effectiveness of Dydrogesterone and GnRH-antagonist for prevention of premature LH surge without any adverse effect on oocyte quantity and quality. Dydrogesterone is a financially profitable and easy to use alternative to GnRH-antagonist, which can be used as in ODs as well as in patients where embryo transfer is not planned in the current cycle.

#### IS MY CLINIC READY FOR AI? EFFECT OF CYCLE NUMBERS AND DATA COMPLETENESS ON THE PREDICTION OF MATURE OOCYTES (MII)

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**Problem statement:** A significant issue for deploying accurate artificial intelligence (AI) prediction tools in assisted reproduction is the lack of large electronic patient databases to provide sound predictions. Clinicians are trained to infer clinical meaning from incomplete data, but AI may not be able to perform appropriately under these conditions. Here, we test how much clinical data completeness affects the accuracy of the AI prediction of MII oocytes at ovum pick-up. **Methods:** We curated a database of 440 controlled ovarian stimulation cycles, including IVF/ICSI cycles with patients as well as oocyte donors, collected in 2020-2022, with age, body mass index, antral follicle count, anti-müllerian hormone, MII, and gonadotropin dose as model variables. We trained two XGBoost AI models for MII oocyte prediction - one with higher variance (less robust) and one with lower variance (more robust). We assessed their efficiency with an R2 score while removing an increasing number of cycles. Further, we tested the predictions' R2 score after keeping all 440 cycles but randomly removing some of the values within each cycle. **Results:** Compared to the entire dataset, the R2 of MII predictions decreased from 0.19 (8% less accurate) to 0.05 (73%) for the higher variance model and from 0.28 (1%) to 0.19 (35%) for the lower variance model when 10% and 80% of cycles were missing, (see Figure 1 for all values), reaching a significantly lower accuracy with 20% (p=0.03) and 50% (p=0.05) fewer cycles, respectively. When all 440 IVF cycles were included, but some of the values within the cycle were missing, the R2 score decreased from 0.17 (16% less accurate) to -0.14 (166%) for the higher variance model and from 0.28 (1%) to 0.19 (33%) for the lower variance model with 10% and 80% of values missing, reaching a significantly lower accuracy with 40% (p=0.005) and 60% (p=0.007) missing values, respectively. **Conclusion:** Clinics should avoid incorporating AI tools based on incomplete internal databases. Even a 10% decrease in key data completeness lowers prediction accuracy, with likely effects on patient safety and treatment outcome.

#### SUPEROVULATION CYCLE. A NEW WAY TO HAVE BETTER ENDOMETRIAL RESPONSE DURING ERA AND EMBRYO TRANSFER CYCLES: A CASE SERIES

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**Problem statement:** Many patients benefit from a Superovulation regime, specifically in those cases where an optimal endometrial thickness is challenging to achieve with a standard medicated or natural frozen embryo transfer cycle. To study the safety and effectiveness of a new preparation method to improve endometrial response in patients with a thin endometrium ( $\leq 6$ mm). Proof of concept and validation study. **Methods:** A cohort of 14 patients with thin endometrium were treated with follicle stimulating hormone (FSH) or Menotropin (HMG) in low doses during the first phase of their cycle. Once at least 1 follicle of 17-18mm has been achieved and endometrial thickness (ET) was 7mm, triggering with human chorionic gonadotrophin (hCG) was performed. Ovulation was confirmed prior to starting progesterone (P4) support. For all patients, an endometrial biopsy for the Endometrial Receptivity Analysis (ERA) test was performed on day hCG+7 (Pipelle® CCD, France) as per the clinic's standard protocol for a modified natural cycle. Embryo transfer (ET) was performed according to the ERA result. The same endometrial preparation (including drug doses) was replicated between the ERA and ET cycles for all patients. **Results:** The 14 patients included in this study had a mean age of 38.21 + 2.83 years, and a BMI of 23.05 + 2.88. The mean number of previous failed cycles within this patient cohort was 1.77 + 1.73, with an endometrial thickness of 9.24 + 1.28 mm. After single euploid embryo transfers (sEET) in all patients, the outcomes obtained were as following: Pregnancy Rate 78.57% (11/14), and Live birth rate 63.64% (7/11). **Conclusion:** Low doses of gonadotrophins can be used in ERA and embryo transfer cycles when patients present with poor endometrial response to oestradiol and a thin endometrium. Obtaining a thicker endometrium, allowing for an endometrial biopsy to be performed, and successful clinical outcomes demonstrate the safety and effectiveness of the described, novel methodology.

#### ARE WE THERE YET? – REAL WORLD EXPERIENCE OF THE SAFETY AND EFFICACY PROFILE OF FOLLITROPIN DELTA USING DOSING ALGORITHM IN POTENTIAL HYPER-RESPONDERS

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**Problem Statement:** The COVID-19 pandemic necessitated adaptations in practices to mitigate ovarian hyperstimulation syndrome (OHSS), a serious complication of assisted reproductive technology (ART). Follitropin-delta, emerged as an alternative drug for ovarian stimulation for potential hyper-responders, using weight and AMH adjusted dosing algorithm. This study aims to compare safety and effectiveness of implementing follitropin-delta in potential hyper-responders during the pandemic to other real-world experience (RWE). **Methods:** Retrospective analysis conducted on potential hyper-responders (BMI  $\leq 30$  and AMH  $\geq 30$  pmol/l) undergoing antagonist protocol ART cycles and personalised dosing using follitropin-delta algorithm between Jul-2020 and Oct-2022. Demographic characteristics and indicators for clinical efficacy and safety were collected and compared with published data, with a defined population of potential high responders<sup>1</sup>. Primary outcomes were the number of oocytes retrieved and OHSS rates. Secondary outcomes included the "freeze-all" rate, need for paracentesis, ongoing pregnancy(OPR) and livebirth rate(LBR). **Results:** 164 ART cycles with individualized follitropin-delta dosing were performed in 159 hyper-responder participants (Median AMH 42.6 pmol/l). Mean number of oocytes retrieved was 14.7  $\pm$  8.6. The OPR was 45.8% and LBR was 40.6% per fresh transfer. Twelve women developed moderate or high grade OHSS (7%), with ten experiencing OHSS post hCG-trigger (83%) highlighting need for judicious use of hCG-trigger. Of 31 women who had an agonist trigger, 2 developed OHSS. The OHSS cohort had a higher mean AMH (53.6  $\pm$  4) and a lower daily dose of follitropin-delta (mean 7.11 mcg). None required paracentesis, but one woman (0.6%) developed acute kidney injury requiring "freeze-all," with a 5-day inpatient stay and close monitoring until full recovery. 50% of the OHSS cohort had "freeze-all" (n=6), while remaining half had fresh transfers resulting in 5 livebirths and one miscarriage. The OHSS cohort had, on average, 6 additional oocytes and 3 additional embryos compared to all who received follitropin delta. **Conclusions:** Implementing personalised dosing with follitropin-delta in hyper-responders during the pandemic demonstrated a feasible alternative for favourable outcomes and adaptations for risk minimization in ART. Although a large RWE cohort





in hyper-responders showing encouraging outcomes, further research and long-term monitoring are required to validate these results.

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Comparison of Real World Experience (RWE) of individualised dosing of Follitropin delta use in ART cycles in potential hyper-responders

Our RWE data	Parameters	Outcome
Baseline (mean±SD)	Age (years): Mean (±SD)	33.3 (± 4.3)
	AMH pmol/L: Mean (±SD)	48.9 (± 11.3)
Clinical efficacy	Number of follicles aspirated (± SD)	23.3 (± 4.3)
	Number of oocytes retrieved (± SD)	14.7 (± 4.4)
	Number of metaphase II oocytes (± SD)	13.7 (± 4.3)
	Oocyte maturity rate (± SD)	68.3% (± 23.4)
	Oocyte maturity rate (± SD)	83.1% (± 7.6)
	Number of 2PN (± SD)	7.4 (± 4.4)
Pregnancy outcomes	Fertilisation rate	86.3% (± 25.3)
	Failed fertilisation rate	4.5%
	Cycle cancellation rate	3.5%
	Positive beta-HCG rate per fresh embryo transfer	82.9%
Safety outcomes	Ongoing Pregnancy rate per fresh ET	45.4%
	Low Birth rate per fresh ET	46.8%
	CrDS rate	22%
	Multiple pregnancy rate	1%

Observational Cohort studies	Wickert 2012 (Retrospective)	Seifman 2012 (Retrospective)	Prevez 2013 (Retrospective)	Overstreet 2012 (Retrospective)
Source	Fertility in Endocrinology	OBG	Journal of Clinical Endocrinology & Metabolism	Journal of Clinical Endocrinology & Metabolism
Time period	Mar 2008-Oct 2009	Jan 2008-Jun 2009	Oct 2011-Mar 2012	Jul 2009-Oct 2012
Setting	3 Centers (n=34 sites)	Quincy (n=37 sites)	Center (single site)	UK (single center)
Study type	Prospective	Retrospective	Retrospective	Retrospective
Protocol used with Follitropin delta	Both agonist and antagonist	Both agonist and antagonist	Antagonist for PGT-A	Antagonist
Cohort size (n= potential hyper-responders)	n=144 with AMH >35 pmol/L (70% of 204)	n=127 with AMH >35 pmol/L (Total 200)	n=38 with AMH >45 pmol/L (high AMH) (Total 74 with PGT-A)	n=119 (364 cycles) with AMH >30 pmol/L
Mean age	35.5 ± 4.7 years	35.3 (± 4.8) years	35.9 (± 4.6) years	35.3 (± 4.5) years
AMH upper limit	No AMH limit	35	32 (retrospective)	39
AMH (pmol/L)	53% had AMH >15 Mean AMH 27	80% >15.5 Mean AMH 27	Mean AMH 31.4 Median 35.5 (agonist & PGT-A)	Mean AMH 21.5 Median AMH 2
Follitropin delta Mean daily dose	55.4 mg daily	55 mg daily	55 mg daily	55 mg daily
Mean number of oocytes	52	52.2 (± 6.7)	50.2 (± 9.2)	54.7 (± 6.6)
Optimal response & 23 oocytes % hyper-responders	Not reported but 78.4% with > 25 oocytes (AMH 35 > 40) had > 19 oocytes	42% had > 24 oocytes (AMH 35 > 40) had > 19 oocytes	Not reported	Not reported
14 oocytes in hyper-responders	Not reported	8.4% (AMH 35 > 40)	Not reported	16% (AMH 30 > 40)
Cycle cancellations due to poor ovarian response	3.5%	3.6%	3.2%	4.5%
CrDS rate	3.3% (AMH 30 > 40)	Not reported	5.3%	4.2% (P/OA Phenotype A)
Failed ART rate	3.3% (P/OA all for CrDS) had	2.5% (P/OA all for CrDS) had	Not reported	2.5% (P/OA all for CrDS) had
Overall Pregnancy Rate (OPR) per transfer	32%	38.2%	43.4% (P/OA for best fresh and frozen embryo transfer)	33% (P/OA per fresh transfer)
Ongoing (OPR) / Live Birth Rate (LBR) per fresh ET	30% (P/OA) No LBR	Not reported	38.2%	Not reported
References	1. Wickert et al. Fertility in Endocrinology, 2012 2. Seifman et al. OBG, 2012	3. Prevez et al. J Clin Endocrinol Metab, 2013 4. Overstreet et al. J Clin Endocrinol Metab, 2012		

**AN INTERPRETABLE ARTIFICIAL INTELLIGENCE (AI) MODEL PREDICTS BLASTOCYST DEVELOPMENT FROM SEGMENTED IMAGES OF MATURE (METAPHASE II, MII) OOCYTES**

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**Problem Statement:** Oocyte evaluation, beyond nuclear maturity, is challenged by a lack of non-invasive markers of quality – presenting an interesting problem to solve with AI. Model interpretability (understanding how predictions are made) has received increasing attention in medicine. Our aim was to develop and validate an interpretable AI model for oocyte assessments by leveraging image segmentation to predict blastocyst development. **Methods:** Focusing on 3 specific regions of the oocyte—ooplasm, perivitelline space (PVS), and zona pellucida (ZP)—a Fully Convolutional Branch Transformer model was developed to segment 2-dimensional images of denuded MII oocytes. Average intersection over union scores were 98.1 ± 0.1%, 97.4 ± 0.6%, and 97.0 ± 0.8% for the ooplasm, PVS, and ZP respectively, indicating accurate segmentation by the model compared to ground truths, as labelled by 3 senior embryologists. A total of 47 features—comprising computations for each region (e.g. circularity), relative geometric features (e.g. ooplasm:ZP area), and cohort-related features—were determined for each sample. Utilizing these features as inputs, a LightGBM classifier model was trained on 40,074 oocyte images with associated laboratory outcomes, to predict blastocyst development. The importance of individual features to model predictions was determined using the Shapley method. The impact of removing features on model performance (in terms of area under the curve; AUC) was also assessed. **Results:** On a test set of 11,757 segmented oocyte

images, the blastocyst prediction model displayed an AUC of 0.63 (sensitivity=0.51 and specificity=0.66). The clinical variables—number of MII oocytes and age—were assigned the highest feature importance by the model, but the top ten extracted features corresponded to the ooplasm. Consistent with this observation, removal of ooplasm-related features resulted in a reduction in AUC from 0.63 to 0.57, suggesting its greater relevance to oocyte quality as opposed to extracytoplasmic features (PVS or ZP). **Conclusions:** Accurately segmenting images contributes to developing an interpretable AI model by ensuring exclusive assessment of oocyte features—enhancing trust in the tool. While age is a known predictor of oocyte competence, these results indicate additional measurable features should be considered to better understand oocyte quality. **DOI:** Authors are employees of Future Fertility.

**THE IMPACT OF EMBRYO BIOPSY TIMING ON PREGNANCY RATES IN PATIENTS UNDERGOING PREIMPLANTATION GENETIC TESTING FOR ANEUPLOIDY WITH FRESH EMBRYO TRANSFER**

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**Problem statement:** To assess whether late day 4 embryo biopsy is a comparable option to day 5 biopsy in terms of pregnancy and implantation rates in patients undergoing fresh embryo transfer and Preimplantation Genetic Testing for Aneuploidy (PGT-A). **Methods:** retrospective cross sectional chart review in an academic fertility unit. Couples undergoing In Vitro fertilization with PGT-A using fresh embryo transfer, between January 2013 and September 2022 with female partner age 42 years. PGT-A was performed using Next-Generation Sequencing (NGS) either on late day 4 or day 5. Patients were stratified by age (≤35 and >35 years). Pregnancy was defined as the presence of intrauterine gestation; implantation rate was calculated by dividing the number of sacs seen over the number of embryos transferred. **Results:** In patients ≤ 35 years of age, pregnancy rate was 57.7% in late day 4 biopsy group as compared to 42.2% in day 5 biopsy group (p value= 0.005). Similarly, in patient 35 years of age, late day 4 biopsy pregnancy rate was 68.7% as compared to 31.3% in day 5 biopsy group (p value 0.0001). Regarding implantation rate, there was no statistically significant difference observed between the two groups in patients ≤35 years old, with rates of 37% on Day 4 and 41.7% on Day 5 (p-value = 0.2329). However, for the age category 35, there was a statistically significant difference in the implantation rate between the two groups, with rates of 35.9% and 23.6%, respectively (p-value = 0.00454). **Conclusion:** Our study demonstrates that optimal timing of embryo biopsy for PGT-A has a significant impact on pregnancy and implantation rates with consideration of age categories. Tailoring the timing of embryo biopsy based on individual characteristics, particularly age, may contribute to reproductive success. Thus, late day 4 embryo biopsy stands as an alternative and viable option for patients and doctors planning fresh embryo transfer.

**CONSERVATIVE VERSUS RADICAL SURGICAL MANAGEMENT OF CESAREAN SCAR ECTOPIC PREGNANCY: A REPORT OF 2 CASES**

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Cesarean scar ectopic pregnancy (CSP) is a rare type of ectopic pregnancy that results from implantation of a blastocyst in a previous cesarean scar. It is an emerging complication of increasing cesarean rates. Early diagnosis is imperative to avert maternal morbidity and loss of fertility. There is currently lack of consensus on optimal management. Two cases of CSP are presented in this report. A 35-year-old G6P5(4014) with four previous cesarean sections (CS) was diagnosed with CSP at 9 weeks gestation. She has a completed family and was managed with total abdominal hysterectomy. Intraoperatively, a bulging mass measuring 3 x 2 cms was noted on the left lateral lower uterine segment. On cut section, a niche was noted at the area of the previous CS scar. Within the niche, is a gestational sac with a point of rupture, and a fetus measuring 2 x 1.8 cm. Second case is a 31-year-old G5P3(2-1-1-2) with secondary infertility, three previous cesarean sections, diagnosed with CSP at 5 weeks gestation following ovulation induction – intrauterine insemination. Single dose Methotrexate was given, however, suboptimal decline in serum β-hCG was noted and follow-up





sonogram disclosed an embryo with cardiac activity. Diagnostic hysteroscopy and laparoscopic resection of CSP was done. Hysteroscopy revealed ectopic gestational tissue at 12 o'clock position cephalad to the internal cervical os. Laparoscopy revealed ectopic pregnancy measuring 3 cm bulging beneath vesicouterine serosa. The gestational sac and products of conception were evacuated from the CS scar. Full thickness dehiscence of CS scar was repaired in two layers. These are the first documented cases of CSP in our institution.

**Keywords:** Cesarean section pregnancy, ectopic pregnancy, hysteroscopy, laparoscopy, methotrexate

### POST WAR EGG DONOR CYCLES OUTCOME: DOES PSYCHOLOGICAL ADJUSTMENT OF EGG DONORS AND STRESS FACTOR INFLUENCE EFFICIENCY?

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**Problem Statement:** Armed conflict has a dualistic impact on reproductive health, which is reflected in minor quantitative parameters differences but with some statistically significant qualitative changes. **Methods:** In this retrospective single center study 548 egg donors was included. Parameters observed: the number of oocytes harvested, number of MII oocytes, follicle-to-oocyte index (FOI), antral follicle count (AFC), maturation rate (MR), utilization rate (UR), fertilization rate and used blastocyst rate depending on the date of the start of the armed conflict in Ukraine on February 24, 2022. In this observational study same egg donors stimulated before and after war conflict. A group (n= 380) egg donation cycles are completed before war conflict and B group (n=168) egg donation cycles are completed after the war conflict. **Results:** The mean age (SD) was 25.7 (2.7), 35.9(5.2) and 26.5 (2.8) years in groups A and B respectively. Groups A and B had a similar mean number of oocytes retrieved (31,65±14,12 and 31,68±13,61), which was obtained as a result of the mean number (SD) of COS programs 3,4 (2,7) and 4,6 (2,3) in groups A and B, respectively. Statistical difference was mentioned for values number of MII oocytes: 25,76 (11,92) and 25,46 (11,73) and for AFC: 37,28 (15,04) and 34,98 (13,37) in groups A and B, respectively. Recipients from Group A (Age average 36,45± 14,01); gave 91,27% fertilization rate, 62,18% used blastocysts rate and 49,75% clinical pregnancy rate. Group B(Age average 37,18±14,16); gave 90,18% fertilization rate, 64,55% used blastocysts rate and 44,67% pregnancy rate. Unexpectedly, values for UR and FOI in group B were statistically higher: 96,9% (15,1) vs 93,1 (18,2) in group A (p=0.001) and 91,45 (11,20) vs 85,25 (15,97), (p=0.05) for both parameters, respectively, while opposite tendency was observed for MR, which mean value was statistically higher in A group than in B, accordingly 81% vs 80%, p=0.01. **Conclusion:** Unexpectedly, this study for the first time revealed statistically significant improvements in armed conflict related donors group of the values for the FOI and UR parameters, which usually could explain unexpected hypo-responsiveness but not in our study. The exact mechanism still needs to be defined in the future studies.

### PROGESTERONE-PRIMED OVARIAN STIMULATION COMPARED WITH GnRH ANTAGONIST IN FERTILITY PRESERVATION CYCLES FOR MEDICAL REASONS

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To minimize the impact that gonadotoxic chemotherapy, pelvic radiotherapy, and ovarian surgery may have on the woman's future reproductive potential, it is increasingly common to perform fertility preservation cycles. The utilization of oral progestins instead of GnRH antagonists is increasingly prevalent in ovarian stimulation in this type of treatments. Fifty-seven patients undergoing fertility preservation treatments at La Paz University Hospital were analyzed. Descriptive parameters such as age, BMI, AMH levels, type and dosage of gonadotropins, type of gestagen, stimulation days, number of oocytes obtained in follicular aspiration, and cryopreserved mature oocytes were assessed. 16 patients had undergone a prior cycle with GnRH antagonist. The results of the 32 preservation cycles were compared, employing a Student t-test for the variables number of oocytes retrieval, and the number of cryopreserved mature oocytes (stimulation days and gonadotropin dosage). **Results:** The mean age was 29.4 years(range:16-38), BMI 22.3(14.2-34.2), and AMH 1.98ng/ml (0.03-8.2). The mean cycle duration was 11.7 days (9-17) with a total gonadotropin dosage of 3178 IU(1500-4875), and a mean

daily dosage of 271 IU. The most frequently used progestin was desogestrel (89.5%), followed by AMP (7%), Drospirenone (1.8%), and levonorgestrel (1.8%). The indications for preservation were endometriosis (61.5%), oncologic causes (19.3%), transgender boys (8.8%), genetic reasons (5.3%), chronic disease (1.8%), and low ovarian reserve (3.5%). We obtained 9.8 oocytes on the day of puncture (0-41), and 8 mature oocytes(0-37) were developed. In the cycles compared with antagonist use, when employing oral progestins, an average of 6.69 oocytes were retrieved versus 6.19(p=0,37); and 4.69 mature oocytes were collected versus 4.75(p=0,48). While in 56.25% of cycles(n=9), more mature oocytes were obtained in the antagonist cycle, the results are not statistically significant. Statistically significant differences were found in the duration (10.88 days with progestins and 12.63 with antagonist, p=0.002) and total gonadotropin dosage (3128.13 IU with progestin and 3506.25 with antagonist, p=0.016). **Conclusion:** There were no significant differences in the outcomes of fertility preservation cycles using oral progestins versus antagonist; however, the cycles with gestagen exhibited shorter durations and lower gonadotropin dosages. Although randomized studies with larger sample sizes are necessary to draw definitive conclusions, oral progestins inhibition could potentially serve as an effective alternative with reduced cost and greater patient comfort.

### SOCIAL FREEZERS – DO THEY EVER COME BACK

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**Problem statement:** Oocyte cryopreservation for non-medical purposes has been widely prompted amongst young women who tend to delay their reproduction. As the methodology has secured its safety and efficiency in the assisted reproduction technology (ART) laboratory, the interest in oocyte cryopreservation has increased highly. But do social freezers ever come back and use these oocytes, or they keep them as a safety boat with no real near-future plans for reproduction? **Methods:** The following study has been performed as a retrospective analysis of 296 women who had oocyte freezing procedure for non medical (social) reasons, medical conditions (oncological treatment) and oocyte donation from January 2013 to June 2023 in ObGyn Hospital "Dr Shterev", Sofia, Bulgaria. **Results:** Through the observed period 190 women with 221 procedures froze their oocytes for future use, as 9.47% of them had certain medical conditions and 7.36% were hindered to use their reproductive cells at the day of the oocyte retrieval (absence of spermatozoa, sickness). The average age of the women in this group was 35.59±1.50 years and the mean number of cryopreserved oocytes was 5.63±1.37 per women. Compared to social cryopreservers, and bound to the Bulgarian legislation, the 106 women who donated their oocytes were younger (28.86 ±1.53 years (p0.05)) with 7.34±1.73 (p0.05) cryopreserved oocytes per donor. As the clinic has well represented program for oocyte donation 82.07% of the donors were used and resulted in 37 clinical pregnancies with 47 children born. In the same period only 46 (24.21%) women who stored gametes in our cryobank came back and claimed them for ART treatment. As a result 9 clinical pregnancies had been registered and 10 children were born. An intriguing fact we can point from the medical history of the clear social freezers is the record of previous procedure(s) for abortion on demand. It was evident for 12.02% of the women in this group. **Conclusion:** According to the results we observe it is evident that patients need more clarity towards oocyte cryopreservation and consequent fertility treatment procedures. More awareness to the most preferable age for cryopreservation and number of oocytes to be stored should be raised.

### LONG-TERM IMPACT OF COVID-19 PANDEMIC ON ART-MEDIATED BITHS IN LOMBARDY, ITALY

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**Problem Statement:** What is the overall impact of the COVID-19 pandemic on assisted reproductive technology (ART)-mediated birth rates? **Methods:** We retrieved data from regional registries of



Lombardy, a large area of about 10 million inhabitants that experienced one of the deadliest COVID-19 outbreaks in the world. Deliveries occurring between 1st January 2019 and 31st December 2022 were considered. The absolute number of ART-mediated births per month after the advent of the pandemic was compared with the prepandemic period (2019). **Results:** The number of ART-mediated births per month and percentage variation compared to the same month of 2019, are presented in the figure. The grey columns represent the number of births. The red points and the red line connecting them represent the variations compared to 2019 data. The horizontal black continuous line represents the 0% variation. A considerable decrease in ART-mediated births emerged in December 2020 (-86.6%), January 2021 (-99.2%), and February 2021 (-57.8%). The number of ART-mediated births occurred in 2021 remained lower than in 2019 approximately throughout the entire year. Conversely, during 2022, the absolute number of ART-mediated births was higher than that observed in the prepandemic period (+13.8%, 95%CI: +8.3% to +19.4%), with the highest variation in August (+33.0%). Throughout the entire study period we observed the delayed effects of holidays, with lower conceptions in July-August (summer holidays) and late December and early January (Christmas holidays) causing the declines in ART-mediated births in the following April-May and September. **Conclusion:** The restrictions on ART clinics' activities had a marked effect on the number of ART-mediated births. Number of births declined in 2020 and 2021 but then boosted-up in 2022. The overall detrimental impact was attenuated if not compensated by this latter recover.

#### CUMULATIVE DELIVERY RATE IN IVF CYCLES WITH OWN OOCYTES IN SPAIN: TREND OVER TIME AND ANALYSIS OF 516776 CYCLES FROM 2009 TO 2020

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**Introduction:** Cumulative delivery rate (CDR) has been proposed as an appropriate way of reporting success of an IVF program, incorporating both, fresh and frozen embryos. Nevertheless, views on the most appropriate parameters required to calculate such an outcome have been inconsistent. The aim of this study was to analyze the trend of delivery rate (DR) and cumulative delivery rate (CDR) in Spain over the last 11 years in IVF/ICSI cycles with own eggs.

**Methods:** Data from the Spanish National Registry of Assisted Reproduction including all ovarian stimulation cycles with autologous gametes, started in Spain from 2009 to 2020 (n=680171 embryos obtained from 516776 ovarian stimulation cycles started), were analyzed. DR and CDR were studied. Oocyte donation and PGT-a cycles were excluded. CDR was calculated as the percentage of stimulation cycles started in which, after the transfer of one or more embryos (fresh or thawed), at least one live birth is achieved. **Results:** The DR per fresh transfer remains steady (around 24%) throughout the period analyzed. However, DR for started cycle, which remains constant (17%) until 2013, shows a marked decline since then at a rate of 1% per year. In this same period was observed: a progressive increase in the percentage of cycles with frozen embryos (from 29% to 48%), a greater number of cryopreserved embryos (from 0.9 to 1.6 embryos per started cycle), and a continuous decrease in the number of embryos in each cryotransfer (from 2.39 to 1.42). DR after cryotransfer per started cycle has increased exponentially from 4% to 24%. CDR showed a constant increase of 1.7% per year since 2012, going from 22% to 35% of deliveries per started cycle. **Conclusions:** Although the DR per cycle has been declining, the effectiveness of cryotransfer cycles has led to a rise in the delivery cumulative rate since 2012. Reporting CDR rather than success rates based on fresh embryo transfer will be more appropriate to understand the treatment efficacy.

#### REPRODUCTIVE OUTCOMES IN COUPLES WHO LOST THEIR CHILD DURING THE WAR: EVALUATING THE EFFECTIVENESS OF A STATE ASSISTANCE PROGRAM FOR POST-WAR FAMILIES APPLYING FOR ASSISTED REPRODUCTIVE TECHNOLOGIES

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**Problem Statement:** The reproductive potential and outcomes in families that have endured the tragedy of military losses remain understudied, despite the escalating frequency of wars over the past decades. Treating couples in such situations, who experience severe psychological trauma, are of very advanced age, and face natural

declines in fertility, poses a challenge for fertility specialists. In Armenia, the government has implemented an extensive program to assist such families, encompassing full funding for IVF programs, including gamete donation and surrogacy. The purpose of our study was to ascertain the reproductive potential and outcomes among families of fallen soldiers, as well as to evaluate the results and merits of state assistance programs for these families. **Methods:** In this prospective controlled study, we investigated 80 women aged 39-53 years who had lost their sons in the Artsakh war (group A), and 78 women (group B, Control) of the same age who had never had children. IVF procedures were conducted for all of them between 2021 and 2023. Both groups were divided into two subgroups based on age (advanced – 39-44; very advanced – 45-53) and the type of oocyte used (autologous or heterologous). X<sup>2</sup> (Chi-square) and Mann-Whitney non-parametric statistical tests were employed to assess differences between the two groups. **Results:** There was no statistically significant difference in the cumulative pregnancy rate between the two groups (27.9% vs. 25%, p0.05). In subgroups utilizing donor oocytes, pregnancy rates were significantly higher in women of advanced age compared to those of very advanced age (48% vs. 37%, p0.05). The average time to pregnancy (13.5 vs. 8.57 months) and miscarriage rate (30% vs. 21%) were significantly higher in the group of women who lost their child during the war. **Conclusion:** Families who lost their sons during the war even with very advanced age can achieve a good success rate through ART. Further studies are required to better understand the impact of post-war trauma on the reproductive characteristics of these families. Governmental financial assistance presents an unprecedented opportunity for these couples to overcome their tragedy and establish a new foundation for their families.

#### BREAKING THE SILENCE: SHEDDING LIGHT ON THE SILENT CONSEQUENCES OF EMBRYO QUALITY AND ANEUPLOIDY AND OBESITY IN HUMAN DEVELOPMENT

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**Introduction:** Obesity is a global health problem affecting both men and women. Understanding the impact of obesity on fertility and embryo quality is of significant interest in the field of reproductive medicine. This study aims to assess the influence of obesity on embryo quality and related variables in patients seeking assisted reproduction. **Objective:** The objective of this study is to evaluate the impact of obesity on embryonic quality and other variables associated with assisted reproduction cycles. **Methods:** The study included 919 patients who sought assistance from a reproductive medicine laboratory in Brazil. Patients were categorized into four groups based on their body mass index (BMI): below normal BMI, normal BMI, overweight, and obese. PGT-A analysis was conducted on all embryos, and thirty variables related to the patients' and their partners' reproductive cycles were evaluated. Statistical analysis employed the SPSS 26V program, utilizing one-way ANOVA tests for numeric variables and Tukey's test to identify intergroup differences.

**Results:** The results revealed that obese women had significantly lower embryonic top-quality on the third day compared to other BMI groups (p = 0.039). The mean embryonic quality on the third day was lowest in women with a BMI 30 kg/m<sup>2</sup> (55.7% ± 25.5), while the highest mean embryonic top-quality was observed in women with a normal BMI (20-25 kg/m<sup>2</sup>) (69.5% ± 26.1). However, no significant differences were found between groups regarding other variables, including age, ovarian response, oocyte recovery rate, fertilization rate, blastocyst production, blastocyst top-quality rate on the fifth day, and embryonic aneuploidy. **Conclusion:** This study provides evidence that obesity negatively impacts embryonic quality on the third day during assisted reproduction. However, it did not find a significant association between obesity and embryonic chromosomal abnormalities. These findings underscore the importance of addressing obesity in the context of assisted reproduction. Obese patients may benefit from lifestyle interventions, such as weight loss and improved nutrition, to optimize their chances of success. Future research should focus on understanding the mechanisms underlying obesity's effects on embryonic quality and developing interventions to mitigate these impacts.





## ORAL PRESENTATIONS 5 - FETOMATERNAL MEDICINE

### DETERMINING PREGNANT WOMEN'S BODY IMAGE PERCEPTIONS AND THEIR IMPACT ON SEXUAL RESPONSE DURING PREGNANCY

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**Problem Statement:** Body image refers to how individuals perceive and feel about their own bodies. It significantly influences various aspects of life, including sexual experiences. Individuals with positive body image experience less body-related anxiety during sexual activities and can focus more on sexual pleasure. The changes that occur in a woman's body during pregnancy can lead to differences in her perception of body image, which can also affect her sexual response. **Methods:** This descriptive study aimed to assess pregnant women's perceptions of body image and its impact on sexual response during pregnancy. A total of 321 pregnant women attending a university hospital's antenatal clinic were included in the study. The data were collected using the Body Image in Pregnancy Scale (BIPS) and the Pregnancy Sexual Response Inventory (PSRI). The study received ethical approval from the relevant institutional review board, obtained institutional permission, and obtained informed consent from the participants. **Results:** When examining the participants' sexual function before pregnancy, it was found that 33.3% had excellent function, 59.2% had good function, and 7.5% had bad function. During pregnancy, the distribution changed to 11.8% excellent, 54.2% good, 27.4% bad, and 4.0% rubbish. Participants with excellent sexual function during pregnancy had lower average BIPS scores compared to those with rubbish, bad, and good function. There was a weak negative correlation between participants' BIPS scores and their Before Pregnancy Composite Score and During Pregnancy Composite Score. Linear regression analysis indicated that participants' dissatisfaction with strength-related aspects of one's body (F2), dissatisfaction with complexion (F3), prioritization of appearance over function (F5), dissatisfaction with body parts (F7), and BIPS scores significantly influenced their During Pregnancy Composite Score. **Conclusion:** Perception of body image during pregnancy affects sexual experiences. As the perception of body image becomes more negative during pregnancy, it negatively impacts sexual response. Developing strategies to improve pregnant women's body image perception may also enhance their sexual function. Nurses and physicians providing care for pregnant women play an important role in this regard.

### MANAGING SUPRAVENTRICULAR TACHYCARDIA (SVT) DURING PREGNANCY, LABOR AND DELIVERY

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**Problem Statement:** Pregnancy introduces physiological changes that can lead to new-onset arrhythmias, with supraventricular tachycardia (SVT) being the most common. When recurrent and resistant to treatment, these arrhythmias pose a significant risk to both the mother and fetus. The complexity lies in managing SVT during pregnancy and postpartum, necessitating a comprehensive approach that considers altered pharmacodynamics, placental drug transfer, and maternal-fetal well-being. **Methods:** Case Report. **Results:** A 26-year-old primigravid woman at 35 weeks of gestation, with severe (class III) obesity and no prior history of arrhythmias, presented with a heart rate of 209 beats per minute (bpm). Initial interventions (vagal maneuvers, metoprolol, and adenosine) were unsuccessful. Diltiazem administration by cardiology team successfully converted the heart rate from 200 to normal rate and rhythm. She was subsequently admitted to labor and delivery for Pitocin induction of labor at 39 weeks gestation and had vaginal delivery with no postpartum hemorrhage. In the immediate postpartum period she had recurrence of SVT, she refused adenosine administration and was successfully managed with parenteral diltiazem administration. Both mother and baby were discharged home in stable condition on postpartum day 2. **Conclusion:** Managing SVT during pregnancy and postpartum is challenging but vital. Multidisciplinary collaboration is crucial while considering physiological changes, maternal-fetal well-being, and potential recurrence. Swift transition to alternative interventions like diltiazem or electric cardioversion, when initial treatments fail, are effective. Non-pharmacological strategies like ablation may offer long-

term solutions. Continuous postpartum monitoring is essential, as SVT can reoccur or persist. Educating patients about arrhythmia signs and symptoms is critical for timely care. By refining our approach and empowering patients, we can enhance the well-being of mothers and newborns in complex cases, ultimately improving pregnancy outcomes. At her postpartum cardiology visit, she had responded well to calcium channel blockers but not to beta-blocker or Adenosine. Her 2-D echocardiogram was normal with preservation of her ejection fraction. Her cardiac computed tomography angiography (CTA) was normal and she had normal electrolytes as well as thyroid function tests.

The authors have no relevant financial disclosures.

Institutional review board (IRB) approval not required because this is a case report.

### NEW MODIFIED SHIRODKAR TECHNIQUE "AKHAN TECHNIQUE" FOR URGENT CERCLAGE; ANALYSIS OF PRELIMINARY DATA

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**Objective:** Objectives of this study is to present and discuss preliminary data on the efficacy of the modified Shirodkar cerclage technique applied to patients identified as "Urgent Cerclage" in a highly homogeneous patient group. **Materials and Methods:** Fifty-four patients with singleton pregnancy and no additional perinatal pathology were included in the study, which was set to be performed from January 2017 to December 2021. The authors have no disclosure. Details of the Cerclage Technique are shown in figure 1. The clinical data of the patients who gave birth before and after 34 weeks of gestation were compared. ANOVA was used for quantitative data, and chi-squared test was used for qualitative data. Statistical analysis was performed using MedCalc® Version 19.8. **Results:** The mean preoperative cervical length was 16.31±6.42 mm, and the mean cervical length after cerclage was 31.06±4.94 mm (p<0.0001). Mean delivery week was 35.02±3.2. The operation time was found to be 29.56 ± 7.55 minutes (max: 47; min: 18). Distance between suture and external os vs time between surgery and delivery week there was a positive correlation (r= 0.303; p: 0.025)

			p 0.05
Age	33,3±7,25	33,56±4,75	0.884
Cerclage week	19,38±3,25	19,36±2,93	0.984
Prior cerclage	3 (33%)	11 (27%)	0.789
PRTM or II.TM abortus	10 (77%)	22 (54%)	0.14
Funneling	8 (62%)	22 (54%)	0.621
Preop. C.L.(mm)	11,61±3,66	17,7±6,41	0.002*
Post. C.L. (mm)	28±5,64	32,04±4,33	0.009*
15mm cervical length	10 (77%)	12 (29%)	0.0025*
Suture-Ex. os distance(mm)	20,3±4,3	23,75±3,47	0.005*
Time Suture – Deliv. (week)	15,46±4,85	17,7±3,33	0.065

Table 1: Data of patients who gave birth before and after 34 weeks of gestation

Preop C.L.: Preoperative cervical length; Post. C.L.: Postoperative cervical length; Sut-Ex os Distance : Suture - external os distance; Time Suture – Deliv.: Time between suture delivery

**Conclusion:** We propose that our modified technique is a good option for patients who are in the Urgent cerclage group or who have a previous history of unsuccessful vaginal cerclage. Although preliminary data support this view, more data is needed for objective evaluation.

### KNOWLEDGE, ATTITUDE AND PRACTICE ON GLYCEMIC CONTROL AMONG PREGNANT WOMEN WITH GESTATIONAL DIABETES MELLITUS IN A TERTIARY HOSPITAL IN THE PHILIPPINES

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**Problem statement:** Gestational diabetes mellitus is a condition which carbohydrate intolerance develops during pregnancy. It is considered as the most common metabolic disorder in pregnant women and is estimated to have a prevalence of 14% in the Philippines. Appropriate knowledge, positive attitude, right practice of gestational diabetes can prevent maternal and perinatal



complications, which impact significantly on the quality of life of the pregnant patients. Information can help people assess their risk of diabetes, motivate them to seek proper treatment and care, and inspire them to take charge of their disease. **Objective:** The general objective of the study is to assess the knowledge, attitude, and practices of glycemic control among pregnant women with gestational diabetes mellitus in a tertiary hospital. **Materials and Methods:** The study included pregnant mothers diagnosed with gestational diabetes mellitus seen at the high-risk clinic at Philippine General Hospital from October 2021 to December 2021. Data is collected using an investigator-administered questionnaire. 15 questions regarding knowledge were used to the Gestational Diabetes Mellitus Knowledge Questionnaire (GDMKQ). While 22 diabetes-related attitude questions using Diabetes Attitude Scale (DAS 3) developed by the University of Michigan Diabetes Research and Training Center (MDRTC). **Results:** The mean overall knowledge on GDM is 10.04 out of the maximum 15 score. While the overall mean attitude towards glycemic control is 3.53, implying of a positive attitude. It also shows that education, work status and history of GDM on relatives are significantly associated with knowledge adequacy on GDM. College level has significantly higher mean knowledge (11.44) than high school (8.81). Also, employed has significantly higher mean of 11.68 than unemployed (9.4). Similarly, those with relatives that has history of GDM has also higher mean of 11.04, as compared to only 9.22 among those without. Education level and history of GDM of their relatives is a significant factor of their attitude. **Conclusion:** Although a more significant portion of the subjects possessed adequate knowledge and positive attitudes, many GDM patients were unaware of gestational diabetes mellitus and glycemic control, which cannot be ignored. Pregnant women with lower education, unemployed, and without relatives with diabetes mellitus were particularly vulnerable.

#### STREPTOCOCCAL TOXIC SHOCK SYNDROME (STSS) AFTER IMMEDIATE POST-PARTUM INTRA-UTERINE DEVICE INSERTION

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Toxic shock syndrome from an intrauterine device (IUD) is very rare, but should still be considered as a source of infection in postpartum patients that rapidly deteriorate. Absolute contraindications for immediate postpartum IUD insertion are intrauterine infections at the time of delivery and postpartum hemorrhage. Toxic shock syndrome (STSS) is an acute life-threatening infection caused by *Staphylococcus* or *Streptococcus* species. STSS is commonly caused by neglected foreign objects in the vagina such as tampons, but rare cases may occur arising from an intrauterine device. This is the case of a 16-year-old primigravid with no known risk factors who delivered vaginally at a tertiary hospital in the Philippines. Immediate postpartum IUD was inserted as her contraception of choice. After twelve hours, the patient presented with sudden onset of high-grade fever and refractory hypotension with no associated postpartum hemorrhage. Broad-spectrum antibiotics and inotropes were initiated, and the intrauterine device was removed. Blood and IUD culture studies revealed growth of *Streptococcus pyogenes* confirming the diagnosis of TSS. Antibiotics were shifted based on the culture sensitivity results with the patient responding well to treatment. She was discharged on the 5th postpartum day with an unremarkable course in the wards. A review of her history revealed that prior to her admission at our institution, the patient attempted to seek consult at several different hospitals. At each hospital, the patient underwent an internal examination, increasing the risk of developing chorioamnionitis. This was confirmed by histopathologic examination of the placenta with findings of neutrophils in the sub-chorial intervillous space. The aim of this study is to highlight the importance of maintaining a high index of suspicion for IUD-related infections, prompt antibiotic administration, and removal of the device to eliminate the source of infection.

#### POSTPARTUM ECLAMPSIA: POSTERIOR REVERSIBLE ENCEPHALOPATHY SYNDROME DIAGNOSED AT POSTPARTUM DAY 11

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**Problem Statement:** Posterior reversible encephalopathy syndrome (PRES) is an obstetric emergency that has been discovered in a handful of puerperal women with eclampsia. This clinical-neurologic entity has a characteristic imaging finding of vasogenic edema at the bilateral parietal and occipital lobes. It is postulated that PRES occurs

secondary to failure of autoregulation in acute changes in blood pressure. However, the global burden of PRES associated with eclampsia is unknown. This is the first reported case in the Philippines. This report aims to share our experience, highlight the importance of prompt diagnosis and treatment, and establish patient education about the prodromal symptoms of postpartum eclampsia. **Methods:** We present a 24-year-old G1P1 (1001) postpartum Day 11, who was admitted for seizures. On her 10th postpartum day, the patient suddenly developed severe occipital headache, nape pain, and diplopia. Within 6 hours, she experienced a 1-minute generalized tonic-clonic seizure and loss of consciousness. At the ER, her blood pressure was 190/110 mm Hg while the rest of her vital signs were within normal limits. A second episode of tonic-clonic seizure associated with diplopia and loss of consciousness resolved after administering diazepam 5mg intravenously. Initial evaluation showed eclampsia, diplopia and proteinuria. Magnesium sulfate infusion was given. An electroencephalogram obtained 24 hours post-ictal was normal. Unenhanced cranial computerized tomographic (CT), which was performed on Day 2 post-ictal, showed confluent, fairly symmetrical, bilateral white matter hypodensities involving the white matter of the bilateral frontal, parietal, and occipital lobes consistent with PRES (Figure 1). No evidence of intracranial lesions nor infarct was appreciated. **Results:** All neurological symptoms resolved within three days once the blood pressure was controlled. A follow-up unenhanced CT scan was performed on Day 39 post-ictal, and showed non-delineation of the previously reported bilateral parietal and occipital lobe white matter hypodensities. **Conclusion:** PRES generally has a good prognosis but can be fatal. This case report stresses the attention on this rare complication of eclampsia as management requires early diagnosis and prompt treatment.



Figure 1. Unenhanced cranial CT 48 hours post-ictal show confluent, symmetrical, bilateral white matter hypodensities involving the bilateral frontal, parietal, and occipital lobes (arrows).

#### A DELPHI CONSULTATION ON CRITERIA SUPPORTING THE DECISION TO REFER PREGNANT WOMEN FROM A PRIMARY CARE PROVIDER TO A SPECIALIST DURING ANTENATAL FOLLOW-UP

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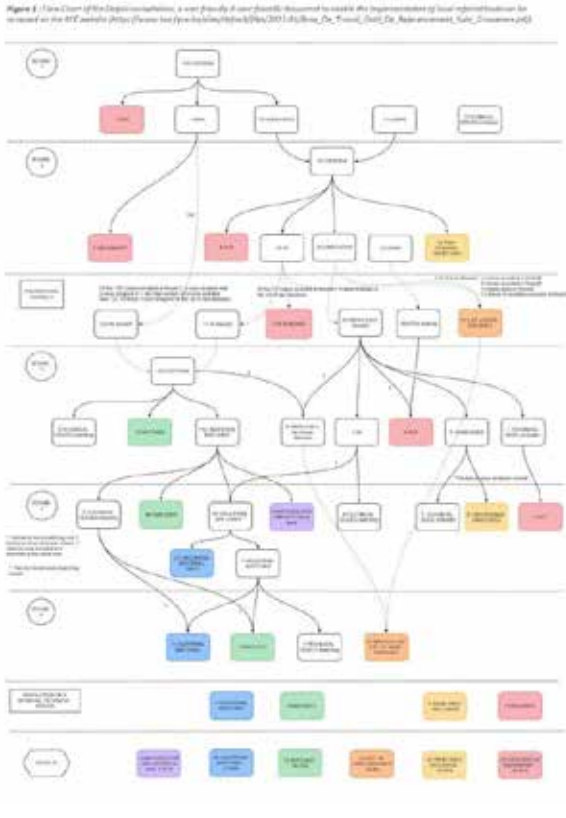
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**Problem statement:** In Belgium, primary care follow-up is permitted for low-risk pregnancies, but practitioners lack guidelines on when to refer patients to obstetrics and gynecology specialists. Our objective was to develop a Belgian tool to assist primary-care practitioners in making appropriate referrals. **Methodology:** We conducted a modified Delphi consultation to establish consensus. We gathered a panel of 30 healthcare professionals with extensive experience in antenatal follow-up, including equally gynecologists, midwives, and general practitioners. Using existing literature, we selected five "referral actions" (actions to be taken by the primary-care practitioner in response to a given situation) and 153 "criteria" (relevant clinical and non-clinical situations that may arise during pregnancy). The Delphi panel underwent six rounds of written consultation and three online meetings. Comments on previous rounds were anonymously analyzed and reported to support the next rounds or discussions. Online meetings were held to discuss relevant comments, which were confirmed in subsequent written rounds. Consensus was set at 75%, with items receiving 25% of votes or less being excluded. **Results:** The panel achieved consensus on four referral actions: antenatal follow-up in primary care, specialist's advice, referral to a specialist, and emergency referral. From the initial 153 criteria, 41 were added after the first round, five more after the second round. Across five rounds, 23 criteria (10.91%) were excluded or considered redundant, while 22 criteria (10.43%) lacked consensus on inclusion or exclusion.





Additionally, 27 criteria (12.8%) were categorized as "rare diseases." For 58 criteria (27.49%), there was agreement on inclusion, but no referral action reached the consensus threshold. In nine cases (4.27%), agreement was reached on inclusion for one referral action, but another action did not meet the threshold. Finally, 72 criteria (34.12%) were successfully matched with a referral action. For an overview of the Delphi rounds, refer to Figure 1. **Conclusions:** While the Delphi panel did not reach complete consensus on the content of a comprehensive Belgian tool, agreement was achieved on 72 criteria, providing a common framework for the development of local referral tools. A user-friendly document to enable the implementation of local referral tools can be accessed on the KCE website.



**OOCYTE SELECTION: THE PRESSURE OF CONSTANT MUTATIONS VERSUS THE NEED FOR HEALTHY OFFSPRING**  
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**Problem Statement:** Three observations regarding oocyte physiology remain unexplained. Why are oocytes arrested in the diplotene phase of meiosis; what is the reason for rapid oocyte losses during childhood; and why are karyotype abnormalities the major finding in early pregnancy loss? A new theory poses that all DNA is constantly damaged by ionizing radiation (IR, \*Front Astron Space Sci 2022;9:1067491). **Aim:** To investigate whether the new theory can explain the three oocyte observations. **Methods:** The effects of IR over time on germline DNA were analyzed using published data about DNA damage due to IR and applied to oocyte survival and DNA structure. Muons were used as source of IR, as they are the prevailing ionizing particles at earth surface level; they hold an average energy of 4 GeV\*. **Results:** Homologous chromosomes in meiosis attached only at the sites of crossing form a highly fragile state of germline DNA; any ionizing particle hit, particle shower, particle-induced shockwave or particle-induced oxidative stress event likely will result in shearing of the chromosomal structures causing uneven chromosomal separation and/or multiple DNA breaks. The result is karyotype abnormalities as seen in early pregnancy loss tissue. Each day the human body absorbs enough muon energy to cause one double-strand break (DSB) in each cell\*; DNA DSBs are known to accumulate in primordial follicles with age. Oocytes with significant DNA damage are known to undergo apoptosis explaining the exponential decline in viable oocytes over time and loss of most oocytes by the time a woman reaches menarche. The greatest chance of healthy offspring is fertilization of a mutation-free oocyte; however, by age 15-30 years most oocytes will have many mutations. By exposing germline DNA in meiosis, any ionizing particle event is likely to cause major DNA damage, resulting in either oocyte

apoptosis or pregnancy loss. Thus, having the DNA in a highly fragile state results in loss of nearly all oocytes before menarche, yet remaining oocytes are free of mutations and ascertain healthy offspring. **Conclusion:** IR explains why oocytes are arrested in meiosis, the extensive loss prior to menarche and the karyotype abnormalities in pregnancy loss tissue.

**SPONTANEOUS INTRACEREBRAL HEMORRHAGE IN A COVID 19 POSTPARTUM WITH PREECLAMPSIA: A CASE REPORT**

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**Problem Statement:** Coronavirus disease 2019 (COVID 19) is a disease caused by severe acute respiratory syndrome coronavirus that has been associated with severe multiorgan complications. Unexpected development of this global health crisis makes health care practitioners unaware of the pathogenesis of this new disease. **Methods:** Strategies in management are constantly changing thus reports and case series are crucial in expanding our understanding of COVID 19 in pregnancy. At this juncture, there is less reported case of a spontaneous intracerebral hemorrhage in a COVID 19 postpartum and also limited reported cases of stroke in patients with postpartum preeclampsia. Presented in this paper is a case of COVID 19 patient diagnosed with postpartum preeclampsia which progressed to a spontaneous intracerebral hemorrhage. **Results:** Treatment of spontaneous intracerebral hemorrhage in pregnancy is multidisciplinary. The patient underwent left frontoparietotemporal decompressive hemicraniectomy and evacuation of hematoma, treated with low molecular weight heparin, antihypertensives and anticonvulsants. **Conclusion:** Stroke rarely happens during pregnancy but once it occurs it is associated with preeclampsia. Acute Cerebrovascular disease is a significant manifestation of COVID 19 with incidence rate of 1-6% in patients which equates a large proportion of the COVID 19 population as SARS-CoV-2 affects millions of people worldwide which can be caused by direct endothelial inflammation, systemic inflammation and hypercoagulopathy. There should be a higher index of suspicion of stroke for COVID 19 patients presenting with neurological symptoms even in low risk patients. We must be critical in postpartum care of COVID 19 patients including coagulation studies, and administration of thromboprophylaxis.

**EXPLORING PSYCHIATRIC DISORDERS IN PREGNANT WOMEN: A RETROSPECTIVE ANALYSIS OF OUTCOMES AND IMPLICATIONS**

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**Problem statement:** The care and management of women with psychiatric disorders in pregnancy is both challenging and complex. Pregnancy is a critical period in a woman's life that can be accompanied by various physiological, emotional, and psychological changes. Among these changes, the emergence or exacerbation of psychiatric disorders poses a significant concern, as it can impact both maternal well-being and fetal development. The decision to maintain or start treatment can also pose a risk to the mother, fetus or infant and to the pregnancy outcomes. This retrospective study aims to address the gap in understanding the prevalence of psychiatric disorders in pregnant women within a central hospital population and to analyze the subsequent outcomes and implications for both maternal health and neonatal outcomes. **Methods:** We analyzed a total of 100 women who were referred to a specialized maternal health appointment in a central hospital over the course of 9 years. We collected and analyzed data on the diagnosis, treatment, exacerbations and pregnancy and perinatal outcomes. **Results:** Of 100 women with psychiatric pathology, 99 met the selection criteria. The women presented a median age at diagnosis of 22 years and our population had a median age of 30 years at the moment of delivery. Of those, 6,1% reported previous attempts of suicide. 32 were medicated at the time of pregnancy (32,3% with antidepressants, 8,1% with benzodiazepines, and 29,3% with antipsychotics). There were 2 cases of disease exacerbation. After delivery, 37,4% were discharged with some form of pharmaceutical treatment. There were 5 identified cases of postpartum depression and no reported cases of postpartum psychosis. **Conclusion:** In conclusion, this retrospective study sheds some light on the intricate landscape of managing psychiatric disorders in pregnant women. Recognizing pregnancy as a transformative juncture characterized by a cascade of physiological,



emotional, and psychological shifts, the study highlights the critical concern posed by the emergence or exacerbation of psychiatric disorders and serves as a clarion call for comprehensive, multidisciplinary approaches to the care of pregnant women with psychiatric disorders.

### LARGE ANTERIOR LOWER SEGMENT UTERINE FIBROIDS IN PREGNANCY--MANAGEMENT OPTIONS

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**Problem statement:** This is a case of a 37-year-old female who presented with intrauterine pregnancy at 37-week gestation and multiple uterine fibroids. A large, 14 cm anterior lower segment fibroid obstructing the fetal head warranted a cesarean section with a classical uterine incision. The patient was counseled regarding the possibility of hysterectomy due to risk of hemorrhage. This case is significant due to the unique challenges faced related to surgical approach, adequate preoperative planning, adaptability, dexterity, and intraoperative collaboration. This report highlights the extensive clinical decision-making process and intraoperative considerations that were necessary in managing this complex case, as well as discuss alternative management options. **Methods:** This is a case report. **Results:** A classical uterine incision at the fundus was indicated preoperatively due to the location of a large intramural fibroid at the right lateral lower segment of the uterus. Intraoperatively, however, multiple uterine fibroids of various sizes were noted at different sites on the uterus including fundus. The area left of the midline in the lower uterine segment was free of fibroids, therefore, we made a lower segment vertical incision. The infant was delivered without complications. The uterine incision was closed in a 3 layers and satisfactory hemostasis secured. Quantitative blood loss (QBL) was 915 mL. Hysterectomy was not warranted and blood was not necessary. **Conclusion:** The management of a large lower segment uterine fibroid poses unique challenges that required careful team collaboration. While a classical uterine incision was initially planned, a swift decision had to be made intraoperatively to opt for a low vertical incision, which proved to be a successful alternative in the face of extensive fibroid involvement at the planned site. Alternative management options included uterine artery embolization(UAE) or placement of UAE catheter/balloon prior to uterine incision by interventional radiology, etc. Myomectomy during cesarean delivery is discouraged because of the risk of severe postpartum hemorrhage. *The authors have no relevant financial disclosures.*

*Institutional review board (IRB) approval not required because this is a case report.*

### ORAL HEALTH IS OVERALL HEALTH: ASSOCIATION OF MATERNAL PERIODONTAL DISEASE WITH PRETERM BIRTH, A CASE CONTROL STUDY

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**Background:** When it comes to health, the most overlooked aspect of health in the Philippines is oral health. Numerous studies have reported the possible association of maternal periodontal diseases with preterm birth. However, their association remains controversial.

**Objective:** This study aims to determine the association between preterm birth and maternal periodontal disease. **Materials and Methods:** Preterm birth (PTB) or cases (n=28) included subjects who had spontaneous labor or rupture of membrane and delivered before 37 weeks of gestation. Full term birth (FTB) or controls were normal births at or after 37 weeks of gestation (n=28). Sociodemographic and health-related characteristics were obtained through interview and medical records. Full-mouth periodontal examination was performed on all mothers within 2 days of delivery. Three indices to assess periodontal diseases were utilized – Oral Hygiene Index, Simplified (OHI-S), Modified Gingival Index (MGI) and Lindhe Classification of Tooth Mobility. The number of missing teeth and the presence of dental caries, pus and calicular deposits were likewise noted. **Results:** Low socioeconomic status may be one of the possible barriers to oral health. It is evident that majority of the subjects had poor health seeking behavior - 94.6% visit the dentist only as needed and 53.7%

cannot recall their last dental consult. periodontal conditions – particularly gingivitis and dental caries - put a woman at a higher risk for preterm birth. Gingivitis is noted to be associated with preterm birth (p=0.0057) with an odds ratio of 20.25. Presence of dental caries is also an identified risk factor (p=0.232). **Conclusion:** Preterm birth is a worldwide problem with serious long-term repercussions. That being said, a multifaceted approach, targeting a number of risk factors of which oral health is one, is needed to effectively address the problem of preterm birth.

### NEWBORN CLAVICLE FRACTURES – 5 YEAR-REVIEW OF A CENTRAL HOSPITAL

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**Problem statement:** Clavicle fractures are one of the most common birth traumatic injuries that affect neonates. These fractures may cause pain, arm mobility impairment, and brachial nerve injury (temporary or definitive), and are responsible for parents' anxiety and concern. **Methods:** All cases of clavicle fractures diagnosed and registered during the neonatal stay between 2018 and 2022, in a central Portuguese hospital, were reviewed. Statistical descriptive analysis, odds ratios (ORs) and 95% confidence intervals (95% CI) calculations were performed with SPSS-26. **Results:** A total of 8132 births and 91 clavicle fractures were identified (1.12% incidence). This incidence varied according to mode of delivery: 0.04% (1/2512) in cesarean sections and 1.65% (9/5453) in vaginal births: 1.24% (46/3715) in eutocic, 1.33% (1/75) in forceps-assisted and 2.59% (43/1663) in vacuum-assisted births. An instrumented birth doubled the chance of clavicle fractures, with an OR 2.072, 95%CI 1.365-3.145 of fractures compared to eutocic births. Documentation by clavicle radiography was available in 78% of fractures. 96.7% of clavicle fractures happened in term births. 11% of newborns weighed less than 3000g, 41.8% between 3000g and 3499g, 37.4% between 3500 and 3999g, and 9.9% of newborns weighed 4000g or more. 15.4% (14/91) of clavicle fractures were in births registered as complicated by shoulder dystocia. Around half (49.5%) of the clavicle fractures occurred in first vaginal deliveries. 92.3% of the newborns were referred to a Neonatology follow-up appointment, although 3.3% of the infants missed it. Fifteen (16.5%) neonates had a suspicion of brachial plexus injury, but all of them regained normal arm mobility; 14 infants required physiotherapy. **Conclusion:** The 1.12% incidence of clavicle fractures in our hospital is comparable to the literature. An instrumental delivery was associated with a double risk of a clavicle fracture in vaginal births. Shoulder dystocia was common among these cases. Most cases were documented by radiography and were followed-up in the Neonatology clinic; 16.5% had a suspicion of nerve injury, but no infant had a permanent lesion.

### ORAL PRESENTATIONS 6 – HPV; GYNECOLOGICAL ONCOLOGY; DIAGNOSTIC PROCEDURES

#### HPV

#### DISCREPANCY OF CYTOHISTOLOGICAL FINDINGS IN HPV-POSITIVE PREMENOPAUSAL WOMEN: ARE THERE ANY RISK FACTORS INVOLVED?

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**Problem statement:** Discrepancies between abnormal cervical cytology or high-risk Human Papillomavirus (HR-HPV) infection and subsequent histological results are frequent. In this study, we aimed to determine the risk factors involved in the cytohistological discrepancy in premenopausal women with HR-HPV status.

**Methods:** A retrospective study included all women under 45 years-old (premenopausal) referred to cervical pathology consultation, in a tertiary center, between January 2020 and December 2021. Three groups were considered: ages under 30 years (G1); ages between 30 and 39 years (G2); and between 40 and 44 (G3). Cervical cytology results were grouped into low (NILM/ASCUS/LSIL) and high grades (ASC-H/HSIL). If cervical biopsy was performed, it was also grouped into low (CIN1) and high (CIN2/CIN3/CIS) grades. Subsequently, it was evaluated the presence of cytohistological discrepancy. The





primary outcomes comprised an evaluation of women's characteristics and potential risk factors for cytohistological discrepancy, including parity, smoking, oral contraception, immunosuppressive disease, HPV vaccination, type of HR-HPV infection. **Results:** A total of 465 premenopausal women were included, corresponding to 135 women in G1, 212 women in G2, and 118 women in G3. The median age of these women was 27, 34, and 41 years-old, respectively. The prevalence of HPV-16 was the highest in the oldest group (34%), whereas 95% of women in G1 were positive for HR-HPV others than 16/18 (notably HPV-52). The percentage of high-grade cervical cytology was 6%, 9%, and 7% with a rate of cytohistological discrepancy of 14%, 16%, and 11%, in G1, G2, and G3 respectively. By evaluating potential risk factors for these findings, infection by HPV-18 showed statistical significance ( $p=0,036$ ), with an odds ratio (OR) of 6,7 in G1. In G3, smoking habits ( $p=0,009$ ), previous cervix interventions ( $p=0,03$ ), and infection by HPV-16 were found as potential risk factors for cytohistological discrepancy, with an OR of 5,5, 4,8, and 3,5, respectively. No statistically significant results were found for women in G2. **Conclusion:** In conclusion, these findings highlight the importance of age and the role of HPV genotyping in assessing the risk of cervical abnormalities. Our data suggest an increased surveillance could be considered regarding individual risk factors and HPV genotype.

### GENITAL WARTS IN PREGNANCY-DIAGNOSIS AND TREATMENT THE MOST COMMON CAUSE OF LARYNGEAL PAILLOMATOSIS IN CHILDREN UNDER 10 YEARS OLD

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**Problem statement:** HPV infection is an epidemic of modern age with the highest number of infected girls between 18 and 30 years of age and the most common diagnosis are genital warts in early or developed stage at first born women. Due to the alerted immune status during pregnancy the spreading of HPV infection is progressive. During the labor any retention of the child in the birth canal leads to aspiration of HPV particles which further represents the most common cause of laryngeal papillomatosis in children. **Methods:** The study involved 60 pregnant women between 18 and 30 years of age diagnosed with genital warts in early and advanced stages that were treated with RF technique which enables the smooth vaginal delivery with no signs of HPV infection on genito-anal region. Radio wave technique involves a special combination of radio wave access evaporation and radio wave melting. Radio wave access evaporation causes the evaporation of HPV infected cells and by radio wave melting we get the bloodless removal of condyloma. **Results:** With Colposcopic examination we reveal subclinical stages of genital warts on the mucous membrane of the labia and the entrance to the vagina, and genital warts on the cervix which provides conditions for their immediate removal. The result of radio wave therapy is a bloodless surgical field with a precise and controlled removal of all forms of genital warts in one act throughout pregnancy. Operation is performed only under local anesthesia with a minimum damage to the surrounding healthy tissue, rapid recovery without accompanying infection, bleeding, recurrence, and a complete protection to the mother and fetus. **Conclusion:** Genital warts during pregnancy represent a risk to the fetus during vaginal childbirth regardless of the severity of the clinical picture. Absence of colposcopic diagnosis, avoiding removing warts in the pregnancy, use of the wrong treatment leads to progress of condylomata as for outputting an infection of the fetus, by aspiration of HPV particles in the birth canal with later occurrence of laryngeal polyps in children up to 15 years.

### CERVICAL CANCER SCREENING: IMPACT OF THE RESULT ON WOMEN'S SEXUAL DESIRE AND SATISFACTION

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**Problem statement:** Cervical cancer screening is considered an effective secondary prevention measure for HPV infection. However, there are some negative implications for women's sexual and psychological health. **Methods:** The main goal was to evaluate the impact of the screening result on women's sexual desire and satisfaction. We conducted a prospective study to recruit eligible participants for the National screening of cervical cancer on Primary Care. We administered the survey questionnaire at the time of conducting the screening to assess the participants' level of

knowledge about HPV ( $n=80$ ), and also administered the questionnaire again 4 to 6 weeks following the communication of the screening results. **Results:** The level of awareness and knowledge about HPV was low. Participants with altered results on screening were more anxious ( $p=0.036$ ) after receiving the result. However, we do not find any statistical difference on sexual desire or satisfaction. On the group of patients with normal screening results, there is an increase on sexual desire and satisfaction ( $p0.001$ ) and reduction on anxiety ( $p0.001$ ) after receiving the result. **Conclusions:** The knowledge of the cervical cancer screening result exerts an influence on women's levels of anxiety, as well as their sexual desire and satisfaction. An abnormal result is associated with a higher anxiety level. On the other hand, a normal screening result improves sexual desire and satisfaction and reduces the anxiety level of the majority of participants.

### COMPARISON OF CHATGPT AND PERPLEXITY'S RESPONSES ON HPV INFECTION AND HPV VACCINE

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**Problem Statement:** The general public utilizes artificial intelligence (AI) to obtain information on a variety of medical conditions due to the growing popularity of AI chatbots. It is still unclear whether or not AI robots can provide accurate information concerning education questions. The present study aims to evaluate the appropriateness and consistency of ChatGPT and Perplexity, the two most popular and freely available chatbots, in answering questions on various aspects of HPV infection and vaccination. **Methods:** A question set comprising twenty questions was prepared based on the frequently asked questions handout provided by the American College of Obstetricians and Gynecologists (ACOG). Because ChatGPT's answers to the same question may differ, it was asked each question three times. Various responses have been recorded in order to assess the consistency of ChatGPT's answers. Since Perplexity gave the same answer to the same questions, the questions were asked once, and the answers were recorded. The gynecology expert evaluated the answers as appropriate, inappropriate, or if there was a contradiction as inconsistent. Finally, all two AI robots' answers were rated and compared with each other. **Results:** The expert rated five answers as inappropriate and one answer as inconsistent for ChatGPT. Only one question was rated inappropriate for Perplexity. The inappropriate and inconsistent answers of AI robots are shown in Table 1. The percentage of answers rated as appropriate 70% for ChatGPT and 95% for Perplexity. **Conclusion:** As a result, it was thought that the reason for these different percentages was due to Perplexity's reliable references. The most common sources of Perplexity are the Centers for Disease Control and Prevention (CDC), National Institutes of Health (NIH), and ACOG. In addition, since Perplexity answers contain citations, the reader can assess the objectivity of the responses. The absence of additional declarations on the HIV-positive and immunocompromised patient groups in ChatGPT indicates a lack of information. Also, the images in Perplexity may increase readers' attention to the subject. On the other hand, Perplexity is more didactic since ChatGPT is in the form of dialogue, which can be more sincere to the reader and increase its readability.

### GYNECOLOGICAL ONCOLOGY

#### ACCEPTANCE, TOLERANCE AND COMPLIANCE OF WEEKLY PACLITAXEL THERAPY FOR EPITHELIAL OVARIAN CANCER

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**PROBLEM STATEMENT:** Every Year, 240,000 women diagnosed with ovarian cancer with five year survival rate less than 45%. Majority of ovarian cancer (85% to 90%) is epithelial in origin. Therefore, both surgery and chemotherapy required for comprehensive disease treatment. Weekly paclitaxel regimen is a new approach to chemotherapy in epithelial ovarian carcinoma. **METHODS:** Total 38 patients of EOC were included in which 18 were cases who received weekly dose dense paclitaxel therapy and 20 were controls who received three weekly paclitaxel therapy. After every chemotherapy course, evaluation was done for side effects and they were recorded grade wise from G0-G6 according to CTCAEv5.0 (Common Terminology Criteria for Adverse Events). Comparison and analysis of incidence and severity of side effects has been done using chi-square test and student t test using SPSS (software version 26). **RESULTS:** The grade 2 and above side effects were significantly less common with weekly dose dense paclitaxel carboplatin therapy as compared to 3 weekly paclitaxel carboplatin therapy. Mean grade of severity of side effects were significantly lower in weekly regimen



compared to 3 weekly regimen. **CONCLUSION:** Hence it is concluded that weekly paclitaxel regimen is well accepted, feasible and tolerated for both neoadjuvant and adjuvant chemotherapy in epithelial ovarian cancer.

#### A RANDOMIZED TRIAL COMPARING SURGICAL SITE INFILTRATION WITH LIPOSOMAL BUPIVACAINE TO THORACIC EPIDURAL FOR PATIENTS UNDERGOING LAPAROTOMY IN A GYNECOLOGIC ONCOLOGY SERVICE

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**Problem Statement:** Thoracic epidural analgesia (TEA) has been a key part of opioid-sparing multimodal perioperative analgesia with a failure rates as high as 30% and many patients will require supplemental opiates. Recently, Extended-release liposomal bupivacaine (LB) was approved by the FDA for surgical site infiltration to produce postsurgical analgesia. To date, there has never been a comparison between the analgesic efficacy of TEA and LB surgical site infiltration following open abdominal surgery. **Methods:** Patients (n=40) with gynecologic cancer and planned for laparotomy were randomized 1:1 to TEA or surgical site infiltration with LB. Participants rated their postoperative pain intensity on a scale of 0 to 10 every 6 hours and immediately before opioid medication. Coprimary endpoints were mean area under the curve (AUC) of visual analog scale (VAS) pain intensity scores and total opioid consumption from 0 to 48 hours postoperatively. The mean AUC of VAS pain intensity scores incorporates opioid consumption. Quality of recovery was assayed daily using the quality of recovery-15 survey instrument. Two sample t-tests and Wilcoxon rank-sum tests were used to compare the arms. **Results:** Mean age and BMI were 56 ±14 years and 30.6 ±13.6 kg/m<sup>2</sup>. The majority had invasive cancer (81%). Participants reported race as White (72.2%), Black (19.4%) and Asian (5.6%). Mean estimated blood loss was 659±987 mL and mean duration of surgery was 6.7±2.0 hours. Median length of stay was 4 days and did not differ between the two arms. Mean pain intensity scores were similar for TEA and LB (mean 3.7 vs 3.9), but total opioid consumption was lower in the LB arm compared to TEA (mean IV MME 34.1 vs 48.2). QOR-15 scores on postoperative day 1 and on day of discharge did not differ between the arms. The incidence of hypotension was similar between the arms; grade 1-2 and grade 3-4 hypotension were observed with EA in 31.3% and 12.5% of cases and in 25% and 10% of patients who received LB. **Conclusion:** Interim efficacy data suggest that surgical site infiltration with LB may be a valuable alternative to TEA for gynecologic oncology patients undergoing laparotomy on ERAS protocols.

#### A RARE CASE, A GOOD RESPONSE OF CHEMORADIOTHERAPY ON TEENAGE LEIOMYOSARCOMA: CASE REPORT

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**Problem statement:** Uterine sarcoma is rare case. It just 1.7 per 100.000 annually. It most often in the mean age 44.6 to 58 postmenopausal women, rare found in adolescents. Risk factors contribute are history of pelvic radiation, nulliparity, increasing age, obesity and tamoxifen exposure. The gold standard therapy is surgery while oophorectomy, adjuvant radiotherapy, and chemotherapy still controversy. **Methods:** Case report. **Results:** A 14 years old girl came with having intermenstrual bleeding for a year. Her menarche was 12 years old. We found good assessment for her vital sign, anthropometry and physical examination. Ultrasonography imaging showed 7.11x6.06x5.28centimeters tumour. First biopsy result was endometrial cartilaginous metaplasia and second result was endometrial sarcoma. The patient diagnosed uterine sarcoma I-II then. The tumour found inoperable on surgical resection planning because it found easily bleeding and immobile, pressed the organs around like bladder and rectum. So that the patient underwent chemoradiotherapy. Evaluating first chemoradiotherapy through CT scan abdomen, it showed that it still had solid mass with lymphadenopathy. The patient underwent second schedule of chemoradiotherapy and showed good response yet recurrency still happened. It mentioned on literature that leiomyosarcoma is a rare case, found mostly on premenopausal women, but our case is a teenager. It mostly located in uterine as same as in this case. Those risk factors mentioned above were not found in our case. Clinical manifestations found on this case were not specific maybe due to it happened on a teenager. Numerous scoring scale were not match

due to limited further examination. Leiomyosarcoma has poor prognosis and low of survival rate even in early stage who underwent surgical with chemoradiotherapy as adjuvant. Related to our case the patient was still a teenager, it helps to reach good prognosis seen from a good response of chemoradiotherapy. **Conclusion:** Leiomyosarcoma is a rare case, in addition happened in adolescent or teenager. Early diagnosis and complete surgical resection confirmed as a gold treatment yet this case is an example of a good improvement of leiomyosarcoma on a teenager who underwent chemoradiotherapy due to inoperable case.

**Keywords:** Leiomyosarcoma, teenager, rare case, chemoradiotherapy

#### PREVALENCE OF ADJACENT ORGAN INJURIES IN CESAREAN HYSTERECTOMY AMONG WOMEN HAVING PLACENTA ACCRETA SPECTRUM DISORDER AT A UNIVERSITY HOSPITAL IN SOUTHERN THAILAND

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**Problem statement:** Placenta accreta spectrum disorder (PAS) refers to the range of pathologic adherence of the placenta. The incidence of PAS is rapidly increasing worldwide. The morbidity of PAS included injuries to adjacent organs, extensive bleeding, disseminated intravascular coagulation (DIC), and even fatalities. Women with PAS are more likely to require cesarean hysterectomy for life-saving. This study is aimed to demonstrate the prevalence of adjacent organ injuries in cesarean hysterectomy at a university hospital in Southern Thailand and to compare the complications between conventional and posterior approached cesarean hysterectomies. **Methods:** A retrospective study of all pregnant women with PAS who delivered from 2006 to 2021 was conducted. This study collected data on the patients' characteristics, clinical outcomes and adjacent organ injuries. A comparison of rates of adjacent organ injuries between women who underwent conventional and posterior approached cesarean hysterectomy was performed using a chi-square test with a p value 0.05 was considered statistically significant. **Results:** A total of 174 pregnant women with PAS were recruited. The overall prevalence of bladder injuries is 16.2%, but the rate of unintentional bladder injuries was only 7.6% (excluding placenta percreta). The estimated blood loss [median (IQR)] during cesarean hysterectomy is about 3000 (1700, 6500) mL, operative times 207 (175, 243) minutes, and the amount of pack red cells transfusion is 3 (2,8) units. Comparison between conventional and posterior approached cesarean hysterectomy, revealed that the posterior approached group had lower estimated blood loss and shorter hospital stays but longer operative times without any negative effects on the fetal outcomes. In terms of injuries to adjacent organs, the posterior approached group had considerably lower rates of urinary bladder injuries (10.1% versus 26.6%, p=0.005) and ureteric injuries (0% versus 4.7%, p=0.049) than the conventional group. Also, the rate of DIC was lower in the posterior approached group (2.3% versus 15.6%, p=0.008). **Conclusions:** The prevalence of unintentional adjacent organ injuries among women with PAS in our series was low. Notably, posterior approached cesarean hysterectomy could lower the rates of surrounding organ injuries with less blood loss and blood transfusion and shorten the length of hospital stays.

#### PRETREATMENT SYSTEMIC IMMUNE-INFLAMMATORY INDEX FOR A PROGNOSTIC IMPACT IN PATIENTS WITH LOCALLY ADVANCED CERVICAL CANCER TREATED WITH CONCURRENT CHEMORADIOTHERAPY

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**Problem statement:** The systemic immune-inflammation index (SII) has been considered a prognosticator of survival outcomes in various types of solid cancer. Recent studies have shown that SII correlated with poor survival outcomes in early-stage cervical cancer. However, the evidence of the prognostic significance of SII was limited in cervical cancer patients with advanced stage. We, therefore, conducted this study to evaluate SII as a prognostic impact in patients diagnosed with locally advanced cervical cancer treated with concurrent chemoradiotherapy. **Methods:** A retrospective cohort of 426 patients diagnosed with cervical cancer stage IIB-IVA receiving concurrent chemoradiation in our institute from 2012 to 2021 were evaluated. Patients were categorized into two groups; primary cohort and validation cohort. The impact of SII and potential prognostic factors on overall survival (OS) and progression-free survival (PFS) were examined. A prognostic nomogram to predict survival and its





validation were performed. **Results:** Higher values of SII were associated with poorer PFS and OS in univariate Cox analysis. Among all hematological indices, SII was only an independent prognostic factor for survivals. In multivariate analysis, the factors independently impacting OS in primary cohort were SII  $\geq 475$  (HR 2.15, 95% CI 1.13, 4.09), the larger tumor size (HR 1.1, 95% CI 1.04-1.17), poor ECOG score (HR 4.82, 95% CI 0.48-48.66), and the presence of metastatic lymph nodes (HR 2.53, 95% CI 1.41-4.56). Also in the validation cohort, high SII resulted in poor survival outcomes. High SII was associated with shorter PFS in both cohorts. The nomogram integrating SII could predict 3-year and 5-year survivals with good discrimination ability. These results were consistent across the validation cohort. **Conclusions:** Increased values of SII result in poor OS and PFS in locally advanced cervical cancer. SII can be used as a new independent prognostic factor and could enable clinicians to more accurately estimate the survival of patients.

## IDENTIFICATION OF POLQ AS A KEY GENE IN CERVICAL CANCER PROGRESSION USING INTEGRATED BIOINFORMATICS ANALYSIS AND EXPERIMENTAL VALIDATION

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**Problem statement:** As the most common gynecologic malignancy worldwide, cervical cancer (CC) is a serious hazard to women's health. Therefore, the present study aimed to identify the key genes in CC progression using integrated bioinformatics analysis and experimental validation. **Methods:** The mRNA microarray and microRNA (miRNA) microarray were obtained from the Gene Expression Omnibus database, and the differentially expressed genes (DEGs) and differentially expressed miRNAs (DEMs) in the progression of CC were identified. GO and KEGG functional enrichment analysis, protein-protein interaction (PPI) network and significant subnetworks construction, and miRNA-target regulatory network construction were performed. Then, experiments in vitro were performed to validate the roles of the key gene in CC progression identified based on the results of integrated bioinformatics analysis. **Results:** Based on the mRNA dataset, GSE63514, a total of 1,318 DEGs were screened upon comparison of the CIN sample data with those of normal cervical epithelium samples, and 1,575 DEGs were screened between CC and cervical intraepithelial neoplasia tissues. Furthermore, based on the miRNA dataset, GSE86100, 166 DEMs were screened. According to the results of bioinformatics analysis, the DEGs structural maintenance of chromosomes 4 (SMC4), ATPase family, AAA domain-containing 2 (ATAD2) and DNA polymerase  $\theta$  (POLQ) were identified as hub genes in PPI network and were involved in the first significant subnetwork. In addition, these DEGs were predicted to be regulated by miR-106B, miR-17-5P, miR-20A and miR-20B, which were identified as DEMs. Therefore, it was hypothesized that the three DEGs (SMC4, ATAD2 and POLQ) may interact closely with each other in CC progression. Of note, SMC4 and ATAD2 are proved to be tumor-promoters in CC by previous studies. And in the present study, the roles of POLQ in CC progression were validated by cells transfection of small interfering (si)RNAs and Cell Counting Kit-8, Transwell, cell cycle and apoptosis analyses, and the results revealed that the downregulation of POLQ restrained cell proliferation, migration and invasion, and promoted apoptosis and the arrest of the cell cycle in the G2 phase. **Conclusion:** POLQ, which have a close interaction with SMC4 and ATAD2, may serve a vital role in the progression of CC.

## THYROID HORMONE RECEPTOR B KNOCKDOWN REDUCES SUPPRESSION OF PROGESTINS BY ACTIVATING THE MTOR PATHWAY IN ENDOMETRIAL CANCER CELLS

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**Problem statement:** Progestin resistance is a major obstacle to conservative therapy in patients with endometrial cancer (EC) and endometrial atypical hyperplasia (EAH). However, the related inducing factor is yet unclear. **Methods:** In the study, we assayed the levels of thyroid hormone in plasma of patients with EC and EAH, and evaluated the expression of thyroid receptor  $\alpha$  (TR $\alpha$ ) and  $\beta$  (TR $\beta$ ) in

the endometrium tissues via immunohistochemistry. THRB-silenced RL95-2 and KLE EC cells were cultured to investigate the response of progestins, including medroxyprogesterone acetate (MPA) and nomegestrol acetate. Cell migration and invasion assay were performed. Transcriptomics and Western blotting were conducted to investigate the changes in signaling pathways. **Results:** We found that the serum levels of triiodothyronine (T3) were significantly lower in patients with EC compared with healthy women. A strong expression of TR $\beta$  was observed in most patients with EC and EAH sensitive to progestin treatment. In contrast, TR $\alpha$  positive expression was detected in less than half of the patients sensitive to progestin therapy. Importantly, THRB, rather than THRA, knockdown promoted the viability and motilities of RL95-2 cells but not KLE cells. The suppressive effect of progestins on cell growth and motility significantly decreased in THRB-silenced RL95-2 cells. Multiple proliferation-related signaling pathways were enriched, and the activities of mammalian targets of rapamycin (mTOR)/4e-binding protein 1 (4EBP1)/eukaryotic translation initiation factor 4G (eIF4G) rather than phosphorylated protein kinase B (Akt) were remarkably boosted. Progestin treatment enhanced the effects, and the augmentation was partially abated on supplementation with T3. In THRB-knockdown KLE cells, the progestins-activated partial signaling pathway expression (either mTOR or eIF4G), and supplementation with T3 did not induce noticeable alterations. **Conclusion:** THRB knockdown enhanced the viability and motility of type I EC cells and attenuated the suppressive effects of progestins by activating the mTOR-4EBP1/eIF4G pathway. The status of THRB may play an important role in regulating the sensitivity of type I EC towards progestin therapy and lower expression of THRB is likely correlated with progesterone resistance. Our study opens a new window to explore the mechanisms of progestin resistance. **Conflict of interest statement:** The author declares no conflict of interest.

## DIAGNOSTIC PROCEDURES

### PUBIC SYMPHYSIS DIASTASIS: DIAGNOSIS AND MANAGEMENT

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**Problem Statement:** Pubic symphysis diastasis (PSD) is a rare post-partum complication that can be at times debilitating for some patients. It occurs in 1 in 300 to 1 in 30,000 patients with many patients not being diagnosed. Considering that PSD is a rare condition, it can be at times difficult to diagnose and can be confused with pelvic girth syndrome. Some of the risk factors for this condition include young, small and primigravid women, who underwent a prolonged active labor, had infant macrosomia, and underwent McRoberts maneuvers during the delivery. This condition is often treated conservatively but surgery is sometimes indicated when the pubic symphysis separation is severe. The prognosis is usually great if diagnosed and treated promptly. **Case:** A 23-year-old primigravid female at term gestation, presented to triage with regular contraction. She received and epidural and gave birth 24 hours later after a prolonged active labor. The infant was large for gestational age at 4560g birth weight. On post-partum day one she was found to have severe pelvic pain with significant difficulty walking. **Methods:** An Xray showed pubic symphysis separation of 1.8 cm that was managed conservatively with pelvic binder and a walker while in the hospital. She was discharged with instructions to follow up outpatient for physical therapy. **Result:** Patient had her mobility limitations improve with the use of the binder and walker. Her pelvic pain improved but it had not resolved by the time she was discharged. **Conclusion:** Since PSD is a rare condition and its symptoms overlap with other conditions that can be found post-partum, it is important to do diagnostic imaging in those patients that have the risk factor criteria for PSD and have pain with difficulty walking after delivery. Early diagnosis and providing mobility assistance during their post-partum stay is crucial to allow patients to ambulate and decreased the risk of blood clots. Outpatient physical therapy is also crucial to their recovery and return to normal daily activities.

No conflicts of interest to disclose.

No institutional review board (IRB) permission required. It is IRB exempt.

### DEVELOPING A PREDICTIVE MODEL FOR MINIMAL-MILD ENDOMETRIOSIS AS A CLINICAL SCREENING TOOL IN INFERTILE WOMEN: UTEROSACRAL TENDERNESS AS A KEY PREDICTOR

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**Problem statement:** Approximately one-third of women with minimal-mild endometriosis (EMs) have infertility, and the diagnosis of these women has been long delayed. A predictive model for minimal-mild EMs with good accuracy for screening these women in primary care would reduce the time to diagnosis, however, there is lack of such predictive model due to traditional non-invasive methods are of little use for this type of EMs. **Methods:** We conducted a single-center retrospective cohort study, including 1365 patients who underwent laparoscopy from January 2013 to August 2020. Patients were divided into a training set (n=910) to develop the predictive model and a validation set (n=455) to confirm the model prediction efficiency, with 2:1 ratio randomly. Preoperative history, symptoms and blood tests in the electronic medical record were collected by trained clinical researchers. Univariable and multivariable analysis were used with the training set to select independent predictors. The Hosmer-Lemeshow goodness of fit test, Net Reclassification Improvements and Integrated Discrimination Improvements were used to select the optimum model in the training set. The discriminations, calibrations and clinical use of the prediction model were tested in the both training and validation sets. **Results:** Body mass index, dysmenorrhea, dyspareunia, uterosacral tenderness and serum CA-125 were the most important predictors of minimal-mild EMs. The prediction model had sensitivities of 87.7% and 93.3%, specificities of 68.6% and 66.4%, and an area under the curve of 0.84 (95% confidence interval [CI] 0.81-0.87) and 0.85 (95% CI 0.80-0.89) for the training and validation sets, respectively. Calibration curves and decision curve analysis also showed the model having good calibration and clinical value. Uterosacral tenderness was found to be the most valuable predictor. **Conclusion:** This study developed a predictive model with good accuracy to identify infertile women with minimal-mild EMs based on clinical characteristics, signs and inexpensive blood test. This model would help clinicians to screen infertile women for minimal-mild EMs, facilitating the process of early diagnosis and treatment.

## ORAL PRESENTATIONS 7 - GYNECOLOGY

### UTERINE FIBROID IN A 16-YEAR-OLD ADOLESCENT MANAGED WITH A FERTILITY-SPARING APPROACH: A CASE REPORT

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A 16-year-old girl was admitted to the Gynecological Department of Children's Hospital with complaints on abdominal pain and increasing abdominal girth. Abdominal examination revealed a soft abdomen with a voluminous, partially mobile, pelvic mass. During the rectal examination a rounded mass about 10 × 9 cm in size, motionless, sensitive when displaced. Ultrasound of the pelvic organs revealed: a voluminous mass, displacing the uterus and the ovaries and measuring approximately 9,7x8,6x10,3 cm. Laboratory tests: complete blood count without changes, alpha-fetoprotein (AFP) - 3.18 IU / ml, human chorionic gonadotropin (hCG) - 0.1mIU / ml, CA-125 - 61.7 U / ml (reference values - 0.0—35.0 U / ml). The patient underwent MRI, which confirmed: the lesion, widely inhomogeneous, presented a large central areas inhomogeneously hypointense in the T2-weighted sequences and showed an inhomogeneous post-contrast enhancement, more evident at the periphery, and inhomogeneous restriction of diffusivity. The lower portion tightly adhered to the left portion of the uterine fundus, without a clear cleavage plan; the ovaries, located medially and characterized by the presence of multiple follicles, were not involved by the tumor. After multidisciplinary meeting, surgical excision of the mass was indicated. Median laparotomy was performed; upon opening, the abdomen was

widely occupied from the lesion, arising from the fundus of the uterus. The left and right ovaries were inspected and found to be grossly normal. No pathological lymph nodes or peritoneal implants were present. "En-bloc" resection of the mass was accomplished, but the encasement of the uterine fundus didn't allow to preserve the entrance of the fallopian tubes. The uterine wall was then reapproximated by double interrupted sutures in adsorbable suture. Grossly the resected specimen measured 9,7x8,6x10,3 cm. The histological conclusion was obtained on the 5th day of the postoperative period: a morphological picture of torsion of the adnexal masses against the background of a leiomyoma. The postoperative period was uneventful, the patient was discharged home on the 6th day after surgery. **Conclusion:** When young women present with steadily worsening abdominopelvic discomfort, it is crucial to include leiomyomas in the differential diagnosis despite the rarity of leiomyomas in adolescents.

### UTERINE TORSION AND PRESERVED REPRODUCTIVE FUNCTION: EXTREMELY RARE CASE REPORT

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A 4-year-old girl was admitted to the Gynecological Department of Children's Hospital with complaints of moderate pain in the lower abdomen and vomiting. The rectal examination revealed a rounded mass about 7 × 6 cm in size, motionless, sensitive when displaced. Ultrasound of the pelvic organs revealed: echographic signs of heterogeneous liquid volumetric formation in the projection of left appendages and structural changes in the uterus. Laboratory tests: complete blood count without changes, alpha-fetoprotein (AFP) - 0.65 IU / ml, human chorionic gonadotropin (hCG) - 0.35 mIU / ml, CA-125 - 97.0 U / ml (reference values - 0.0—35.0 U / ml). MRI conclusion: the tumor of the left uterine appendages. Intraoperative picture: Laparoscopic access in the pelvic projection revealed a conglomerate consisting of two cyanotic formations. The left adnexal mass is not changed (torsion of the uterus in the isthmus? cervix? 360 degrees), torsion of the right uterine appendages 1440 degrees counterclockwise was revealed. Detorsion of the body of the uterus was performed, the blood flow was partially restored, tissue changes were revealed after torsion in the isthmus part of the fallopian tube and the uterine ligament closer to the corner of the uterus on the left. Detorsion of the right uterine appendages was performed, the adnexal mass was necrotic and led to adnexectomy. Given the partial restoration of blood flow in the body of the uterus, it was decided to reject extirpation of the body of the uterus and to carry out re-laparoscopy in 2-3 days. During re-laparoscopy: the uterus of normal size. Areas of ischemic changes significantly decreased. Ultrasound of the pelvic organs on the third day after re-laparoscopy: the topography of the uterus is normal. The histological conclusion: a morphological picture of torsion of the adnexal masses against the background of a dermoid cystoma. The postoperative period was uneventful. **Conclusion:** The surgical group managed to save the uterus due to preserved blood flow. To conclude, the discrepancy between the imaging methods and the intraoperative picture in the patient is associated with the difficulties of diagnosing the rarest case of torsion of the uterus in clinical practice.

### SUCCESSFUL PULL-THROUGH VAGINOPLASTY FOR DISTAL VAGINAL AGENESIS: A CASE REPORT

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Distal vaginal agenesis is a rare malformation of the vagina, resulting in genital outflow tract obstruction. Thorough history taking and physical examination, supplemented by diagnostic imaging are essential to arriving at an accurate diagnosis and appropriate





management plan. We are presented with an amenorrheic, 13-year old patient who complained of pelvic pain. Perineal inspection revealed a pink dimple at the area of the introitus, with an intact hymenal fringe, and no vaginal opening. Magnetic Resonance Imaging (MRI) of the genitourinary tract and transrectal with transperineal ultrasound showed presence of hematometra and hematocolpos, consistent with distal vaginal agenesis. She underwent Pull-through vaginoplasty, excision of vaginal septum, with evacuation of hematocolpometra. An innovational vaginal stent, using a 10mL syringe barrel, pierced with holes was left in-situ to keep the vagina patent, while allowing drainage of blood. The patient tolerated the procedure well and was able to achieve regular menstrual flow following surgery.

## DISTAL VAGINAL AGENESIS PRESENTING WITH FECAL RETENTION FROM AN ABDOMINOPELVIC MASS

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**Problem Statement:** Distal vaginal agenesis is a rare form of female genital tract malformation that presents as cryptomenorrhea. It results from the failure of the urogenital sinus to form the caudal portion of the vagina. Through a thorough history, physical examination and appropriate imaging studies, an accurate diagnosis is integral in selecting the correct intervention for the patient. **Methods:** This is a case report of distal vaginal agenesis in a 10-year-old nulligravid, who presented with fecal retention from an abdominopelvic mass. **Results:** The index patient had no bowel movement for 4 days, and abdominal enlargement. On inspection, there was a 12.0 x 10.0 cm abdominal mass from the hypogastric region up to the umbilicus. Inspection of the external genitalia, the introitus appeared concave, with no appreciable introital opening. On digital rectal examination, an anterior bulge was palpated 0.5 cm from the anal verge. Transrectal/transabdominal ultrasound was performed to support the clinical findings. A pull-through vaginoplasty was performed with an unremarkable post-operative course. The patient was discharged with a patent vagina and resolution of her gastrointestinal symptoms. On follow-up, the patient had monthly menstruation after surgery with no recurrence of her gastrointestinal symptoms. **Conclusion:** Distal vaginal agenesis is a rare female genital tract malformation but should be included in possible differentials in cases presenting with a possible vaginal outflow obstruction. This case highlights the importance of a good history, complete physical examination and appropriate diagnostic work-up in patients presenting with no bowel movement, abdominal pain and a palpable hypogastric mass, with the consideration of a possible vaginal outflow obstruction. A good examination of the genitalia and a good understanding of the anatomy of each individual case is important in determining the best surgical approach.

## PAIN, GASTROINTESTINAL FUNCTION AND FERTILITY OUTCOMES OF MODIFIED NERVE-VESSEL SPARING AND FULL THICKNESS DISCOID RESECTION FOR DEEP COLORECTAL ENDOMETRIOSIS – A PROSPECTIVE COHORT STUDY

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**Problem statement:** There is an ongoing debate on surgical techniques for colorectal deep endometriosis (DE) and their effects on gastrointestinal (GI) function. The aim of this study was to prospectively investigate differences in pre- and postsurgical GI function, health profiles and pain symptoms in women undergoing colorectal surgery for symptomatic DE either with a modified segmental resection technique, so-called nerve-vessel sparing segmental resection (NVSSR) or full thickness discoid resection (FTDR). Besides, complication rates and fertility outcomes were evaluated. **Methods:** One hundred and sixty-two consecutive patients were included out of which 125 (77.2%) underwent NVSSR and 37 (22.8%) underwent FTDR. Complication rates, pain symptoms,

endometriosis health profile (EHP-30) parameters, lower anterior resection syndrome (LARS) scores and gastrointestinal function related quality of life (GIQLI) were evaluated pre- and postsurgically in a final cohort of 121 patients. **Results:** There were no differences between postsurgical prevalence of LARS in both surgery groups (14/98, 14.1% NVSSR; 2/23, 8.6% FTDR) with significantly decreased LARS scores and increased GIQLI values before versus after surgery in both groups (p<0.001). The overall grade III complication rate was 7/162 (4.3%) with no significant differences between NVSSR and FTDR groups. Overall EHP-30 and pain scores significantly decreased after a median follow-up of 41 (±17.6) months (EHP-30 51.1, SD 21.5 vs. 12.7, SD 19.3, p<0.001; dysmenorrhea, dyspareunia, dyschezia all p<0.001 both cohorts, respectively). The overall postsurgical pregnancy and life birth rate in infertile patients undergoing NVSSR and FTDR was 25/43, 58.1%; 5/9, 55.6%; 14/25, 56.0% and 5/5, 100%. **Conclusions:** NVSSR and FTDR for symptomatic colorectal DE confer a significant amelioration of GI function reflected by decreased LARS symptoms and increased GIQLI scores with no differences in postsurgical function in between the 2 techniques. Both techniques confer similar complication rates and effects on pain reduction and health profiles.

**Conflict of interest:** The authors have no conflicts of interest to declare.

## THE EFFECTS OF GINGER FOR PREVENTION POST-OPERATIVE ILEUS AFTER HYSTERECTOMY: A RANDOMIZED CONTROLLED TRIAL

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**Problem:** Postoperative ileus following hysterectomy has been observed in rate of 10-30%. Previous studies have indicated that ginger may alleviate the severity of abdominal distension and enhance the ability to eat in patients after cesarean section. **Objective:** This study aims to investigate the effects of ginger as an adjunct to the Enhanced Recovery After Surgery (ERAS) pathway after hysterectomy. **Methods:** This study was conducted as a randomized controlled trial with investigator blinding. Patients who underwent hysterectomy without requiring nothing-by-mouth (NPO) status were enrolled and allocated to study arms using a block of four randomization numbers. The control arm adhered to the ERAS pathway, while the study arm received ginger supplementation of 1 g starting 3 hours after the operation and 1 g after each meal, totaling 9 doses. Postoperative outcomes, including bowel functions, eating tolerability, wound complications, and side effects, were recorded. Data were analyzed using PASW Statistics, version 18 (SPSS Inc., Chicago, IL, USA). A p-value of 0.05 was considered statistical significance. **Results:** A total of 160 patients, with 80 patients allocated to each arm. The median age was 47 years old (interquartile range [IQR] 44.0-51.0), and the median BMI was 24.2 mg/m<sup>2</sup> (IQR 21.5-27.9). The median operative time was 130 minutes (IQR 105-165). The incidence of postoperative epigastric pain was 51 (31.9%), while bloating was observed in 71 patients (44.4%). Within 12 hours post-operation, flatus was reported in 41 patients (25.6%), and 46 patients (28.8%) experienced ileus. Laxative agents were required by 39 patients (24.4%). There were no significant differences in the time to first flatus (17.3±8.1 vs. 17.1±7.9 hours, p=0.869), time to tolerate a soft diet (11.7±6.1 vs. 11.2±6.6 hours, p=0.660), time to tolerate a regular diet (22.9±7.3 vs. 21.9±5.3 hours, p=0.324), or length of hospitalization (57.3±18.1 vs. 53.6±16.6 hours, p=0.180) between study arms. Additionally, a higher number of patients in the ginger group tolerated a regular diet compared to the control group (75.0% vs. 65.0%, p=0.168). No side effects related to ginger or febrile morbidity were observed. **Conclusion(s):** Ginger did not significantly decrease the incidence of post-hysterectomy ileus or enhanced the recovery of bowel function.

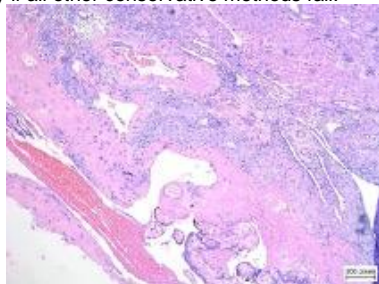
## FIRST TRIMESTER PLACENTA ACCRETA WITH MYOMA IN A NULLIPARA: A CASE REPORT

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**Problem statement:** Placenta accreta spectrum (PAS) disorder is a complication of pregnancy commonly diagnosed during the second trimester. First trimester detection of placenta accreta is rare and challenging, and a consensus on its diagnostic criteria is lacking. Placenta accreta in the first trimester, when left undetected, may lead to obstetrical hemorrhage that may necessitate hysterectomy. **Method and Results:** This is a case report of a 35-year-old G2P0



(0020) who presented with persistent vaginal bleeding after completion curettage for an incomplete abortion. Transvaginal sonography showed an endometrial echogenic mass with cystic spaces with abundant color flow, and beta-human chorionic gonadotropin had decreasing trends. Assessment was postpartum hemorrhage secondary to retained secundines and multiple myoma uteri. On hysteroscopic resection of the retained secundines, profuse bleeding led to hemorrhagic shock. Hence, hysterectomy was performed. Histopathology showed placenta accreta. **Conclusion:** Persistent bleeding post-completion curettage and increased vascularity on ultrasound should lead to a high suspicion of placenta accreta in the first trimester. This case highlights the possibility of placenta accreta in the first trimester and the need for a diagnostic consensus for its detection. Prompt diagnosis is essential for timely intervention and proper patient counseling, including the possibility of hysterectomy if all other conservative methods fail.



#### PRESENCE OF ABNORMAL UTERINE BLEEDING AND RECURRENT ENDOMETRIOSIS ASSOCIATED WITH TIME TO SEEK MEDICAL ATTENTION IN ENDOMETRIOSIS PATIENTS

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**Problem statement:** We aimed to identify the time to seek medical attention among women with endometriosis in Cipto Mangunkusumo National Referral Hospital and analyze related factors affecting visit delay. **Methods:** A cross-sectional survey was conducted in 2018, with total 108 respondents aged 19-50 years diagnosed with endometriosis. The cut off duration of symptoms to time of seeking medical attention is 52 weeks. Patient's characteristic including: age, BMI, marital status, parity, educational level, contraceptive use, alcohol use, smoking, familial history of endometriosis, and other medical and surgical history, and endometriosis-related symptoms such as: dysmenorrhea, abnormal uterine bleeding, type of pain, migraine, low back pain, sharp pain, nausea and vomiting, shortness of breath, and fibromyalgia. Univariate analysis used to identify which factors associated the most between symptom onset to time to seek medical attention. **Results:** Of the 108 respondents included, the shortest duration from the onset of symptoms to the patient seeking medical attention was 2 weeks and the longest was 1456 weeks. Then we divided them into 2 groups with a limit of 52 weeks. Regarding accompanying symptoms, mostly complained of visceral type of pain, low back pain, sharp pain, and fewer complaints of abnormal uterine bleeding, dyspnea, fibromyalgia, nausea, vomiting or migraine. A significant correlation was found in patients with a history of previous surgery and presentation of AUB, who presented later than those who never had surgery and without AUB. **Conclusion:** Time to seek medical attention is shorter in patients with visceral pain. And of all these accompanying symptoms only AUB and recurrent endometriosis had a significant correlation with the duration to seek medical attention in endometriosis patients in this study.

**Disclosure of Interest:** The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

#### CHARACTERISTICS OF TOTAL LAPAROSCOPIC HYSTERECTOMY AMONG WOMEN WITH OR WITHOUT PREVIOUS ABDOMINAL SURGERY: RETROSPECTIVE ANALYSIS

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**Problem statement:** Total laparoscopic hysterectomy (TLH) is associated with reduced postoperative morbidity and length of hospital stay, compared to abdominal hysterectomy, and it can be complicated by previous abdominal surgeries. **Methods:**

Retrospective observational study of complications after TLH in the last 3 years (2020-2022) and its correlation with previous abdominal surgeries. Statistical analysis was performed using SPSS software. **Results:** A total of 145 women underwent TLH between 2020 and 2022, of which 59,3% (n=86) had at least one abdominal surgery. Cesarean section (C-section) was the most frequent previous surgery (n=36), following bilateral tubal ligation (n=30), appendectomy (n=16), ressectoscopy (n=14), gastric bypass (n=10), cholecystectomy (n=10), hernioplasty umbilical cord (n=5), curettage (n=4), ovarian cystectomy (n=3) and Nissen fundoplication (n=1). About 4.1% of women had complications intraoperatively, with bleeding 1000ml (n=2), conversion to laparotomy (n=1), iatrogenic bladder injury (n=1) and intestinal (n=1) and vaginal (n=1) lacerations. From the 10th day after surgery, there were about 11.7% of postoperative complications, including vaginal cuff granuloma (n=6), vaginal cuff hematoma (n=4), vaginal cuff dehiscence (n=2), vaginal cuff abscess (n=2), grade 1 vaginal cuff prolapse (n=1), aggravated stress urinary incontinence (n=1) and pain in the umbilical scar (n=1). Women with previous abdominal surgery submitted to LTH had a higher proportion of postoperative complications (21%) compared to those without previous abdominal surgery (7%), although without statistically significant difference ( $X^2=3.494, p=0.062$ ). Regarding the type of previous abdominal surgery, the proportion of postoperative complications in the group with a history of bariatric surgery was significantly higher than in the group without bariatric surgery (0.4% vs 0.11%,  $X^2=6.824, p=0.009$ ), such as in the group of women with previous appendectomy (25% vs 11.6%,  $X^2=6.227, P=0.044$ ). No differences were observed about the length of hospital stay or type of operative complication. **Conclusion:** This study demonstrated that bariatric surgery and appendectomy may be associated with a higher proportion of postoperative complications; however, the study is retrospective and the population sample is small, requiring further studies to validate the results presented. Overall, HTL appears to be a safe approach in women with previous abdominal surgeries, with no increase in postoperative morbidity.

#### CONCERNS ABOUT FERTILITY, SOCIAL APPEARANCE, AND RELATIONSHIPS IN YOUNG ADULTS WITH POLYCYSTIC OVARY SYNDROME

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**Problem Statement:** Polycystic Ovary Syndrome (PCOS) is an endocrinological and metabolic disorder characterized by a range of symptoms and complications, which is observed in 1.14-11.04% of women of reproductive age. Due to the perceived impacts of the changes caused by PCOS, this study aimed to determine the concerns regarding fertility, social appearance, and relationships in young adults with PCOS. **Methods:** The study was planned as a comparative-descriptive study and included 140 young adults (aged 18-26 years) who were diagnosed with PCOS and agreed to participate in the research between July and December 2022 in Turkiye. The data of the study were collected by online survey using a "Participant Interview Form" and "Social Appearance Anxiety Scale (SAAS)." The data were analyzed using percentages, Kruskal-Wallis, ANOVA, and t-tests. Ethical approval was obtained prior to the study.

**Results:** The mean age of the participants was  $22.1 \pm 2.1$ . Seventy percent of the participants were undergoing treatment for PCOS, 78.6% experienced menstrual irregularities, 72.9% expressed concerns about future infertility, and 44.3% reported feeling fearful about the associated concerns. Eighty percent of the participants expressed dissatisfaction with their physical appearance due to PCOS symptoms. Sixty-one point four percent occasionally worried about being unable to conceive in the future due to PCOS, while 74.3% felt somewhat or moderately at risk. Twenty-three point six percent believed that their future relationships with their partners could be affected, while 48.6% were undecided. The mean SAAS score was  $40 \pm 14.1$  (min=18, max=80; scale range 16-80). The SAAS scores were significantly affected by the variables including income, body mass index, regular exercise, PCOS symptoms (hirsutism, obesity, depression, irritability, insulin resistance), concerns related to PCOS (general health concerns and concerns about partner relationships), body image, and concerns about social relationships (dissatisfaction with physical appearance/femininity, self-confidence, social and emotional concerns), and concerns about partner relationships (impact on partner relationships, thoughts of distancing from marriage, anticipation of negative impact on future relationships with partners) ( $p < 0.05$ ). **Conclusion:** It was determined that young adults have concerns about the potential negative impact of PCOS on fertility, social appearance, and relationships.





## CAN LASER ALLEVIATE THE MANIFESTATIONS OF SJOGREN'S SYNDROME IN GYNECOLOGY – PILOT STUDY PRELIMINARY DATA

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**Problem statement:** Women suffering of Sjogren's Syndrome (SS) often complain of the gynecological manifestations of SS, mostly the vaginal dryness and dyspareunia. The presence of SS significantly aggravates the symptoms of genitourinary syndrome of menopause (GSM). In the last decade, the laser therapies for GSM become popular minimally invasive approach for GSM treatment, thus we decided to assess the efficacy and safety of a therapy with non-ablative ErYAG laser on patients with gynecological manifestations of SS. **Methods:** Patients recruited from the University department for nephrology and immunology and diagnosed with SS by two immunologists on the bases of their clinical and immunological results, complaining of gynecological manifestations of SS, were included in this study. Before the laser therapy multiple assessment tools were applied to the patients: FSFI, DLQI, VHIS, EULAR SS disease activity index (ESSDAI), gynecological exam, swab and biopsy samples were also taken. Patients were treated with three sessions of non-ablative ErYAG laser with one-month intervals. Before the second and third sessions FSFI, DLQI, VHIS and infection screening were performed. Follow-ups were scheduled at 1, 3 and 6 months after the last laser session. At each follow-up, the measurements of multiple features using above mentioned tools were repeated and the results compared with the baseline. Potential adverse effects and patients' satisfaction were also observed at each visit. **Results:** So far 8 patients were recruited in this study, 4 of them already completed the laser treatment. All patients improved in all observed characteristics. FSFI score improved from 13.7 to 27.5; VHIS from 13.5 to 20.3; DLQI decreased from 10.5 to 0.7; patients' assessment of dryness improvement was 35% and satisfaction with results 7/10. No adverse effects were reported. This study is ongoing, and more patients will be included. **Conclusion:** Preliminary results of Erbium laser treatment of small number of SS patients with gynecological manifestations showed efficacy in improvement of observed symptoms without adverse effects noted. Patients tolerated the treatment well and their satisfaction was high. More patients and longer follow-up are needed to get a good assessment of efficacy and safety of this treatment for SS patients with gynecological complaints.

## OBSTETRIC OUTCOMES AFTER CERVICAL CONIZATION: A SINGLE-CENTER DESCRIPTIVE REVIEW

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Cervical conization, or large loop excision of the transformation zone (LLETZ) is the most effective method to treat High-Grade Intraepithelial Lesion (HSIL). Some studies have shown a relation between preterm birth and history of cervical conization<sup>1,2</sup>, but no clear association has been proven<sup>3,4</sup>. **The aim** of this study is to understand the impact of cervical conization on obstetric outcomes. **Methods:** Retrospective observational study including women who got pregnant after being submitted to a LLETZ, in Hospital São Francisco de Xavier, Lisbon, from January 2006 to December 2022. **Results:** During this 16-year period 919 LLETZ were made. 118 patients got pregnant after conization, 18 had more than one pregnancy. Regarding these patients, mean age at the moment LLETZ was performed was 30,5 (19-47) years, and mean age at the time of conception was 33,4 (22-48) years. The mean interval conization to birth was 35 months  $\pm$  24,8 SD. In a total of 138 pregnancies, 93 gave birth to a live newborn and 32 pregnancies loss were registered: 28 in the first trimester, 2 in the second trimester and 2 ectopic pregnancies, and 7 voluntary abortions were performed. Mean gestacional week at term delivery was 38,9 (37-41) weeks, with a cesarean rate of 23,3% (n=20/86). Fetal weight 3054,7 $\pm$  570 g, and the rate of low-birth-weight infants was 8,1% (n= 7/86). There are four ongoing pregnancies, without registered incidents until this moment. The rate of preterm birth (PTB) was 9,7% (n=9), with a mean gestacional age of 33,4 (24-36) weeks, and mean fetal weight of 2069,3 g. These preterm deliveries include two placenta previa, a gemelar gestacion with a vaginal delivery at 36 weeks, and a

iatrogenic PTB at 24 weeks justified with maternal pathology (severe respiratory infection). Occurrence of premature rupture of membranes was 2,15% (n=2). Time between LLETZ and birth was 31 months  $\pm$  26,9 SD. **Conclusions:** In this study, the cervical conization does not seem to increase the risk of PTB of women who do not have other PTB risk factors, and delaying pregnancy after LLETZ did not reduce the incidence of PTB. We have no conflicts of interest to disclose.

## SEXUAL QUALITY OF LIFE AND MARITAL ADJUSTMENT IN WOMEN WITH ENDOMETRIOSIS: A CASE-CONTROL STUDY

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**Objective:** The aim of this study was to determine the quality of sexual life and marital adjustment in women with endometriosis. **Method:** This study was conducted as a case-control study in the endometriosis and gynecology outpatient clinic of a training and research hospital. Within the scope of the research, 75 women with endometriosis (Endometriosis group) and 75 healthy women (control group) were interviewed. Data were collected by using "Participant Description Questionnaire", "The Sexual Quality of Life-Female (SQOL-F)" and "Marital Adjustment Test (MAT)". The data were analyzed using SPSS 22.0 package program. Independent samples t-test, one-way analysis of variance-ANOVA and Pearson correlation test were used in the comparison of variables. **Results:** In this study, women in the endometriosis group were 35.4 $\pm$ 6.8 years old on average and were married for 10.9 $\pm$ 7.9 years. The women in the control group were 32.3 $\pm$ 5.9 years old on average and were married for 10.1 $\pm$ 7.2 years. A statistically significant difference was found between the women in the endometriosis group and the women in the control group in terms of SQOL-F total score averages (p<0.05). It was found a negatively significant correlation among the SQOL-F total score and severity of dyspareunia of women in the endometriosis group (r=-0.323, p<0.05). A statistically significant positive correlation was found between the SQOL-F total score and the MAT total score of the women in both groups (r=0.504, p<0.001). **Conclusion:** It was determined that the quality of sexual life of women with endometriosis within the scope of the study was lower than that of healthy women. It was determined that as the severity of dyspareunia of women with endometriosis increased, their sexual life quality decreased. In addition, it has been observed that as the quality of sexual life increases in women, marital adjustment also increases.

## SEXUAL SATISFACTION LEVELS OF WOMEN WITH OVERACTIVE BLADDER: SYSTEMATIC REVIEW AND RECOMMENDATIONS

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**Introduction:** Overactive bladder (OAB) in women is a global public health issue. However, there is a limited understanding of the experience of women from underrepresented groups suffering from OAB. The purpose of this systematic review was to examine current evidence sexual satisfaction the experience of women with OAB from these groups. **Methodology:** Two authors independently made the study selection. Turkish and English publications were taken into consideration. The risk of bias for the included studies was assessed using the Revised Cochrane risk-of-bias tool for randomized trials. The PRISMA methodology was used to carry out this systematic review. Data extraction was performed by two researchers independently. **Results:** Final analysis identified articles for systematic review. OAB-wet was reported as the most affecting factor on sexuality. OAB treatments showed improvement of both the OAB-wet and the sexual function. **Discussion:** Sexual satisfaction need to be considered by professionals providing care if women from underrepresented groups experiencing OAB are to receive optimal care.



## ORAL PRESENTATIONS 8 - ART/IVF/INFERTILITY

## ATOSIBAN THE DAY OF EMBRYO TRANSFER MAY IMPROVE SUCCESS RATE IN PATIENTS OVER 1.5 UTERINE CONTRACTIONS PER MINUTE

**Belen Moliner**, Andrea Bernabeu, Ana Fuentes, Paolo Cirillo, Begoña Alcaraz, Paula Moral, Juan Carlos Castillo, Rafael Bernabeu  
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**Problem statement:** Increased uterine peristalsis (UP) has been associated with poorer assisted reproductive treatments outcomes. This is mediated by higher level of oxytocin. Thus, the use of oxytocin antagonist as atosiban has been proposed to reverse this condition and increase the chance for the success. Thus, the use of atosiban when high uterine peristalsis is observed may improve success rate of these patients. **Methods:** A retrospective cohort study has been carried out from 2017 to 2022 including 519 patients diagnosed with recurrent implantation failure undergoing frozen-thawed blastocyst embryo transfer. Hypercontractility group (HyperC) was defined as patients with 1.5 contractions per minute (cpm) or more. Uterine peristalsis has been assessed using 2D/4D ultrasound for 6 minutes the day of embryo transfer. Patients with HyperC underwent atosiban treatment as an IV bolus of 6.75 mg at approximately 10 min before embryo transfer. **Results:** In our study 519 patients were enrolled with an average age of 40.5 years-old, 3.13 assisted reproductive treatments (ART), 3.38 embryo transfers and 4.1 embryos transferred. There were statistically significant differences between groups in the average of patients age, progesterone levels, endometrial compaction, type of endometrial preparation and the presence of endometriosis, so multivariate analysis was done adjusted by these factors. HyperC was found in 185 patients (35,6%), and all of them were treated with atosiban. Significantly higher biochemical pregnancy rate was observed in HyperC group (55,7% (103/185) vs 43,7% (146/334); OR 1,7; 95%IC 1,2 to 2,5; p=0,007). However, clinical pregnancy rate (41% (76/103) vs 34,4% (115/334)), clinical miscarriage rate (17,5% (18/103) vs 15% (22/146)) and live birth rate ( 27,6% (51/185) vs 22,4% (75/334)) were comparable (p=0,42, 0,78, and 0,12, respectively). **Conclusion:** In our study, patients treated with atosiban and uterine peristalsis frequency above 1.5 contractions per minute achieved higher biochemical pregnancy rate. However, similar live birth rates were achieved in patients with normal uterine peristalsis. This may be because atosiban reverses the effect of high UP frequency, which is associated with poorer outcomes. Our results encourage randomized trials focus on exploring atosiban treatment in patients suffering from increase uterine contractility.

## IMPACT OF ENDOMETRIOSIS ON UTERINE PERISTALSIS AND SERUM CONCENTRATIONS OF PROGESTERONE IN PATIENTS WITH RECURRENT IMPLANTATION FAILURE UNDERGOING FROZEN-THAWED EMBRYO TRANSFER

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**Problem statement:** Uterine quiescence during secretory phase plays an important role during embryo implantation, and it is due to the progesterone effect. However, supraphysiological levels of estradiol associated to endometriosis may produce progesterone resistance. In addition, this effect seems to produce increased expression of oxytocin receptors, which it is thought lead to increased uterine peristalsis frequency. The aim of the study is to analyze the putative relationship of uterine peristalsis and serum concentrations of progesterone in patients with endometriosis and recurrent implantation failure. **Methods:** A retrospective cohort study has been carried out from 2017 to 2022 including 571 patients diagnosed with recurrent implantation failure (RIF) undergoing frozen-thawed blastocyst embryo transfer. 198 (34,7%) patients were diagnosed of endometriosis. Uterine peristalsis has been assessed using 2D/4D ultrasound for 6 minutes the day of embryo transfer and it has been defined as contractions per minute (cpm). Progesterone assessment was performed the day of embryo transfer. **Results:** Patients with endometriosis were younger (40,1± 4,7 vs 41,1±4,4; p=0,012), performed more treatments (3,9±2,7 vs 3,2±2,2; p=0,003) and suffered more miscarriages (1,02±1,5 vs 0,8±1; p=0,046) in comparison with RIF only patients. Also, there were statistically significant differences between groups in the presence of fibroids, intrauterine adhesions, and uterine malformations, so multivariate logistic regression analysis was done adjusted by these factors. Uterine peristalsis was found increased in endometriosis respect to RIF patients (1,3 ±0,8 cpm vs 1,1±0,7 cpm; OR 1,4; 95%IC 1,1 to 1,8; p= 0,006). Serum concentration of progesterone was lower in

endometriosis in comparison to RIF patients (18±13 ng/ml vs 22,2±14 ng/ml; OR 0,98; 95% 0,96 to 0,99; p=0,001). **Conclusion:** Patients suffering from endometriosis and recurrent implantation failure show poor prognosis. It could be mediated by lower levels of progesterone driving to higher uterine peristalsis frequency. Confirmation of these findings could lead to the development of strategies to address this situation.

## EXPLORING THE LANDSCAPE OF ALTRUISTIC SURROGACY IN BRAZIL: AN IN-DEPTH ANALYSIS OF PARTICIPANT DEMOGRAPHICS OVER 8 YEARS

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**Problem Statement:** In Brazil, gestational surrogacy (GS) has emerged as a pivotal solution for individuals unable to undergo pregnancy. While ethical guidelines have sanctioned this practice since 1992, total inclusivity was established only in 2013, allowing various cases, such as male homosexual couples, single males, and couples with medical impediments, to partake in altruistic surrogacy. This study aims to comprehensively assess an 8-year experience of in vitro fertilization (IVF) cycles within a Brazilian surrogacy program. **Methods:** A retrospective analysis of 139 IVF transfer cycles conducted from 2016 to 2023 at Neovita Reproductive Center in São Paulo, Brazil, was performed. Variables scrutinized encompassed participant demographics, embryo quality and IVF results. **Results:** Evaluation of 139 surrogacy-associated embryo transfers yielded 68 pregnancies, involving 89 gestational carriers (GC) and 81 intended parents (IP). Demand for GS has shown an upward trend, with 84% of IPs hailing from Brazil and 16% internationally. IPs had an average age of 40.61 years, whereas GCs averaged 33.28 years. Embryos predominantly derived from donated oocytes (88.4%), with an oocyte mean age of 27.06 years. Notably, 67.6% of embryos attained top-quality classification, while 17.2% underwent biopsy, confirming euploidy. Each procedure saw an average transfer of 1.57 embryos. Surrogacy indications were diverse, with male homosexual couples representing 46.7%, single male parents 16.5%, and maternal medical conditions 10.2%, among others. The overall live-birth rate per IP was 47.1%, exhibiting higher rates among subgroups like male homosexual couples (50%), maternal medical conditions (80%), and single male parents (64%). The mean gestational age at birth was 35.2 weeks, with 38% of infants delivered before 37 weeks and an average birth weight of 2671.62 grams. **Conclusion:** This study presents the largest cohort of surrogacy cases in Brazil, demonstrating the feasibility and success of surrogacy as an option for individuals confronting infertility or medical gestational barriers. The data underscores the escalating demand for surrogacy and advocates for broader access to such treatments in Brazil and globally. Our findings emphasize the mounting requirement for surrogacy as a solution for reproductive challenges and reinforce the imperative to enhance its availability not only in Brazil but on a global scale.

## MATERNAL AND PATERNAL ATTACHMENT AFTER IVF-ET TREATMENT: A CROSS-SECTIONAL STUDY

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**Purpose:** This study was carried out to determine the maternal and paternal attachment levels and affecting factors of individuals who had a baby after in vitro fertilization-embryo transfer (IVF-ET) treatment. **Methods:** This descriptive and cross-sectional study was conducted in the infertility clinic of a university hospital with mothers (n=64) and fathers (n=64) (a total of 128 participants) who had a baby after IVF-ET treatment. Research data were collected using the "Personal Information Form-Mother", "Personal Information Form-Father", "Maternal Attachment Inventory (MAI)", and "Postnatal Paternal-Infant Attachment Questionnaire (PPAQ)". In the analysis of the research data, descriptive statistics, Kruskal Wallis, and Mann Whitney U tests were used. The relationships between the scales and their total and subscales' mean scores were determined by Spearman Correlation Analysis. **Results:** It was determined that the MAI mean score of the mothers was 102.35±3.05 and the PPAQ mean score of the fathers



was  $82.21 \pm 4.27$ . A statistically significant difference was found between the mothers' MAI mean score and the duration of the marriage. It was found that there was a statistically significant difference between the fathers' PPAQ mean score and the duration of the marriage, the duration of diagnosis of infertility, and the duration of infertility treatment ( $p < 0.05$ ). While the correlation analysis between the MAI mean score and the mean score of the PPAQ's subscale of pleasure in interaction was positive and weakly significant ( $r = 0.26$ ;  $p = 0.032$ ); there was no significant relationship between the MAI mean score and the PPAQ mean score ( $r = 0.18$ ;  $p = 0.146$ ). **Conclusions:** It was determined that mothers and fathers who had babies after IVF-ET treatment had high levels of attachment with their babies. It was found that the duration of the marriage in mothers, the duration of the marriage in fathers, the duration of the diagnosis of infertility, and the duration of the infertility treatment affect attachment levels. Healthcare professionals should evaluate the attachment levels of mothers and fathers who have a baby as a result of IVF-ET treatment and be aware of the factors affecting it.

## GEOGRAPHIC DIFFERENCES IN SEMEN QUALITY OF SPANISH INFERTILE PATIENTS

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**Introduction:** Several studies have been published regarding the correlation between the subject's geographical location and their semen quality. The main limitations of these studies include differences in protocol across laboratories, which may affect the validity of data. The **objective** of this study was to determine whether there are variations in the seminal parameters of patients undergoing a sterility study in eleven different geographical locations in Spain.

**Methods:** The study was carried out in 11 assisted reproduction units belonging to the same group. A total of 872 semen samples from men who came to perform a semen analysis for a fertility study were analyzed, which included: volume, sperm concentration and total and active motility. Semen parameters were assessed using standardized methodology with inter-laboratory quality control. At the time of analysis, all the men had a sexual abstinence between 2 and 5 days. The mean age of patients was 38 years (SD:6.14). There were no significant differences regarding age between the different centers (ANOVA  $p < 0.05$ ). Volume, sperm concentration, motility and the total number of motile sperm (TMS): volume x sperm concentration x percentage of motility, were compared according to geographic locations. Analysis of variance (ANOVA) was performed for the comparison between centers of the means of the values of each parameter and the Chi-square test to compare the percentage of abnormal or pathological diagnoses according to the WHO parameters. **Results:** Statistically significant differences were found between the different centers regarding volume, sperm concentration, total motility and TMS ( $p < 0.020$ ,  $0.004$ ,  $0.001$  and  $0.008$  respectively). Men from Asturias had the highest proportion of volume, sperm concentration, motile spermatozoa and TMS with statistically significant differences with respect to the rest, followed by patients from Cataluña, Almeria and Malaga. Lowest sperm concentration and TMS were detected for men from Granada, Alicante and Madrid.

**Conclusions:** Since the determination of the different parameters has been carried out with the same methodology, the differences in semen quality cannot be due to variations between laboratories. The causes of geographical differences in human sperm quality observed are most likely the result of a combination of various types of environmental factors.

## NANOPORE SEQUENCING TECHNOLOGY IN REPRODUCTIVE GENETICS – CURRENT APPLICATIONS AND FUTURE PERSPECTIVES

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**Problem statement:** Genetic diagnostic in fertility treatment can be very time-consuming and costly. With the introduction of next-generation sequencing (NGS), genetic diagnostics became more accessible for IVF clinics. However, specialized genetic diagnostics, including preimplantation genetic testing for monogenetic diseases (PGT-M) or breakpoint-identification require extended genetic workup of parental DNA and personalized analysis. Additionally, NGS requires large investment costs, high running expenses and highly trained staff for laboratory workup and data analysis. Long-read nanopore sequencing can overcome some of these challenges by providing comprehensive, fast and cost-effective solutions for a number of different genetic analyses. **Methods:** Here, we present possible applications of nanopore sequencing and its prospective transition into the clinical routine. Therefore, latest literature is reviewed for the application in reproductive genetics. Additionally, we highlight our own nanopore sequencing research including endometrial microbiome analysis, PGT-A from polar bodies and non-invasive PGT-A using embryo culture medium. **Results:** Several studies have successfully demonstrated the application of nanopore sequencing in the context of structural variants for breakpoint-mapping and the identification of translocation carrier embryos. Here the long reads are particularly advantageous and allow cost-effective, efficient, direct breakpoint identification and haplotype phasing of parental DNA utilized for PGT-SR, PGT-M, or mutation analysis in male infertility. Short-read nanopore sequencing has been successfully applied for PGT-A analysis of trophectoderm samples. In our laboratory, we applied nanopore PGT-A of polar bodies and found concordant results in 96/99 samples (97% concordance). Additionally, we analyzed culture medium for non-invasive PGT-A and found around 80% concordance with PGT-A from trophectoderm samples. Recently, the feasibility of prenatal NIPT-test using nanopore technology has been demonstrated. Additionally, nanopore sequencing has been demonstrated feasible for vaginal, endometrial and semen microbiome analysis, utilizing full-length 16S rRNA gene sequencing. **Conclusion:** Nanopore sequencing technology is rapidly advancing in the field of reproductive genetics and has the potential to enable comprehensive, cost-efficient, and rapid genetic analysis across various reproductive scenarios. Low investment and running cost make nanopore sequencing an attractive tool for smaller genetic laboratories and IVF clinics. However, large-scale comparative studies are required before this new technology can be introduced into clinical routine diagnostics.

## DETERMINATION OF MEN'S PERCEIVED SOCIAL SUPPORT AND STYLES OF COPING WITH STRESS IN COUPLES RECEIVING INFERTILITY TREATMENT

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**Problem statement:** Infertility can be considered a life crisis. Since it concerns couples, it is thought that men should be included more in studies on the psychosocial effects of infertility. **Methods:** This study, in which a descriptive research design was used, was conducted to determine men's perceived social support and styles of coping with stress in couples receiving infertility treatment. Data were collected at the Assisted Reproductive Treatment Center and IUI Unit of the Infertility Clinic of a hospital in Ankara Province. The sample consisted of 115 men who agreed to participate in the study. Data were collected using a Descriptive Information Form, the Multidimensional Scale of Perceived Social Support (MSPSS), and the Styles of Coping with Stress Scale (SCSS). **Results:** The mean score on the total MSPSS was found as  $56.57 \pm 17.36$ . The mean scores on the sub-dimensions of the SCSS were found as  $16.43 \pm 3.71$  on the self-confident approach,  $10.75 \pm 3.19$  on the optimistic approach,  $6.97 \pm 2.28$  on the social support-seeking approach,  $9.61 \pm 4.53$  on the helpless approach, and  $7.21 \pm 3.86$  on the submissive approach. In the study, a significant positive correlation was determined between the MSPSS and its sub-dimensions and self-confident and optimistic approaches and between the perceived social support from family and friends and the social support-seeking approach ( $p < 0.05$ ). **Conclusion:** It is recommended that of the couples applying for infertility treatment, men should be evaluated for social support levels and styles of coping with stress, provided with approaches to increase their social support, taught effective methods of coping with stress, and supported for their use.

**Keywords:** Coping with stress, infertility, male, social support, stress





**VOLATILOMICS AS AN EMERGING STRATEGY TO DETERMINE POTENTIAL BIOMARKERS OF FEMALE INFERTILITY: A PILOT STUDY**Ana Teresa Brinca<sup>1</sup>, Ofélia Anjos<sup>2,3</sup>, Maria Manuel Casteleiro Alves<sup>1,4</sup>, Ângela Sousa<sup>1</sup>, António Hélio Oliani<sup>4,5</sup>, Luiza Breitenfeld<sup>1,6</sup>, Luís Passarinha<sup>1,7,8,9</sup>, **Ana Ramalhinho**<sup>1,4,6</sup>, Eugenia Gallardo<sup>1,9</sup><sup>1</sup>Health Sciences Research Centre, University of Beira Interior, Covilha, Portugal<sup>2</sup>IPC, Instituto Politecnico de Castelo Branco, Castelo Branco, Portugal<sup>3</sup>Centro de Estudos Florestais, Instituto Superior de Agronomia, Lisboa, Portugal<sup>4</sup>Assisted Reproduction Laboratory, Academic Hospital of Cova da Beira, Covilha, Portugal<sup>5</sup>Gynaecology and Obstetrics Department, Sao Jose do Rio Preto School of Medicine, Sao Jose do Rio Preto, Brazil<sup>6</sup>C4 - Cloud Computing Competence Centre, University of Beira Interior, Covilhã, Portugal<sup>7</sup>UCIBIO - Applied Molecular Biosciences Unit, NOVA School of Science and Technology, Universidade NOVA de Lisboa, Caparica, Portugal<sup>8</sup>Associate Laboratory i4HB-Institute for Health and Bioeconomy, NOVA School of Science and Technology, Universidade NOVA de Lisboa, Caparica, Portugal<sup>9</sup>Laboratório de Farmaco-Toxicologia, UBIMedical, University of Beira Interior, Covilha, Portugal

**Problem statement:** Infertility has become a prominent public health issue worldwide, challenging the future of modern reproductive medicine. Polycystic ovary syndrome (PCOS), endometriosis, and premature ovarian failure (POF) are some of the clinical conditions that lead to female infertility. Follicular fluid (FF) is the biological matrix that has the most contact with the oocyte and can, therefore, be used as a predictor of its quality. Volatilomics has recently emerged as a non-invasive, straightforward, affordable, and simple method for characterizing various diseases and determining the effectiveness of their current therapies. The aim of this study is to determine the volatolic pattern of follicular fluid from patients with PCOS, endometriosis, and POF, and to find potential biomarkers of these clinical conditions. **Methods:** Headspace solid-phase microextraction and subsequent GC-MS analysis was used to analyze the volatile organic compounds (VOCs) present in 52 FF samples from infertile women, corresponding to 15 patients with PCOS, 8 with endometriosis, 12 with POF, and 17 controls. **Results:** A total of 136 VOCs were identified. Due to their prevalence in all samples, 37 compounds were considered, and the multivariate statistical analysis revealed significant changes in the levels of certain metabolites according to each clinical condition. The analysis of biochemical profiles revealed compromised metabolic pathways, as well as the presence of compounds strongly linked with infertility. **Conclusion:** The findings point to specific metabolite patterns as potential biomarkers for the studied diseases. These open the door for further research into the relevant metabolomic pathways to enhance infertility knowledge and diagnostic tools. The high-throughput methodologies employed suggest the possibility of using metabolite identification as a facilitator for determining potential infertility biomarkers. Our findings may also benefit the exploration of the associated metabolomic pathways and the improvement of clinical diagnostic tools.

**DOES DUAL TRIGGER IMPROVES REPRODUCTIVE OUTCOMES IN VITRO FERTILIZATION CYCLES?**Isabel Saavedra Rocha, Manuel Gonçalves Henriques, Sónia Correia, Graça Pinto, Ana Teresa Marujo  
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**Problem statement:** Dual-trigger has been indicated for final oocyte maturation but studies regarding its possible benefits in patients undergoing assisted reproductive technology are conflicting. Therefore, this study aimed to evaluate if dual trigger compared to the standard hCG trigger improves reproductive outcomes in cycles within the same patient. **Methods:** In this retrospective cohort study all in vitro fertilization/intracytoplasmic sperm injection (IVF/ICSI) cycles between January 2022 to June 2023 performed at Infertility Division of Maternidade Alfredo da Costa-CHULC were evaluated and only included women who first underwent a hCG trigger cycle and a subsequent dual trigger cycle. The outcomes of the dual trigger cycles were compared to the results of the hCG trigger cycles for the same patient. Primary outcomes were number of retrieved oocytes, number of mature oocytes, maturation rate, fertilization rate and number of top-quality embryos. Statistical analysis was performed using the SPSSv21.0 and p.05 was considered statistically significant. **Results:** Following inclusion criteria a total of 70 patients were included in the study. Comparisons between the two groups revealed no difference in patient age (35,3 vs 36,0;p.05), body mass index (24,92 vs 24,91kg/m<sup>2</sup>;p.05), basal FSH (7,5 vs 7,1mIU/mL; p.05), antral follicle counts (10,56 vs 9,71;p.05) and Anti-Müllerian hormone

(1,39 vs 1,25ng/mL;p.05). Also, there were no significant differences in terms of stimulation duration, types of gonadotropins used, despite of total dose of gonadotropins (2295 vs 2512UI;p.05) were higher in the dual trigger group. Oocyte maturation and fertilization rates were identical in both groups but clinical pregnancy rate was higher in dual trigger group (15,7% vs 4,3%;p .05). In a subgroup analysis taking account only patients who had a maturation rate of 60% following hCG triggering (n=23), there was a significantly higher number of retrieved oocytes (3,8 vs 5,9;p.05), number of mature oocytes (1,7vs 4,3;p.05), maturation rate(32% vs 75%;p.05) and top-quality embryos following dual trigger (16 vs 38, p.05). **Conclusion:** Dual trigger for final oocyte maturation increases the oocyte maturation rate in women who had a low oocyte maturation rate following standard hCG triggering and therefore should be considered when oocyte maturation rate following standard hCG triggering is lower than 60%.

**POLYCYSTIC OVARIAN SYNDROME: WHAT TO EXPECT FROM IVF?**Alicia Sarandeses<sup>1</sup>, Alicia Sarandeses Vazquez<sup>2</sup>, Khatim Chebbi<sup>2</sup>, Laura De La Fuente<sup>1</sup>, Beatriz Risco<sup>1</sup>, Maria Carrera<sup>1</sup><sup>1</sup>Obstetrics&gynecology, Hospital Universitario 12 De Octubre, Madrid, Spain<sup>2</sup>Medicine, Universidad Complutense De Madrid, Madrid, Spain

**Problem statement:** The polycystic ovarian syndrome (PCOS) is the most common endocrinopathy among women within the reproductive age with an incidence of 6 to 21% and a prevalence of 8 to 13%. It is a heterogeneous syndrome with important consequences regarding women's health, including fertility. The main objective of this study is to evaluate PCOS patients' oocyte quality and the characteristics of their response to ovarian stimulation (OS). **Methods:** Retrospective and comparative study which includes a group of PCOS patients (n 62) according to the Rotterdam consensus [1-3] and a control group (n 113) with women classified as normoresponse according to Bologna criteria [14]. Both clinical and demographic variables have been collected to compare both groups. **Results:** Even though PCOS group presents a greater response to OS compared with the control group [more punctured follicles and mature oocytes (15.9 vs. 10.3 with p 0.001 and 12.1 vs. 7.9 with p 0.001 respectively)], no differences were found in the number of obtained embryos (2.7 vs. 2.3 with p 0.321 respectively) and the miscarriage rate is higher in PCOS group. **Conclusion:** Although PCOS group has a greater response to OS, no difference between the number of embryos and the clinical pregnancy rate (13.1% vs. 25% with p 0.06 respectively) were found, being this rate higher in the control group, which indicates a possible worse oocyte quality among patients within the PCOS group.

**THE IMPACT OF ENDOMETRIOSIS IN IN VITRO FERTILIZATION OUTCOMES**Ana Beatriz De Almeida<sup>1,3</sup>, Ana Rocha<sup>1,2</sup>, Emídio Vale Fernandes<sup>1,2,3</sup>, Cláudia Lourenço<sup>1,2,3</sup>, Isabel Sousa Pereira<sup>1,2,3</sup>, Daniela Sousa<sup>2,4</sup>, Raquel Brandão<sup>2,4</sup>, Carla Leal<sup>2,3,4</sup>, Márcia Barreiro<sup>1,2,3</sup>, Rosa Zulmira Macedo<sup>1,3</sup><sup>1</sup>Women and Reproductive Health Department, Centro Materno-Infantil do Norte Dr. Albino Aroso (CMIN), Centro Hospitalar Universitario do Porto (CHUPorto), Porto, Portugal<sup>2</sup>Centre of Assisted Medical Procreation (CAMP), CMIN-CHUPorto, Porto, Portugal<sup>3</sup>Institute of Biomedical Sciences Abel Salazar (ICBAS), CMIN-CHUPorto, Porto, Portugal<sup>4</sup>Embryology, CMIN, CHUPorto, Porto, Portugal

**Problem Statement:** Endometriosis, a well-known factor impacting fertility, can directly distort tubo-ovarian anatomy or indirectly cause inflammatory and oxidative damage. Consequently, many women try assisted reproductive technology, such as *in vitro* fertilization (IVF), to improve their chances of pregnancy. **Methods:** To investigate the effects of endometriosis on IVF cycles and post-IVF pregnancy outcomes, a retrospective study was conducted at a tertiary center between January 2014 and December 2022. The study included women undergoing IVF with endometriosis as the sole factor causing infertility, and women where the sole factor identified was male infertility. Cycles involving gamete donation were excluded from the analysis. **Results:** Out of the 1069 IVF cycles performed, 179 cases met the inclusion criteria. Among them, 51 cases (28%) presented endometriosis as the sole infertility factor, while 128 (72%) experienced male infertility. Women with endometriosis were slightly younger (35 versus 36 years) and both groups presented a normal body mass index. During the IVF cycle, women with endometriosis tended to have fewer than 5 antral follicles more frequently (58% versus 14%, p0,001), requiring higher gonadotrophin concentrations during ovarian stimulation (2700 vs 1850 UI, p0,001). Moreover, a trend to longer stimulation protocols is noted in women with





endometriosis (11 versus 9 days,  $p=0.001$ ). However, when comparing cases of sole endometriomas (19 out of 51) with the presence of concurrent superficial and/or profound endometriosis, both the primary infertility rate (59% vs 87%,  $p=0.02$ ) and the number of oocytes retrieved (9 vs 5 oocytes,  $p=0.01$ ) showed statistical significance. In cycles with embryo transfer ( $n=129$ , 72%), implantation and clinical pregnancy rates were slightly lower in women with endometriosis, but the differences were not statistically significant. Among 37 pregnancies achieved, 28 were singletons and 9 represented multiple pregnancies. Endometriosis did not significantly affect the obstetrical outcomes. **Conclusion:** In conclusion, this study suggests that endometriosis negatively impacts the ovarian reserve, leading to a reduced antral follicle count at younger ages. It may also influence the response to IVF cycle stimulation, requiring higher gonadotrophin doses. Due to limitations regarding the sample size, further research is warranted to confirm the impact of endometriosis on obstetrical outcomes.

## TREATMENT AND REHABILITATION OF PATIENTS OF REPRODUCTIVE AGE WITH PROLIFERATIVE UTERINE FIBROIDS

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**Study objective:** Clinical and morphological features of rapidly growing myomatous nodes, and their frequent combination with hyperplastic processes of the endometrium, endometriosis and functional cystic changes in ovaries, suggests that their development is based on disorders caused by sex steroids, implemented due to cell proliferation with impaired apoptosis processes, which requires an integrated approach, both in treatment and in recovery period. **Aims:** The aim of our study is to optimize combined treatment and rehabilitation of young patients, taking into account clinical and morphological features of uterine fibroids. **Materials and Methods:** We examined 72 patients with uterine myoma of reproductive age, from 20 to 45 years old. According to survey data, 11 (15.2%) patients had additional signs of grade II adenomyosis; endometrial hyperplasia - 14 (19.4%); external endometriosis - 6 (8.3%). Treatment was selected with prospect of restoring reproductive function and included three main stages: Stage I (3-4 months) - a temporary reversible decrease in estradiol in the blood serum of patients, by using synthetic analogues of natural luteinizing releasing hormone; Stage II - selective uterine artery embolization (UAE) followed by myomectomy in various modifications; Stage III - hormonal rehabilitation of patients with the prospect of restoring reproductive function. **Results:** After the first stage of treatment, patients noted: scarcity or absence of menstruation - 52 (72.2%) observations, a decrease in pain - 37 (51.4%) and appearance of vegetative-vascular reactions in form of "hot flashes" - 17 (23.6%). After selective UAE, ultrasonic signs of reduced blood flow were noted as early as 2 weeks later. Features of the molecular morphological picture of removed fibroid node were: normalization of cellular activity (proliferative index), bcl-2 and p53 apoptosis inhibitors, as well as a significant decrease in expression of estrogen and progesterone receptors in 70.8% of cases, compared with fibroid preparations, operated women, without prior hormonal therapy and UAE - 26.3%. **Conclusion:** An integrated approach to treatment and rehabilitation of young patients with rapidly growing uterine fibroids is reasonable and promising for recommendations in everyday clinical practice, which is especially important in case of combined gynecological pathologies, such as uterine fibroids, endometriosis and endometrial hyperplasia.

## MICRO-MAGNETIC RESONANCE SPECTROSCOPY OF INDIVIDUAL MAMMALIAN EMBRYOS: A CUTTING-EDGE, NON-INVASIVE TOOL FOR IDENTIFYING THE MOST VIABLE EMBRYOS

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**Problem statement:** Assisted reproductive techniques (ART) have undergone enormous technological improvements, yet the live birth rates per transfer remains around 25% worldwide. Non-invasive metabolic assessment of embryos has been proposed via analysis of culture medium or label-free fluorescence imaging. However, a new non-invasive technology for embryo characterization based on identifying metabolic markers via micro-magnetic resonance (micro-MRS) has been developed by Annaida technologies. In this study, the aim was to explore metabolic markers obtained using our innovative device to predict cryopreservation and developmental potential of

embryos in different mammalian species. **Methods:** The study involved bovine and porcine embryos that were shipped cryopreserved to the lab and thawed before analysis with our proprietary micro-MRS device. The study involved identifying distinct spectral peaks mainly originating from lipids, which serve as biomarkers for a novel non-invasive MRS-based embryo screening tool. Micro-MRS measurements were performed during 50 minutes per sample. Statistical analysis was performed using GraphPad Software V9.0, with statistical significance set at  $p<0.05$ . **Results:** The study examined bovine embryos and identified up to six markers, of which five were significantly higher expressed ( $p<0.05$ ) in late-arrested versus early-arrested embryos ( $n=32$  embryos). To further investigate lipid-biomarkers, we analysed porcine embryos that were delipidated to improve cryo-preservation. The observed signal spread correlated with the embryo's ability to cryopreserve, with 80% of the observed embryos correctly identified in alive and dead samples post-thawing through Sat lipid marker ( $n=18$ ) ( $p<0.05$ ). Readily detectable lipid markers were also confirmed in rabbit blastocysts and human oocytes. These represent the first model where a single mammalian cell could be analysed with micro-MRS. **Conclusion:** The main findings involve lipid biomarkers across different mammalian species showing that the micro-MRS-based device can be informative about embryo viability and cryotolerance. The study highlights the potential of micro-MRS for embryo screening, which could contribute to identify the most viable embryos for transfer.

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## ORAL PRESENTATIONS 9 - FETOMATERNAL MEDICINE

### RELIABILITIES OF THE SONOGRAPHIC EVALUATION FOR CERVICAL LENGTH AND ELASTOGRAPHY WITH PELVIC PARAMETERS IN TERM PREGNANCY BY VARIOUS LEVELS OF EXPERIENCED OPERATORS

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**Problem statement:** To assess the reliability of sonographic measurements of six cervical and pelvic parameters among three sonographers with varying levels of experience. **Methods:** A cross-sectional study was conducted on pregnant women with gestational age of 39 weeks or more. Each pregnant woman was examined by two sonographers with different levels of experience. The six parameters were measured, including cervical length (CL), cervical strain elastography (extrinsic type), posterior cervical angle (PCA), fetal head to perineum distance (FHPD), fetal head to pubis symphysis distance (FHSD), and angle of progression (AOP). Intraobserver and interobserver reliability were assessed using intraclass correlation coefficient (ICC) with a 95% confidence interval. The correlation between the values of parameters were analyzed by Pearson pairwise correlation coefficients. **Results:** A total of 66 pregnant women were enrolled. We found excellent intraobserver reliability for measurements of CL, PCA, FHPD, FHSD, and AOP and good to excellent intraobserver reliability for cervical strain values at regions endocervical canal (CEC) and entire cervix (CEX). Interobserver reliability was excellent for all pelvic parameters except FHPD. Strain values were moderate to excellent at the area of internal os. A significant negative correlation between CL and strain values at internal os region was observed. **Conclusions:** The pelvic parameters have excellent intra- and interobserver reliabilities excepted for FHPD. A high reproducibility of CL and cervical strain elastography at internal os level with negative correlation between these two parameters might play an important role to predict successful induction of labor.

### MATERNAL MORTALITY DUE TO DENGUE FEVER COMPLICATING TETRALOGY OF FALLOT - A RARE CASE REPORT

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**Problem Statement:** Pregnancies complicated by congenital heart defects deserve special multidisciplinary care. Tetralogy of Fallot is a common cyanotic heart disease and when untreated, may progress in severity during adulthood and particularly, pregnancy. An additional comorbidity, e.g. dengue fever, makes for a precarious situation with limited treatment options. There is a high likelihood of maternal death. We report such a case. **Methods:** Case report. **Results:** A 20 year-



old gravida 1 of 35-36 weeks gestation presented with an unabated fever for the past 5 days. No spontaneous bleeding episodes were noted. She was not in labor with active foetal movements. She had Tetralogy of Fallot, diagnosed at age 5 with no routine medication nor follow-up. Throughout pregnancy, her antenatal care was midwife-led only. Her vital signs were stable at presentation, bar her oxygen saturation topping at 94%. Her fetus was appropriate for gestational age from ultrasound. Her echocardiography revealed a subarterial doubly committed ventricular septal defect, 55% ejection fraction and low probability of pulmonary hypertension. Platelet level was at 22,000/mcL, having decreased from 127,000/mcL over 5 days. LDH was 403 U/L, ALT/AST 67/150 U/L. IgM dengue was non-reactive whilst IgG dengue was reactive. She was diagnosed with 35-36 weeks of gestation with modified WHO class III congenital heart disease, Tetralogy of Fallot, and dengue hemorrhagic fever. She was given a platelet concentrate transfusion to increase her platelets to 50,000/mcL in preparation for pregnancy termination. However, she developed severely worsening dyspnea during transfusion and there were signs of foetal distress. She underwent emergency caesarean section and a repeat echocardiography afterwards. A severe supraventricular pulmonary stenosis was discovered. There was cardiomegaly and pulmonary oedema on chest x-ray. During intensive observation, her heart continue to fail with progressive decline of blood pressure despite maximum cardiac support. She eventually passed away approximately 36 hours post-surgery from cardiogenic shock and complications of transfusion-related acute lung injury. **Conclusion:** Despite optimum multidisciplinary care, pregnancy complicated with congenital heart defects further burdened by a tropical infection, such as dengue hemorrhagic fever is extremely difficult to manage well, even at a tertiary facility. Timely diagnosis, early referral and holistic management should be optimised.

#### TELE-MEDICINE VERSUS TRADITIONAL FOLLOW-UP FOR EVALUATION OF MATERNAL AND FETAL OUTCOMES IN GESTATIONAL DIABETES MELLITUS

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Patients diagnosed with Gestational Diabetes Mellitus (GDM) were welcomed to join the study after an explanation was conducted to all participants. Then they were randomized and classified into telemonitoring (Group 1) and the traditional (Group 2) using the randomization protocol. Pregnant women who had type 1 or type 2 diabetes mellitus, were excluded from the current project. The women in Group 1 were provided with a telemonitoring device. The daily blood sugar was monitored by using of telemedicine device. Additionally, weight management and structured dietary advice were regularly followed up by using an application of the telemonitoring system. IBM SPSS statistics software was used for the descriptive statistical analysis of the data. During the study period of 18-20 weeks throughout pregnancy and postdelivery, almost 50 patients with GDM were followed up either by telemonitoring (Group 1; n=24) or traditionally (Group 2; n=26). Almost 45.8 % of GDM women who used the telemonitoring system had healthier pregnancies without any complications as compared to 30.8 % of GDM women who did not use telemedicine. The other associated antenatal complications included pregnancy-induced hypertension (PIH) and hypothyroidism were more frequent in Group 2 than Group 1. Most of the babies delivered to women at group 1 were full-term (66.7%), and only (12.5 %) of them were preterm. However, in the traditional group, (53.8 %) of babies were born at full term, and (15.4 %) of them were preterm, beside one was intrauterine fetal death. Generally, maternal and fetal outcomes as a result of the telemonitoring were more efficient than the traditional follow-up.

#### PREVALENCE OF COMPLETE COURSE OF DEXAMETHASONE IN PREGNANT WOMEN WITH LATE PRETERM DELIVERY IN SIRIRAJ HOSPITAL

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**Problem statement:** To evaluate the prevalence of a complete course of dexamethasone in pregnant women who delivered late preterm and the association with neonatal outcomes. **Methods:** Medical records of 1,500 pregnancies delivered at late preterm were reviewed retrospectively. Baseline and obstetric characteristics, dexamethasone administration and pregnancy outcomes were extracted. Neonatal outcomes were analyzed separately for singleton and twins, then compared among three groups as complete, incomplete and no dexamethasone group. **Results:** The overall

prevalence of complete dexamethasone was 31.7% among the study population, with rates of 29.2% and 48.4% in singleton and twins, respectively. In singleton pregnancies, after adjusting for covariates, the analysis revealed that the complete course group was significantly less likely to have an APGAR score less than 7 at 5 minutes compared to the incomplete and no dexamethasone group (adjusted RR 0.22, 95% CI 0.05-0.94 and 0.11, 95% CI 0.02-0.64, respectively). Furthermore, the complete course group was also significantly less likely to have apnea compared to the incomplete group (adjusted RR 0.32, 95% CI 0.13-0.78). In twin pregnancies, neonatal sepsis in the complete course group had a lower incidence compared to the incomplete and no dexamethasone group (adjusted RR 0.02, 95% CI 0.001-0.65, and 0.005, 95% CI 0.001-0.3, respectively). **Conclusion:** Completed course of dexamethasone were administered only one-third of late preterm pregnancies. Although incidence of APGAR score at 5 minutes less than 7 and apnea in singleton, as well as neonatal sepsis in twins, were lower than the incomplete course.

**Keywords:** late preterm delivery, dexamethasone, complete course, neonatal complications

#### GLUCOSE VALUE LOWER THAN 5 MMOL/L AFTER A GLUCOSE LOADING TEST IS ASSOCIATED WITH ADVERSE PREGNANCY OUTCOMES RELATED TO GESTATIONAL DIABETES: SYSTEMATIC REVIEW AND META ANALYSIS

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**Problem Statements:** Gestational diabetes mellitus (GDM) is associated with abnormal fetal growth. We aim to investigate pregnancy outcomes of a low glucose value after a glucose load (reactive hypoglycaemia - RH) to determine if women with RH based on certain cutoff values (5 mmol/l) have similar adverse outcomes to women with gestational diabetes. **Methods:** The search strategy was applied to 4 databases between 19 December 2022 and 15 January 2023: Medline, Embase, Web of science, and Maternity & infant care database. MeSH terms and keywords were combined. The outcomes of interest were GDM- and hyperglycemia-related adverse pregnancy outcomes including large for gestational age (LGA), macrosomia, small for gestational age (SGA), Intrauterine Growth Restriction (IUGR), low birth weight (LBW), caesarean delivery, NICU admission, neonatal hypoglycaemia, polyhydramnios, 5-min APGAR score 7, and preterm delivery. Abstracts and papers were reviewed by two assessors for inclusion. Studies were included irrespective of the threshold used to define 'hypoglycaemia'. Disagreements were resolved by the senior author. Risk of bias assessment was performed with the Robvis tool, adapted to the Newcastle Ottawa scale. Studies deemed at low risk of bias were extracted and analysed with the Review Manager software. Subgroup analysis was performed based on glucose 5mmol/l as threshold. **Results:** From 14,745 records, 40 studies were selected for full-text assessment. Twenty-eight studies reporting on 75,453 participants, including 14,607 women with low glucose values, fulfilled eligibility criteria. Pregnancies with reactive hypoglycaemia lower than 5 mmol/l had a higher risk of SGA (RR = 1.43, 95%CI = 1.16, 1.76) and polyhydramnios (RR = 1.84, 95%CI = 1.07-3.16) compared to women with normal glucose tolerance. **Conclusions:** Women with glucose values lower than 5 mmol/l after a glucose load are at risk for polyhydramnios, typically related to pregnancy diabetes. Also, these women are more likely to develop SGA. A prospective study is needed.

#### PHEOCHROMOCYTOMA IN PREGNANCY: A DIAGNOSIS NOT TO BE MISSED

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**Problem Statement:** Pheochromocytoma is a rare, potentially serious disease due to the associated hypertensive crises and inherent risk to life. The challenge lies in the timely diagnosis of this cause of hypertension in pregnancy to improve the maternofetal outcomes. **Methods:** Review of clinical case and literature about pheochromocytoma. **Results:** We present a 36-year-old pregnant woman, IIG IP (induced vaginal delivery due to preeclampsia). She was referred to our hospital for chronic hypertension near 10 weeks of gestation. At that time, she present also palpitations and night sweats. Lowering the blood tension was not easy despite medical treatment. We performed urinary and serological analyses and imageology exams. A diagnosis of pheochromocytoma was made





after the evaluation of urinary and plasmatic metanephrines at 24 weeks of gestation. While hospitalized, alpha-adrenergic blockade was started with phenoxybenzamine. After a multidisciplinary meeting, it was decided to postpone adrenalectomy to the postpartum period. The pregnancy was complicated by severe hypertensive crises and need of urgent delivery despite therapeutic measures. We delivered by c-section a masculine newborn of 1020g, Apgar Index 9/9/10 at 29 weeks of gestation. The woman was posteriorly submitted to adrenalectomy surgery. **Conclusions:** Notwithstanding this rare etiology of hypertension, pregnancy is a privileged period for its diagnosis. Thus, the headache-sweating-palpitations triad should evoke pheochromocytoma to the obstetrician. The prognosis is directly associated with timely diagnosis as well as multidisciplinary management.

## ORAL PRESENTATIONS 10 - OTHER

### ENHANCING PUBLIC HEALTH: CHALLENGES IN PROMOTING TRIPLE ELIMINATION PROGRAM AND SYPHILIS TREATMENT ACCESSIBILITY IN INDOONESIAN PRIMARY HEALTHCARE FACILITY FOR PREGNANT WOMEN - A CASE REPORT

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**Problem statement:** The Indonesian government prioritizes early screening programs for sexually transmitted diseases among pregnant women, particularly those with potential vertical transmission. However, a proportion of pregnant women still refuse to embrace this scheme, including our patient. She contracted syphilis late in her pregnancy (one month before term), leading to poor maternal and neonatal outcomes. **Results:** Based on the result of the study, the challenges lie on pregnant women compliance and participation. Another problem is the poor availability of benzathine penicillin as first-line therapy for primary syphilis in pregnant women as it is not yet widely available in primary healthcare facilities throughout the country due to limited drug supplies. Such drug shortage is amplified by patients being required to undertake a lengthy hospital referral process to access the required medications. **Conclusion:** In order to reduce the infection rate of hepatitis B, HIV and syphilis among pregnant women, the government should promote a free triple elimination scheme more rigorously as a screening initiative and to ensure the accessibility and availability of drugs throughout all primary healthcare centers.

### RECURRENT PREGNANCY LOSS IN COMPLETE SEPTATE UTERUS WITH DUPLICATED CERVIX AND LONGITUDINAL VAGINAL SEPTUM: A CASE REPORT AND REVIEW OF THE LITERATURE

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**Problem Statement:** Congenital uterine anomalies, including complete septate uterus with duplicated cervix and longitudinal vaginal septum, pose diagnostic and management challenges due to their rarity and complexity. Standardized diagnostic criteria and surgical approaches are lacking, leading to varied obstetric and perinatal outcomes. **Methods:** A case report of a 26-year-old woman with recurrent pregnancy loss and a complex uterine anomaly was presented. Various diagnostic modalities, including 3D ultrasound, hysteroscopy, and laparoscopy, were used to accurately characterize the anomaly. Surgical intervention involved hysteroscopic resection of the uterine septum and diagnostic laparoscopy. **Results:** The patient's anomaly was characterized by a complete septate uterus, duplicated cervix, and longitudinal vaginal septum. Surgical intervention successfully resected the uterine septum, achieving a single uterine cavity. The patient's postoperative recovery was uncomplicated, and she opted for expectant management for future pregnancies. **Conclusion:** The rarity and diagnostic challenges of complex uterine anomalies highlight the need for a combined diagnostic approach involving various imaging and surgical techniques. Hysteroscopic metroplasty shows promise in improving obstetric outcomes and reducing the risk of pregnancy loss, but recent studies have shown that it should be done as a routine procedure. The importance of shared decision-making in determining the appropriate course of action is emphasized. Ongoing research is needed to refine diagnostic criteria, surgical techniques, and management strategies for these anomalies.

### ISTHMOCELE DURING PREGNANCY - TREAT IT OR LEAVE IT?

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**Problem statement:** An isthmocele is a defect of the caesarean scar characterised by myometrial discontinuity, similar to a diverticulum located at the level of the anterior isthmus of the uterus. It is an iatrogenic entity created due to the worldwide increase rate of cesarean delivery. The presence of an isthmocele has been associated with increased obstetrical complication such as cesarean scar ectopic pregnancy, uterine rupture, placenta accreta. The incidental discovery of an isthmocele during a first trimester ultrasound scan render difficult the management decision between surgical treatment and continuation of pregnancy, expectative management or termination of pregnancy and subsequent isthmocele surgical repair. **Methods:** We present the case of a 28 Years old, G2P1 patient, diagnosed with an isthmocele on the first trimester ultrasound scan performed at 7 Weeks. We discussed the available treatment options, and the patient chose surgical treatment and continuation of pregnancy. **Results:** We performed a laparoscopic repair of the caesarean scar defect on a 8 weeks ongoing pregnancy. Ultrasound guidance allowed the correct identification of the niche during laparoscopy. The defect margins were excised into healthy tissue, then sutured in a double-layer. The pregnancy evolved uneventfully and was terminated by C-section at 38 weeks of gestation. **Conclusion:** Data regarding the management of an isthmocele during pregnancy is scarce. Surgical management by minimally invasive surgery seems to be a feasible option in selected case.

### (DIS)HOPE IN WOMEN DIAGNOSED WITH PELVIC CONGESTION SYNDROME (PCS)

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Chronic pelvic pain (CPP) is a common and underdiagnosed problem in women, it has a multifactorial cause, which makes diagnosis and treatment difficult. One of the possible causes of CPP is the pelvic congestion syndrome. Women diagnosed with PCS reported it took a long time and suffered a lot to be diagnosed, in addition the impact of the disease. The psychoanalytical listening to the history of these women revealed experiences of death anxiety, psychic disorganization, impotence, depression. Listening, validation of pain, diagnosis and appropriate intervention interrupt this deadly circuit and instill hope to rescue interrupted dreams.

### EARLY SECOND TRIMESTER CESAREAN SCAR ECTOPIC PREGNANCY: UTERINE RUPTURE AFTER ASPIRATION

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**Problem statement:** Cesarean scar pregnancy (CSP) is a rare form of ectopic pregnancy, which incidence is estimated at between 0,05 to 0,4% of all pregnancies. The pathophysiology of CSP is not fully understood. A possible mechanism is that trauma caused by a caesarean section creates microscopic tracts through which an implanting blastocyst abnormally invades the affected myometrium. The uterine rupture and massive hemorrhage are the major complications. **Methods:** We present a case of CSP diagnosed in the second trimester with uterine rupture during aspiration. **Results:** A 27-year-old woman, gravida 2 para 2 (cesarean section and eutocic delivery), was referred to the gynecology emergency department with a complaint of a vaginal bleeding with pelvic discomfort, with 3 months of amenorrhea. Vaginal examination shown an active vaginal bleeding and on bimanual palpation there was tenderness at the anterior fornix. Transvaginal ultrasound confirmed the presence of a gestational sac containing a live fetus implanted at the location of the previous caesarean scar. The head circumference corresponded to 15 weeks and 6 days of gestation with the presence of cardiac activity. Dilatation and ultrasound-guided vacuum aspiration was performed under general anesthesia. A silicone balloon was inserted in lower segment of the uterus with 60 ml of normal saline. Two hours after surgery, she became hemodynamic unstable with signs of hypovolemic shock, and was immediately prepared for an emergency laparotomy with fluid and blood resuscitation. The perioperative findings included a retroperitoneal hematoma close to the right ovary extending to the lower segment of the anterior wall of the uterus, without active bleeding. Abdominal packing was performed in the pelvic cavity and in the right flank. On day 3, abdominal packing was





removed. On day 9, the transvaginal ultrasound showed the retroperitoneal hematoma was 71\*30mm and the patient was discharged. **Conclusion:** Late diagnosis of CSP can be associated with serious life-threatening obstetric complications. The uterine rupture after the aspiration should be immediately suspected when faced with hemodynamic instability. In this case, it was possible to treat without hysterectomy.

### CHALLENGES OF HUMAN REPRODUCTIVE MEDICINE IN A CHANGING EUROPE: AN INNOVATIVE PROFESSIONAL CURRICULUM FOR MEDICAL EDUCATION: COHRICE PROJECT

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The Clinical Department of Gynaecological Endocrinology and Reproductive Medicine of the University Department of Gynaecology, Medical University of Vienna has been participating in a trilateral Erasmus Plus project since 11/2021. The project was acquired by three cooperation partners in the field of obstetrics and gynaecology (University of Pecs, Hungary; Universitatea de Medicina, Farmacie, Stiinte si Tehnologie George Emil Palade din Tirgu Mures, Romania; and the Medical University of Vienna, Austria) to develop an innovative study guide for medical students and residents as well as their teachers on socio-economic issues affecting reproductive trends in Europe. The consortium represents three Central European countries with different cultural and socio-economic backgrounds. Increasing migration trends can be observed from East to West, as well as more resources for medical care and education. Despite all these differences, a decline in reproductive trends can be observed for the Central European region, as well as for Europe as a whole.

**Methodology:** In this Erasmus plus project we will develop an integrative course in gynaecology between 2022- 2024. First, we will conduct a survey to determine the current state of knowledge on reproductive trends, psychological and socio-economic aspects of reproductive medicine among medical and postgraduate students. Based on the results, knowledge gaps will be identified. The three cooperation partners will develop a curriculum that comprehensively addresses these topics. The newly created integrative curriculum will be disseminated at basic and advanced levels. Teachers will receive a teachers guide and a syllabus for this integrative curriculum. After implementation, the knowledge gain and project quality will be evaluated through a survey and the material will be adjusted if necessary. **Results:** We aim to make a relevant contribution to the curriculum of medical and postgraduate students in order to contextualise their knowledge and stimulate their interest in how societal changes affect health and health care strategies. **Summary:** This kind of knowledge makes students more innovative, curious and motivated. We believe that innovative, problem-oriented thinkers can only emerge from medical students whose education is interdisciplinary and in the context of culture and society. This aspect challenges the limits of conventional concepts of medical education.

## ORAL PRESENTATIONS 11 - FETOMATERNAL MEDICINE; GYNECOLOGY

### FETOMATERNAL MEDICINE

#### CHALLENGES IN DETERMINING CHORIONICITY AND DIAGNOSING SELECTIVE FETAL GROWTH RESTRICTION IN MULTIFETAL PREGNANCIES WITH SUSPECTED TWIN-TWIN TRANSFUSION SYNDROME: A CASE REPORT

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**Problem statement:** Chorionicity is a major determinant of perinatal outcome in twin pregnancies. Mortality and morbidity are higher in monochorionic than dichorionic twin pregnancies. A complication associated with monochorionicity is twin-twin transfusion syndrome (TTTS) and selective Fetal Growth Restriction (sFGR). sFGR occurs when the nutrient and oxygen content through the placenta is insufficient for fetal growth in twin pregnancies. The incidences of sFGR in monochorionic and dichorionic pregnancies are 19.7% and 10.5% respectively. TTTS occurs due to abnormal and intercorrelated blood vessels causing an imbalance in blood flow leading to the

formation of "recipients" and "donors". Diagnosis depends on the evaluation of the number of placentas, the characteristics of the intertwined membranes, and the fetal sex. **Methods:** Case Report. **Results:** A 38-year-old woman came for routine antenatal consultation at 34-35 weeks' gestation. The patient denied any complaints during pregnancy. Detailed fetal ultrasound revealed a monochorionic diamniotic twin pregnancy suggestive towards TTTS with positive T sign and significantly different volumes of amniotic fluid surrounding each fetus. After delivery, a dichorionic diamniotic placenta was present with the first neonate weighing 2610 grams, and normal placenta sized  $\pm 20 \times 20 \times 2$  cm, and the second neonate weighing only 510 grams with a placenta sized  $\pm 10 \times 10 \times 1.5$  cm. The diagnosis of sFGR during pregnancy was established according to the Delphi criteria that the smaller twin had an estimated fetal weight 25%. **Conclusion:** The ideal time to determine chorionicity is in the first trimester of pregnancy compared to the second and third trimester with diagnostic accuracy approaching 100%. Definitive diagnosis in this case was difficult due to the first ultrasound being performed in the third trimester. Confirmation of chorionicity in multifetal pregnancies is challenging for the clinician if performed in the third trimester. The recommended frequency of ultrasound examination in twin pregnancies is once every 2-4 weeks so that detailed monitoring of twin fetal anatomy and physiology can be evaluated stepwise.

**Keywords:** Chorionicity, Multiple pregnancy, sFGR, Twin-Twin Transfusion Syndrome (TTTS)

### CORONAVIRUS IN PREGNANCY

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**Objective:** To investigate the clinical picture of coronavirus in infected pregnant women in general and in the Zadar County and its outcome.

**Method:** The obtained data from the clinical picture of coronavirus in infected pregnant women and its outcome was analyzed from the databases of patients from the Ministry of Health of the Republic of Croatia and Zadar General Hospital. The analysis was classified according to the degree of disease into self-isolation for contact, treatment at home, hospitalization, the outcome of childbirth by the type of method, week of birth and body weight of the fetus. **Results:** In the period from February 1st, 2020 to March 31st, 2022 in Zadar General Hospital there were 4136 births per 162481 inhabitants, which is 2.54%. There were 560 (13.53%) pregnant women who were in contact with the infected, positive or hospitalized before and during pregnancy. Of these, 185 (33.03%) pregnant women were in self-isolation before or during pregnancy. 75 pregnant women (40.54%) were in contact with the infected before pregnancy. There were 110 (59.45%) in contact with the infected during pregnancy. 370 (66.07%) were positive pregnancies before and during pregnancy. Before pregnancy 65 (17.56%) were positive and 305 pregnant women were positive during pregnancy (82.43%). There were 5 (0.89%), hospitalized pregnant women and none were on ICU. Regarding the outcome of childbirths, 437 (78.03%) pregnancies ended in vaginal and 122 (21.78%) SC, 1 (0.17%) childbirth VE. In the term,  $\geq 37w$ , there were 536 births (95.71%), 37w 24 (4.28%) births (1 twin), body weight 2500g there were 18 (6 twins) (3.21%),  $\geq 2500g$  542 (96.78%), stillbirths were 3 fetuses 0.53% (1 hygroma), none in term.

**Conclusion:** Analyzing the results of the study period, I realized that pregnant women had mostly milder forms of the disease. I didn't notice, except for 3 stillbirths, that the number of stillbirths increased, nor the number of premature births nor children underweight, below 2500g. Lastly, that patients who were in contact or treated before pregnancy became pregnant properly.

#### DIAGNOSTIC ACCURACY OF ANGIOGENIC MARKERS IN PREECLAMPSIA DIAGNOSIS – A REALITY IN A TERTIARY CENTRE

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**Problem Statement:** sFlt-1/PIGF ratio has been suggested as a potential biomarker for preeclampsia diagnosis, but its diagnostic accuracy is still unclear. **Methods:** This is a retrospective case-control study of pregnant women admitted to our maternal-fetal unit due to suspected preeclampsia between January 2021 and December 2022. Group A consisted of women with gestational hypertension (n=43) and Group B of women with confirmed preeclampsia (n=99). sFlt-1/PIGF ratio was collected at admission in both groups. Low angiogenic imbalance was defined as lower than 38. Severe imbalance was defined as above 85 and 110, for gestational ages under and at or above 34 weeks, respectively. **Results:** Mean



gestational age at admission was similar between groups ( $p=0.142$ ). In group A, low, moderate and high sFlt-1/PIGF ratios occurred in 60.5%, 32.6% and 7.0% of the cases, respectively. On the other hand, in group B, low, mild and severe angiogenic imbalance was present in 30%, 26% and 44% of the cases. Significant differences were found between groups ( $p<0.001$ ). No correlation was found between ratio values and gestational age ( $p=0.76$ ). Mean value for sFlt-1/PIGF ratio was  $33.7 \pm 35.6$  in group A and  $179.0 \pm 277.4$  in group B ( $p<0.001$ ). When considering ratios above 38 as threshold for a positive test, the test's sensitivity was 73.7% and specificity was 51.2%. Positive (PPV) and negative predictive values (NPV) were 77.7% and 45.8%, respectively. Differently, when considering a positive test as severe angiogenic imbalance, at thresholds of 85 and 110 according to gestational age, sensitivity decreased (44%), but specificity increased significantly (93%), at a PPV of 93.6% and NPV of 41.7%. **Conclusion:** Severe angiogenic imbalance is characteristic of preeclampsia, regardless of gestational age at its measurement. Nevertheless, its reduced sensitivity at higher thresholds might increase failure of diagnosis and morbidity.

## WAGR SYNDROME AND PREGNANCY ULTRASOUND PRENATAL DIAGNOSIS CASE REPORT

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**Problem statement:** The clinical association of Wilms' tumor, aniridia, genitourinary anomalies, and mental retardation (WAGR) syndrome is a rare genetic disorder characterized by a de novo deletion of the distal band of 11p13 along with deletion in several neighboring gene regions, containing genes PAX6 (paired box) and WT1 (Wilms' tumor) gene, and can also be inherited in an autosomal dominant manner with prevalence 1 in 500,000 to 1 million. WAGR syndrome is characterized mostly by brain and heart malformations, aniridia, genitourinary disorders, and mental retardation. Antenatal ultrasonographic presentation with extremity issues of this syndrome has never been reported. Only one case prenatally detected was reported with brain and renal malformations. **Methods:** We report a case of WAGR syndrome diagnosed prenatally at 32 weeks of gestation based on ultrasound imaging, genetic examination, and autopsy findings. The ultrasonographic findings included besides the short all long bones, borderline brachycephaly, flat nose, disproportion in all ultrasound ratio measurements, increased nuchal fold, hypertrophic cardiomyopathy, and Blake's pouch cysts were also suspected. These findings mandate a search for potentially associated genetic disorders. **Results:** Molecular karyotyping confirmed deletion of 11p15.1p12 including region of 11p13. The deletion was also confirmed with FISH analysis. After extensive counseling, the couple opted to terminate the pregnancy. Autopsy findings confirmed aniridia, short all long bones, hypertrophic cardiomyopathy, and macroglossia. **Conclusion:** The present case demonstrates for the first time that WAGR syndrome could be manifested by fetal ultrasound bone abnormalities besides all classical malformations. Given the availability and extensiveness of non-invasive testing, in our case, it could be sufficient to confirm the prenatal diagnosis.

## PERIPARTUM PUBIC SYMPHYSIS DIASTASIS: DIAGNOSIS AND MANAGEMENT IN 2023

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**Problem statement:** Peripartum Pubic Symphysis Diastasis (PPSD) is a rare post-partum complication that can be at times debilitating for some patients. It occurs in 1 in 300 to 1 in 30,000 patients with many patients not appropriately diagnosed prior to discharge from hospital. Considering that PPSD is a rare condition, it can be at times difficult to diagnose and can be confused with pelvic girdle pain. Some risk factors for this condition include macrosomia, operative procedures/maneuvers during the delivery, degenerative changes in the sacroiliac joints, increased release of relaxin, estrogen and progesterone. This condition is often treated conservatively but surgery is sometimes needed when the pubic symphysis separation is severe. The prognosis is usually great if diagnosed and treated promptly. **Case:** A 23-year-old primigravid female at term gestation,

presented to obstetric triage area in active labor. She received an epidural and gave birth 24 hours later after a prolonged active labor. The infant was large for gestational age at 4560g birth weight. On post-partum day one she was found to have severe pelvic pain with significant difficulty walking. **Methods:** An Xray showed pubic symphysis separation of 1.8 cm that was managed conservatively with pelvic binder and a walker while in the hospital. She was discharged with instructions to follow up in the outpatient for physical therapy and further management. **Result:** Patient had her mobility limitations improve with the use of the binder and walker. Her pelvic pain improved but it had not resolved by the time she was discharged. **Conclusion:** Since PPSD is a rare condition and its symptoms overlap with other conditions that can be found post-partum, it is important to do diagnostic imaging in those patients that have the risk factor criteria for PPSD and have pain with difficulty walking after delivery. Early diagnosis with early mobility assistance during their post-partum stay is crucial in the management of PPSD. Outpatient physical therapy is also crucial to their recovery and return to normal daily activities.

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Institutional review board (IRB) approval not required because this is a case report.

## GYNECOLOGY

### EARLY RECOGNITION AND MINIMALLY INVASIVE MANAGEMENT OF URETERAL INJURY AFTER TOTAL HYSTERECTOMY

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**Aim:** To estimate the early detection and effective interventions for iatrogenic ureteral injuries after hysterectomy. Patients and methods: This was a multicentre retrospective study of patients presenting with iatrogenic ureteral injuries after total hysterectomy in our hospital from October 2013 to December 2021. The study information was obtained from our electronic clinical system, and the clinical features included age, type of gynaecologic disease, primary surgery, time of diagnosis of ureteral injury, therapy for injury and outcome. **Results:** A total of 22 patients presenting with ureteral injury after total hysterectomy were included in this study. The mean age was 48 years, the mean time of diagnosis was 12 days, 7 of the cases (31.8%) were found intraoperatively, and 15 of them (68.2%) were found postoperatively. The types of disease causing the injury were benign gynaecological diseases in 14 of the patients (63.6%) and malignant diseases in 8 of the patients (36.4%). The primary treatment was ureteral stenting and successfully performed in 8 patients (36.4%), with 14 failure cases. One failure patient was confirmed to have a ureterovaginal fistula on the twelfth day after hysterectomy due to suture, and the fistula was treated by laparoscopic vesicoureteral reimplantation three months later. Most importantly, in one case, the patient had the same cause of ureteral injury as the patient in the failure case, the ureteral injury was found through surgical video recording, and it was detected early on the fourth day after hysterectomy and was promptly cured by transvaginal suture removal and ureteral stenting. None of the female patients died. **Conclusion:** Early dissection, ureteral stent implantation and transvaginal suture removal will provide a new minimally noninvasive treatment option for treating ureteral injuries. We initially describe a noninvasively and successfully treated case of a ureteral injury after hysterectomy, and the technique described is a novel therapy for iatrogenic ureteral injuries to obtain better outcomes. This project was financially supported by Special Health Subsidy of Fujian Provincial Finance Department (2100206 50502 302), Health Care Youth and Middle-aged Training Project of Fujian Province (2021GGB014), And Fujian Provincial Science and Technology (2020Y9151, 2021Y9169, 2021Y9180). Fujian Research and Training Grants for Young and Middle-aged Leaders in Healthcare

## ORAL PRESENTATIONS 12 -OTHER; FETOMATERNAL MEDICINE; DIAGNOSTIC PROCEDURES

### FETOMATERNAL MEDICINE

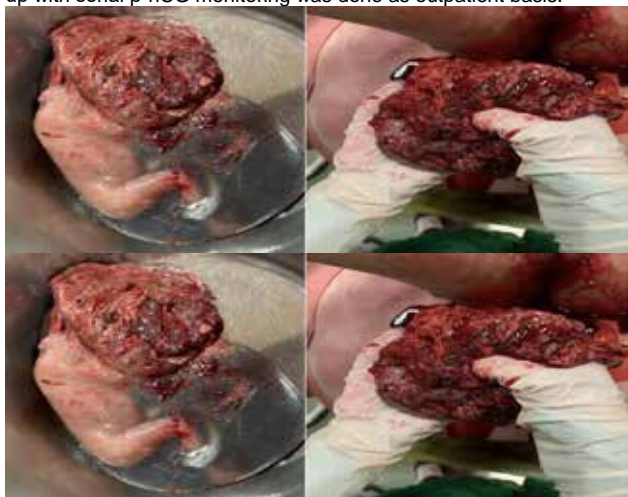
#### A CASE REPORT OF COMPLETE HYDATIDIFORM MOLE COEXISTING WITH NORMAL FETUS





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**Problem statement:** To report a case of Twin molar pregnancy with coexistent viable fetus. To search for local incidence of twin molar pregnancy with coexisting viable fetus and to describe the clinical, diagnostic and therapeutic aspect of complete hydatidiform mole with coexisting fetus. **Case:** A case of a 22-year old female with complete hydatidiform mole with coexisting fetus, with known hyperthyroidism. Serial ultrasonographic studies and beta-human chorionic gonadotropin ( $\beta$ -hCG) was done to confirm presence of the complete hydatidiform mole. Pregnancy was carried up to 20 3/7 weeks age of gestation. Due to heavy vaginal bleeding and imminent abortion the fetus was delivered followed by suction curettage. Methotrexate administration was done post correction of anemia. And close follow up with serial  $\beta$ -hCG monitoring was done as outpatient basis.



Abortus (200g) with a normal placenta followed by passage of vesicular tissues approximately 600cc. Suction curettage done with estimated blood loss of 600cc

**Discussion:** Complete hydatidiform mole coexisting with normal fetus (CHMCF) has a rare occurrence with an incidence rate of 1/22,000 to 1/100,000 pregnancies. These uncommon cases pose several diagnostic and management challenges. Molar pregnancy is an abnormal trophoblastic proliferation with villous stromal edema. Complete hydatidiform mole with coexisting fetus is unusual case. CHMCF is usually diagnosed during the second trimester, sonographic features of hydatidiform mole presents at 2nd trimester. There is a 40% chance of fetal survival in patients with CHMCF thus close follow up and prenatal checkup is important. There is mother versus fetus dilemma in the management of CHMCF. Risk for mother include excessive bleeding, pre-eclampsia, hyperthyroidism and development of GTN hence, these complications have to be considered to decide whether to continue or terminate the pregnancy. Therefore, in CHMCF, the management is individualized.

**Conclusion:** Complete mole with coexisting fetus in the spectrum of gestational trophoblastic disease occurs sporadically. There are limited reports and studies pertaining to the diagnosis and management of this disease. There is still no standard guideline regarding fetal surveillance, management, timing and manner of termination of pregnancies complicated with mole. Thus the treatment and management is suggested to be individualized.

#### THE EFFECT OF PARITY ON DIFFERENT PREGNANCY AND NEONATAL ADVERSE OUTCOMES AMONG WOMEN WITH PREGESTATIONAL DIABETES

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**Problem Statement:** Pregestational diabetes mellitus (PGDM) is associated with a higher incidence of adverse maternal and neonatal outcomes, compared to the general population. Parity has been shown to affect the risk to several of these adverse outcomes, however, its effect among women with PGDM is not clear. We aimed to assess the effect of parity on different pregnancy and neonatal adverse outcomes, among these women. **Methods:** We retrospectively compared between consecutive pregnancies carried by primiparous vs. multiparous women with pregestational type 1 and

type 2 diabetes. Pregnancy adverse outcomes included maternal hypertensive complications of pregnancy (HTN complications), cesarean section (C-section) and shoulder dystocia. Neonatal adverse outcomes included large for gestational age (LGA), small for gestational age (SGA), birth weight percentile, clinically significant neonatal hypoglycemia, neonatal jaundice requiring phototherapy and neonatal respiratory complications. **Results:** Of 152 pregnancies in 111 women, 98 (64.5%) were carried by multiparous women. Multiparity significantly increased the risk for a LGA neonate (OR 1.07-1.44) and for neonatal hypoglycemia (OR 1.02-1.42), while significantly decreased the risk for maternal HTN complications (OR 0.84-0.99), after adjustment for several possible confounding models. Sensitivity analyses, addressing parity as a categorical variable and assessing the effect of parity in a nested case-control births sample, showed similar trends. **Conclusion:** In women with PGDM, multiparity was shown as a risk factor for neonatal adverse outcomes (LGA and neonatal hypoglycemia), while having a protective effect on maternal HTN complications.

#### THE EFFECT OF ACUPRESSURE AND HALOGEN LIGHT STIMULATION ON NONSTRESS TESTING AND ANTENATAL ANXIETY: A RANDOMIZED CONTROLLED TRIAL

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**Problem statement:** Acupressure and halogen light stimulation, are used to reduce false non-reactive nonstress test results related to fetal sleep. This study was conducted to determine the effect of acupressure and halogen light stimulation on nonstress testing and anxiety during pregnancy. **Methods:** This study is a randomized controlled experimental study. The population of the study consisted of pregnant women who were requested to have a nonstress test, and the sample included 132 pregnant women (acupressure group = 44; halogen light group = 45, and control group = 43). The acupressure group was applied acupressure on the Zhiyin acupuncture point three times, the halogen light group was applied halogen light stimulation twice on the fetal head from the mother's abdomen. Data were collected using a Pregnant Information Form, a Nonstress Test Follow-up Form, and the State Anxiety Inventory. Statistical analyses included One-Way ANOVA, Kruskal-Wallis, Mann-Whitney U, and chi-square tests. **Results:** In our study, there was no difference between the acupressure and halogen light groups in terms of the mean number of fetal movements, the number of accelerations, the time to the first acceleration, and the time to reach the reactive result in the nonstress test ( $p > .05$ ), while the mean number of fetal movements and accelerations of these two groups were higher, and the mean time to the first acceleration and the mean time to reach the reactive result in the nonstress test were shorter than those of the control group ( $p > .05$ ). In addition, no statistically significant difference was found between the groups in terms of mean state anxiety inventory scores ( $p > .05$ ). **Conclusion:** While acupressure and halogen light stimulation increased the rates of reactive nonstress tests, it was found that they had no effect on pregnant women's anxiety.

**Keywords:** acupressure, anxiety, cardiotocography, halogen light stimulation, nonstress test

#### A REPORT FOR A CASE OF UTERINE ARTERIOVENOUS MALFORMATION CO-EXISTING WITH A PLACENTA ACCRETA IN A 30-YEAR-OLD POST CURETTAGE FOR MISSED MISCARRIAGE

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**Problem statement:** This unique case report outlines the complexities surrounding a 30-year-old woman experiencing recurrent and persistent first-trimester vaginal bleeding after undergoing two curettages for missed miscarriages. The distinctive nature of this case is marked by the co-existence of uterine arteriovenous malformation (UAVM) and placenta accreta, both rare conditions that are infrequently found to be the underlying causes of early pregnancy bleeding. **Methods:** However, after an equivocal hysteroscopy, the utility of advanced diagnostic modalities, including transvaginal ultrasonography with Doppler studies and pelvic angiography, facilitated the confirmation of a UAVM diagnosis. Embolization therapy was subsequently implemented successfully, culminating in the cessation of the vaginal bleeding. **Results:** Unexpectedly, a month later, the vaginal bleeding recurred. A





subsequent transvaginal ultrasound revealed focal placenta accreta, a condition known for its implications on fertility. In response to this, methotrexate therapy was initiated, which led to the ultimate cessation of vaginal bleeding. **Conclusion:** This case accentuates the critical value of comprehensive diagnostic methodologies, particularly Doppler ultrasonography and pelvic angiography, in managing complex and rare obstetric conditions like UAVM and placenta accreta. It underscores the importance of clinical vigilance, thorough evaluation, and the formulation of individualized treatment plans that align with patients' fertility preservation goals. The insights gleaned from this case may contribute significantly to the understanding and management of complex obstetric conditions.

#### ANALYSIS OF MANAGEMENT OF RAISED PULSATILITY INDEX (PI) IN PREGNANCY

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**Problem statement:** Following raised pulsatility index (PI) 95th centile, pregnant women must undergo serial investigations and monitoring to reduce the rate of stillbirth and perinatal morbidity. While detecting raised PI in pregnancy plays an important role in identifying perinatal outcome in fetus with intrauterine growth restriction, this implementation has increased the burden of ultrasound resources and the patients' enormous efforts to visit the healthcare service for review. **Methods:** This is a retrospective analysis of 21 patients with raised PI in pregnancy at St Mary's Hospital from 1st August 2020 to 9th July 2021. This study has included pregnant women with raised PI (95th centile) at any gestation who have no or multiple risk factors of fetal growth restriction (FGR) with presence of end-diastolic flow in the umbilical artery of the fetus. **Results:** 94.1% patients with first raised PI had repeat Doppler scan within one week unless delivery is appropriate. Of these patients, over half of the patients (64.7%) had normal PI on repeat Doppler scan. Furthermore, 85.0% patients with raised PI had their growth scans within 2 weeks unless delivery is indicated.

While raised PI is associated with FGR, our study illustrates 73.3% patients with raised PI delivered normal birthweight infants. None of the patients with infants with static growth 20g/day from 34 weeks delivered small-for-gestational-age (SGA) neonates. Despite this, it picked up 4 SGA neonates in this audit. It is not surprising to observe half of the patients who delivered SGA infants had normal PI finding on repeat Doppler scan because most PI readings are normal in the context of late-onset FGR. **Conclusions:** 1) Frequency of repeat PI could be reduced in patients with raised PI and a review on different reference charts for umbilical artery PI to classify abnormal PI could be considered to allow more recommendations for the management of raised PI. 2) This audit highlights the need for further audits on the role of different Doppler scans in late-onset FGR. 3) Implementing a tool for calculating interval growth and estimated fetal weight (EFW) could be considered to improve adherence to local guidelines.

#### OTHER

#### SACRAL MAGNETIC STIMULATION USING INTERMITTENT THETA BURST STIMULATION IN ANESTHETIZED RATS: A NOVEL THERAPEUTIC APPROACH TO TREAT OVERACTIVE BLADDER

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**Problem statement:** Overactive bladder (OAB) is notably widespread among women, and its prevalence tends to increase with advancing age. The existing treatment options to address OAB continue to pose challenges for refractory cases and might entail invasive procedures. This study sought to assess the potential effect of magnetic stimulation of the sacral roots using intermittent theta burst stimulation (iTBS) as a non-invasive treatment option for OAB. **Methods:** Forty-one urethane-anesthetized female rats were utilized. Repetitive peripheral magnetic stimulation (rPMS) using iTBS in the sacral nerve was done in normal healthy rats and OAB model rats. The OAB model was established using transvesical infusion of 0.5% acetic acid (AA). Urodynamics data, including first voiding time (Tv) and inter-continence interval time (ICI) were collected through

cystometography with continuous bladder infusion during acute and after sacral rPMS. **Results:** The OAB model was established by infusing continuous saline subsequent to 0.5% AA treatment, resulting in a substantial reduction of Tv and ICI to 42% and 56% of the corresponding control values, respectively. In normal healthy rats, acute rPMS iTBS at 100% intensity resulted in a significant increase of the ICI to 121%. While pre-treatment of rPMS using iTBS at 100% intensity resulted in a significant elongation of the Tv in normal healthy rats to 132%. In OAB model rats, acute rPMS using iTBS at 100% intensity on the sacral nerve effectively inhibited AA-induced detrusor overactivity and significantly increased ICI to 167-222%. **Conclusion:** Sacral nerve rPMS with iTBS demonstrated the ability to suppress AA-induced detrusor overactivity. This encouraging technique holds the potential to serve as an alternative approach to enhance bladder continence in patients with overactive bladder syndrome.

#### PREDICTORS OF SURGICAL SITE INFECTION AMONG WOMEN FOLLOWING CESAREAN DELIVERY: A HOSPITAL-BASED CASE-CONTROL STUDY

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**Problem statement:** Cesarean section is the single most important risk factor for postpartum infection. Surgical site infection (SSI) is one of the commonest complications following cesarean section (CS) with a reported incidence of 3-20%. SSI causes massive burdens on both the mother and the health care system. Moreover, it is associated with high maternal morbidity and mortality rate of up to 3%. This study aims to determine the incidence and predictors of SSI following CS. **Methods:** We conducted a hospital-based case-control study at a secondary-level hospital, during the period from January 2022 to December 2022. A total of 435 cesarean sections were performed during the studied period, of these, 11 cases developed SSI following CS. Controls were selected at a ratio of 3:1 (n = 35). Cases and controls were compared with respect to maternal and pregnancy characteristics using uni- and multivariable logistic regression models. Main outcome measures were anticipated risk factors for surgical site infection. **Results:** The occurrence of surgical site infection was 1,85% and 2,75% after elective and emergency cesarean section, respectively. Compared to women without surgical site infection, women with surgical site infection were almost thrice more obese before pregnancy (OR 3,2, 95% CI 0,6-15,0). Parity, tobacco use, preexisting diabetes mellitus (DM), gestational DM, preeclampsia, hypertension, rupture of the membrane before operation, surgery duration, type of CS (elective or emergent), blood loss of 1000 ml and hemoglobin less than 11 g/dl were not significantly associated with SSI. **Conclusion:** Pregestational obesity was independent risk factor for surgical site infection. This finding may inform pre-operative counseling and shared decision making regarding planned elective caesarean section for women with pre-pregnancy BMI  $\geq$  30kg/m<sup>2</sup>.

#### KNOWLEDGE, ATTITUDE AND PRACTICES OF REPRODUCTIVE AGED FILIPINO WOMEN ON FAMILY PLANNING AND SEXUAL HEALTH DURING THE COVID-19 PANDEMIC

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**Problem Statement:** The novel coronavirus (SARS CoV-2) that causes COVID-19 spread rapidly since emerging in late 2019 and was declared a pandemic by the World Health Organization (WHO) in 2020. This cross-sectional study aims at determining the knowledge, attitude and practices towards family planning and sexual health of the Filipino woman to equip policymakers and family planning and sexual and reproductive health advocates to address the issues associated with COVID-19 as it is a constantly evolving public health crisis. **Methods:** An online questionnaire was conducted among reproductive aged women from 18-49 y/o consulting with the obstetric service via telehealth consultation at a tertiary hospital. The characteristics of the respondents were assessed using a cross-sectional questionnaire survey and descriptive statistics. **Results:** The prevalence of family planning use among 18 to 49 years aged women was 45.7% during the lockdown. Results show that the most popular methods of family planning among the respondents are: withdrawal (53.8%), followed by oral contraceptive pills (34.8%), implants (17.9%), condoms (16.8%), injectables (16.3%). Economic burden and uncertainty due to the COVID-19 lockdown has also affected the respondents' fertility preferences in that 75% of



respondents decided to change the timing of planning their pregnancy, 83% now desire for fewer number of children. **Conclusion:** This study showed the current knowledge, attitude and practices of reproductive aged Filipino women on family planning and how the pandemic has affected their ability to afford and gain access to the vital sexual and reproductive healthcare and contraceptive services. The study also showed that there was a shift in the fertility preferences of the participants due to the lockdown restrictions.



### ISOLATED FALLOPIAN TUBE TORSION IN AN EARLY ADOLESCENT: A CASE REPORT

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Isolated fallopian tube torsion is an infrequent but significant gynecological cause of pelvic pain in female patients, with literature approximating its overall incidence as 1 in 1.5 million women, and incidence of which in pediatric and adolescents is difficult to determine. Locally, there has never been a published paper regarding the condition in young adolescents, emphasizing its rarity. A 12-year-old female presented with right lower quadrant (RLQ) pain. She was initially treated for urinary tract infection and a whole abdominal ultrasound done prior to referral to the institution showed a cystic structure in the mid-pelvic region and an inflamed appendix. The abdomen was soft with direct and rebound tenderness at the RLQ and hypogastric area. On rectal examination, pelvic organs cannot be fully evaluated due to voluntary guarding. Abdominal CT scan revealed a 10x8.4x7.4cm thick-walled cystic pelvic mass, probably ovarian, and a normal appendix measuring 0.6cm. Assessment was adnexal pathology, probably ovarian. Pelvic laparotomy was performed and upon exploration, there was a hemorrhagic pelvoabdominal mass which measured 13x11x8cm, found to be a cystically enlarged right fallopian tube, twisted once on its vascular pedicle. Upon untwisting, the fimbriated end was noted to be necrotic. The left tube, left ovary and the uterus looked normal. Right salpingectomy was performed. The entity is difficult to recognize pre-operatively because of its vague clinical presentation. Abdominal tenderness may present with or without peritoneal signs. There may be adnexal tenderness, but a mass is not always palpable. There is no specific laboratory finding and radiologic diagnosis is also limited. Isolated tubal torsion should be considered in cases of acute lower abdominal pain since awareness and early detection of the condition, especially in children and adolescents, allows early surgical intervention that may prevent removal of the tubes and render preservation of fertility.

### ORGANISATION OF FOLLOW-UP AND REFERRAL OF PREGNANCY WOMEN IN PRIMARY CARE: PERCEPTION OF GYNAECOLOGISTS AND MIDWIVES

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**Problem statement:** In Belgium the law allows for midwife-led follow-up in case of low-risk pregnancies, but there is no guideline for midwives on when to refer to a specialist in obstetrics and gynecology. We were commissioned to develop a Belgian tool to guide primary care practitioners in specialist's referral (risk selection). As a preliminary investigation, we surveyed gynecologists and midwives' views on the current organization of care and their willingness to adopt such tool in their practice. **Methodology:** We created an online survey to investigate the role of midwives in antenatal care, their satisfaction with professional collaboration, the extent of their professional networks, their risk assessment and follow-up practices in low-risk pregnancies and, their willingness to use a Belgian risk selection tool. We distributed the survey through professional associations. We analyzed the results using absolute numbers and percentages, stratified by type of health professional (midwife-gynecologist).

**Results:** Of the 854 respondents, 35.9% were midwives and 64.1% were gynecologists. Among respondents 87.26% of gynaecologists judged interprofessional collaboration with midwives to be satisfactory, versus 67.5% of midwives. Among gynecologists 72.2% considered their professional network to be complete versus 37.5% of midwives. Risk selection in pregnancy was mainly based on the professional's experience (81.63% of gynecologists and 77.29% of midwives), but 37.1% of gynecologists and 54.8% of midwives rely (also) on risk selection tools coming from abroad or developed in-house. Midwife-led follow-up was recommended by 12.67% of gynecologists and 49.61% of midwives. Among midwives 91.39% were in favor of introducing a Belgian tool versus 36.56% of gynecologists, but 99.56% of midwives and 65.85% of gynecologists would use it if it was implemented. **Conclusions:** Among our respondents, midwives had a poorer interprofessional network than gynecologists and, were more likely to suggest midwife-led follow-up, half of them already used existing risk selection tools. Midwives were in favour of the development of a Belgian tool. In contrast, only a minority of gynecologists were in favor of developing a tool, but the majority would use it if it was available.

### KNOWLEDGE AND ATTITUDES OF HEALTH DISCIPLINE STUDENTS TOWARD FAMILY PLANNING

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**Problem statement:** Knowledge and attitudes of health discipline students to provide family planning (FP) service are of importance in terms of raising awareness about increasing quality health services and developing new strategies in education curricula. This study aims to determine the knowledge and attitudes of health discipline students toward family planning. **Methods:** Descriptive and cross-sectional this study was conducted with 3096 students who were enrolled in the nursing department, midwifery department, and medical faculty. Data were collected through the Student Information Form, FP Knowledge Form, and Family Planning Attitudes Scale (FPAS). **Results:** FP attitudes of nursing, midwifery and medical students were found to be similar (p<0.05). Midwifery students' FPAS attitudes toward family planning methods scores were found to be significantly higher (p<0.05). Health discipline students' FPAS scores were found to be significantly higher in students who were aged ≥22, were females, graduated from high school, were enrolled in ≥4th year, considered their income level equal to expenses or more than expenses, lived in the Mediterranean region, had nuclear family, and used a family planning method in their sexual life (p<0.05). The majority of the nursing, midwifery, and medical students were found to obtain information about FP from the school curriculum (66.5%, 72.1%, and 80.0%, respectively). Only two in every 5 students were found to know 11-15 modern family methods and emergency contraception as an FP method. **Conclusion:** This study found that all participating students had low levels of FP knowledge. Students' attitudes toward FP were positive but needed to be improved. Besides, attitudes of midwifery students toward FP methods were found higher. Results of this study, it could be beneficial to investigate variables affecting health discipline students' attitudes toward FP according to the departments they were enrolled in and to determine strategies that can be applied to the development of students' FP attitudes.

### COEXISTING PATHOLOGY OF UNRUPTURED ECTOPIC PREGNANCY WITH CONCURRENT IPSILATERAL DERMOID CYST : A RARE OCCURRENCE

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A 29 year old Gravida 1 Para 0 who presented at the hospital with a 5-week history of amenorrhea, abdominal pain and vaginal bleeding. Transvaginal ultrasound revealed 3 pathologic findings : Tuboovarian complex on the right adnexa, a complex mass indicative of an unruptured ectopic pregnancy and right ovarian new growth probably endometrioma. Pelvic laparotomy was done and histopathologic finding revealed tubal pregnancy, right and mature cystic teratoma of the right ovary. This case report demonstrates the importance of considering the coexistence of different gynecologic pathologies in the same patient and clinical importance of an accurate diagnostic evaluation.

### UNINTENDED AND ECTOPIC PREGNANCY IN WOMAN WITH IUD TRANSLOCATION WITH HISTORY OF TWO TIMES PREVIOUS



## CAESAREAN SECTION AND HISTORY OF SPONTANEOUS ABORTION: CASE REPORT

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**Problem statement:** Intrauterine device (IUD) is a widely used contraceptive method. However, it may translocate to other sites within the pelvic cavity, including the intestines and the bladder. It is also associated with contraceptive failure rates between 1-3 out of 100 women/year. It also slightly increases the risk of ectopic pregnancy upon its failure. The combination of IUD translocation and contraceptive failure is rare. We present such a case. **Method:** Case report. **Results:** A 29 years old woman gravida 4 para 2, presented with a chief complaint of abdominal pain and blood spotting for the past 7 hours. Her pregnancy test was positive. At presentation, her vital signs were still stable and she was also grade II obese with BMI 38.8 kg/m<sup>2</sup>. There was notable tenderness on abdominal examination and cervical motion tenderness too. Her blood counts were unremarkable. Transvaginal ultrasound confirmed the presence of a hypoechoic complex structure at the left adnexa, measuring 53 mm along with free fluid in the Morrison's pouch. Emergency laparotomy was instituted. Found normal uterus with ruptured left fallopian tube with about 800 cc blood intraabdominal. **Conclusion:** Despite its high efficacy, intrauterine devices may cause contraceptive failures. They also translocate to other organs. A combination of both increases the risks for an ectopic pregnancy.

**Keywords:** History of caesarean section and abortion; IUD translocation; unintended pregnancy; Ectopic pregnancy

## CLINICAL CHARACTERISTICS AND OUTCOMES OF ELECTIVE GYNECOLOGIC CASES USING MODIFIED MEDICALLY NECESSARY, TIME SENSITIVE (MeNTS) SCORING SYSTEM IN PHILIPPINE GENERAL HOSPITAL DURING THE COVID-19 PANDEMIC

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**Problem statement:** The use of a scoring system that integrates various factors including COVID-19 transmission risks helps in decision-making and triage for Medically Necessary, Time Sensitive (MeNTS) surgical procedures. This study aimed to determine the clinical characteristics and outcomes of cases who were screened and underwent elective gynecologic surgery at a tertiary hospital using a modified MeNTS tool for prioritization. This study aims to answer the question, "Did the MeNTS scoring system achieve its objective to facilitate decision-making and triage gynecologic elective cases without compromising safety?" **Methods:** A cross sectional study was carried out using data collected through medical chart review of all gynecologic cases screened in a 6-month period, from 18 June 2020 to 18 December 2020. **Results:** A total of 155 gynecologic cases were screened, with 134 (86.4%) MeNTS cases and 21 (13.5%) non-MeNTS cases. The median length of stay (5 days), the median operating room time (3 hours and 30 minutes), and median estimated blood loss (400ml) were within the acceptable expected outcome as with the scoring system, albeit with some cases (53%) requiring blood transfusion attributed to low baseline hemoglobin levels. There were no cases with post-operative COVID-19 transmission, needing ICU care and intubation, nor mortalities reported. **Conclusions:** The MeNTS scoring system allowed efficient handling of the backlog of elective gynecologic cases with minimal morbidity and absence of mortality. The study supports the utility of this scoring system in addressing the need of the healthcare system not just to optimally utilize and fairly allocate hospital resources but also to ensure the safety of the patient with the best health service delivery during the pandemic.

### Declarations:

**Competing interests:** The authors report no conflict of interests.

**Funding:** This study has been funded by the authors.

**Keywords:** MeNTS, Medically necessary time sensitive scoring system, gynecologic elective surgery, COVID-19

## REGENERATIVE THERAPY IN SEVERE ENDOMETRIOSIS. A CASE REPORT

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Endometriosis affects 10% of reproductive woman age, some studies show that 25% to 50% of infertile women has endometriosis, and 30 a 50% of this group are infertile. There are many treatments to control endometriosis, nowadays the use of mesenchymal stem cells can be used as a treatment, even if it's an intravenous or intraovarian use.

We report a 28-year-old woman, with a history of left salpingo-oophorectomy because of endometrioma and laparotomy because of endometriosis. We performed a transvaginal ultrasound, we found an endometrioma in the right ovary 4.5x4.8 cm, and the presence of 3 antral follicles. An antimüllerian hormone was reported 1.04 ng/ml. The patient was undergoing laparoscopic surgery for resection of the endometrioma capsule, right salpingectomy because of hydrosalpinx, and endometriotic implants, in addition, 7 million mesenchymal stem cells obtained from endometrial tissue were placed in the ovary cortex. Leuprolide acetate 3.75mg was used as a complementary treatment for 2 months. Three months later we performed a transvaginal ultrasound, 7 antral follicles, and a 3x3 cm endometrioma were found. Antimüllerian hormone reported 2.91 mg/ml. We performed a controlled ovarian stimulation, with follitropin alfa (corneumon), use of antagonist and trigger with human chorionic gonadotropin (Choriomon), after this we got 8 oocytes Metafase II, those were vitrified. **Discussion:** The mesenchymal stem cells were used in this patient because of the antimüllerian hormone result and the diagnosis of severe endometrioma, with the premise that mesenchymal stem cells would improve ovarian response and increase hormone levels. Mesenchymal stem cells have several interesting features including their ability to grow rapidly, secrete cytokinin that has a positive effect on proliferation, survival, and repair of damaged tissues, are able to differentiate into other cell types, and participated directly in ovarian follicle formation. There are some studies where the use of mesenchymal stem cells induced the expression of granulosa cells in the follicles, improved the ovarian and hormonal function, and increased the AMH level. **Conclusions:** The use of mesenchymal stem cells has been demonstrated to be a safe alternative in endometriosis patients, where there is a high inflammatory process in the pelvic cavity, can be functional.

## EFFICACY AND SAFETY OF THE GALACTAGOGUES, DOMPERIDONE AND METOCLOPRAMIDE, IN BREASTFEEDING: A SYSTEMATIC REVIEW AND META-ANALYSIS

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**Problem Statement:** Breastfeeding imparts indispensable sustenance to the newborn. The United Nations Children's Fund reported in 2018 that in lower middle-income countries like the Philippines, 1 in 25 babies are never breastfed. One of the major reasons why mothers are unable to do so is low milk supply. Literature on the use of galactagogues to improve lactation are debatable given the limited evidence-based sources. This study was conducted to evaluate the efficacy and safety of Domperidone and Metoclopramide in breastfeeding. **Method:** Academic Databases like PubMed, ProQuest, Cochrane and Google Scholar were utilized to identify eligible studies that investigated the effect of Domperidone and Metoclopramide on breastmilk production, as well as their safety among breastfeeding mothers. Literature search included studies from 1983 to 2022. Systematic review to synthesize qualitative data and meta-analysis to synthesize quantitative data were carried out on the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA). The meta-analysis was done using MetaXL with a significance level of 0.05. Risk Ratio (RR) for dichotomous variables while Weighted Mean Difference (WMD) for continuous variables were used, both at 95% confidence interval (CI). The Mantel-Haenszel method was utilized to determine the pooled results in a random effect model on the incidental side effects/cases data. Heterogeneity was analyzed from the Chi-square and I<sup>2</sup> statistics results from each of the pooled analysis. **Results:** Twelve studies were eligible for qualitative analysis and 9 for quantitative analysis. Data on Domperidone consistently demonstrated a statistically significant increase in breast milk production, with overall pooled outcome showing an increase of 135.87 mL/day (36.81-234.92, 95% CI). Data on Metoclopramide, however, showed conflicting results. In terms of maternal side effects, analysis showed no significant difference among Domperidone, Metoclopramide and placebo. **Conclusion:** Domperidone is safe and effective in increasing breast milk volume and there is ample evidence to support its use among lactating mothers. Due to the small number of studies that establish the efficacy of Metoclopramide, and the wide variation in treatment duration among the studies, further investigations are warranted to make the data more conclusive.





**METABOLIC PHENOTYPING IDENTIFIES DISTINCT SYSTEMIC AND FOLLICULAR BILE ACID PROFILES THAT DEPEND ON BODY FAT CONTENT**Natascha Berger<sup>1</sup>, Giovanni Rodriguez-Blanco<sup>2</sup>, Marion Sophie Neumayer<sup>1</sup>, Markus Herrmann<sup>2</sup>, Ursula Hiden<sup>1</sup>, Herbert Fluhr<sup>1</sup><sup>1</sup>Department of Obstetrics and Gynecology, Medical University of Graz, Graz, Austria<sup>2</sup>Clinical Institute for Medical and Chemical Laboratory Diagnosis (CIMCL), Medical University of Graz, Graz, Austria

**Problem statement:** Cumulative evidence demonstrates that metabolism is a key regulator of reproductive health. Since the prevalence of obesity and associated metabolic disturbances is constantly increasing, a comprehensive approach to assess metabolic risk factors is highly relevant to improve infertility procedures. In this study we analyzed individual metabolic signatures and in particular target systemic and follicular bile acid (BA) profiles of in vitro fertilization (IVF)-patients. BAs, which have been recognised for decades for their fat digestive properties, have gained clinical significance as nuclear receptor ligands that exert multiple (patho)physiological effects. Importantly, the composition of BA as well as total BA levels have been shown to affect follicular maturation and steroidogenesis in different animal models. **Methods:** On the day of the follicle puncture for oocyte retrieval, fasting blood was sampled to analyze various blood parameters including blood lipids, glucose metabolism, liver enzyme activities and hormones. Serum and intrafollicular fluids were analyzed by LC-MS/MS. In addition, the individual body composition was analyzed using air displacement plethysmography (BOD POD®). **Results:** Our preliminary data revealed an altered composition and concentration of BAs in serum and follicular fluid of patients exhibiting 37- 48% body fat compared to normal distributed (21- 33%) subjects. Notably, this result was independent of BMI, which ranged between 22 and 25 kg/m<sup>2</sup> in the study group. Particularly, the proportion of chenodeoxycholic acid and deoxycholic acid was increased in patients with high body fat, which were previously shown to be related to oxidative stress, DNA damage and apoptosis, suggesting an adverse effect on follicle development and maturation. In addition, we observed a positive correlation between systemic deoxycholic acid and insulin as well as cholesterol levels of the patients. **Conclusion:** Our results indicate that excessive accumulation of body fat affects the intrafollicular environment by significant changes in BA profiles. Moreover, our study highlights the limited use of BMI as diagnostic criteria, as it does not differentiate between fat and lean mass. This study provides an in-depth analysis of IVF-patients and ultimately leads to the discovery of metabotype signatures, which could be used for patient stratifications and lifestyle interventions in the future.

**DIAGNOSTIC PROCEDURES****PREDICTION OF THE COURSE OF THE FIRST TRIMESTER OF PREGNANCY AT DIFFERENT LEVELS OF HLA CLASS I (G, E, C) IN THE BLOOD.**Margarita Shengelia<sup>1</sup>, Olesya Beshpalova<sup>1</sup>, Sergey Chepanov<sup>2</sup><sup>1</sup>Department of Obstetrics and Perinatology, The Research Institute of Obstetrics, Gynecology and Reproductology Named After D.o.ott, Saint-Petersburg, Russia<sup>2</sup>Department of Immunology Cells-interactions, The Research Institute of Obstetrics, Gynecology and Reproductology Named After D.o.ott, Saint-Petersburg, Russia

**Problem statement:** HLA class I (C,E,G,F) controls the interaction of all immunocompetent cells and determines the recognition of its own and foreign cells, triggering and realizing the immune response: during the process of implantation, during transplantation of foreign organs and tissues. Thus, one of the most important areas of research in the field of reproductive medicine is the search for biological markers for predicting the development of threatened miscarriage and termination of pregnancy in the first trimester. Purpose — to assess the levels of biological molecules sHLA-G, HLA-G, HLA-E, HLA-C in the blood and to study the characteristics of the course of the first trimester in pregnant women with reproductive disorders depending on differences in the levels of HLA-G, -E and -C in the blood. **Methods:** A prospective cohort study was conducted in 70 women in the first trimester of pregnancy (up to 13 weeks). All patients were determined the levels of HLA class I expression products (sHLA-G, HLA-G, HLA-E, HLA-C), PIBF and TBG in blood plasma and, depending on the reproductive history, they were divided into 2 groups: Group 1 - 38 pregnant women with a burdened reproductive history (one or more miscarriages, missed abortion, ART failures), group 2 - 32 pregnant women without reproductive losses. In all patients, the content of the HLA-C level in peripheral venous blood was determined, after which the women were monitored throughout pregnancy. **Results:** Different levels of sHLA-G, HLA-G, HLA-E, HLA-

C were identified in the blood plasma depending on the obstetric anamnesis and the clinical course of the current pregnancy. An HLA-C value of  $\geq 118\mu\text{g/mL}$  predicts threatened early miscarriage with an accuracy of 81,5% and a specificity of 89,3%. Associations were established between the level of HLA-G and spontaneous miscarriages ( $p=0.017$ ), HLA-E with chronic endometritis ( $p=0.020$ ), HLA-C with missed abortions (0.017). **Conclusion:** The level of HLA-C in blood makes it possible to predict the development of a threatened miscarriage in early gestational age, take preventive measures in a timely manner, has good reproducibility, simplicity and accessibility of performing and interpreting the results, suggests a single examination of a woman has high accuracy—81,5% and specificity—89,3%.

**ORAL PRESENTATIONS 13 - ART/IVF/INFERTILITY; DIAGNOSTIC PROCEDURES; GYNECOLOGY****ART/IVF/INFERTILITY****MATERNAL FERTILITY STATUS AND INFANT OUTCOMES: THE EREBOUNI MEDICAL CENTER STUDY OF ASSISTED REPRODUCTIVE TECHNOLOGY**Hasmik Sedrakyan<sup>2</sup>, Andranik Poghosyan<sup>1</sup>, Georgi Okoev<sup>3</sup>, Norayr Ghukasyan<sup>1</sup><sup>1</sup>Maternity House, Erebouni Medical Center, Yerevan, Armenia<sup>2</sup>Maternity House, Astghik Medical Center, Yerevan, Armenia<sup>3</sup>Administration, Research Center of Maternal and Child Health Protection, Yerevan, Armenia

**Background:** In the realm of in vitro fertilization (IVF), the preferred childbirth method remains a topic of interest. Vaginal delivery is often favored due to potential advantages in reducing complications for both mother and newborn. However, specific cases still require cesarean sections. **Objective:** This study, involving 346 IVF-conceived women, explores childbirth outcomes and associated risks based on delivery method. **Methods:** A study at one center examined 346 women aged 16 to 51, all becoming pregnant through IVF, encompassing both single and multiple pregnancies. These participants were categorized by maternal age and number of fetuses. A control group with a 1:2 ratio, matched for maternal age and parity, was formed. A thorough comparison of demographic data, medical history, pregnancy-related traits, and outcomes for both mothers and newborns was performed between the study and control groups. **Results:** Between 2018 and 2020, a group of 346 women aged 16–51 who conceived via IVF was identified. This group was compared to a control cohort of 120 women matched for age and parity. Maternal characteristics and pregnancy-related issues were similar between the groups. During this time, Erebouni Medical Center saw 19,281 pregnancies, resulting in 14,372 births (74.5%), including 1,713 preterm births (8.9%). Among these, 1.8% were IVF-conceived. Of all pregnant women at Erebouni MC, 12.4% were 36 or older, 31.3% were 30-35, and 56.3% were under 30. IVF-conceived pregnancies followed a similar distribution: 18% were 36 or older, 32% were 30-35, and 50% were under 30. Certain issues like pre-eclampsia and complex medical histories were more common in IVF pregnancies of women aged 36 or older. Using Robson's classification, most IVF-related pregnancies fell into groups 2b, 10, and 8, with cesarean delivery being prominent. Vaginal delivery was more frequent in IVF pregnancies in groups 3, 4a, and 1, particularly among women under 30. **Conclusion:** The assumption that cesarean section is the exclusive mode of delivery for IVF-conceived pregnancies warrants careful consideration, given the varied outcomes observed across different maternal age groups and Robson classifications. Further discussion and individualized assessment are necessary to determine the most suitable approach for each case.

**ASSOCIATION OF GENETIC MARKERS WITH INFERTILITY IN WOMEN UNDERGOING BARIATRIC SURGERY**Charalampos Voros<sup>1</sup>, Despoina Mavrogianni<sup>1</sup>, Kyriakos Mpananis<sup>5</sup>, Terezala Vrantza<sup>2</sup>, Konstantinos Albanopoulos<sup>3</sup>, Evangelos Menenakos<sup>4</sup>, Abraham Pouliakis<sup>2</sup>, Ioanna Soula<sup>1</sup>, Sophia Anysiadou<sup>1</sup>, Ekaterini Domali<sup>1</sup><sup>1</sup>1st Department of Obstetrics and Gynecology of Alexandra University Hospital, Medical School of Athens, Athens, Greece<sup>2</sup>3rd Department of Obstetrics and Gynecology of Attikon University Hospital, Medical School of Athens, Athens, Greece<sup>3</sup>General Surgery, Iaso General Epigonia Peristatika, Athens, Greece<sup>4</sup>General Surgery, Eugendeio Therapeutrio, Athens, Greece<sup>5</sup>General Surgery, Ealing Hospital, London, UK

**Problem statement:** Obesity is a global health problem affecting people across developed and developing countries, with approximately 650 million of all ages diagnosed worldwide. Studies



have shown that obesity has an impact on fertility. **Methods:** Research has shown that morbid obesity can effectively be treated by bariatric surgery and may also improve infertile women. The study included 32 patients and investigates the role of reproductive hormones, FSH (follicle-stimulating hormone), LH (luteinizing hormone), E2 (estradiol), free testosterone (FREE TESTO), AMH (anti-Müllerian hormone) and SHBG (sex hormone-binding globulin) with BMI before and after surgery. Additionally CART (cocaine and amphetamine-regulated peptide), an anorexic neuropeptide, and leptin were also studied in order to establish a possible relation between BMI reduction CART and leptin expression and hormone levels in infertile obese female patients under 40 years old. **Results:** The study has shown that the mean reduction in BMI after the surgery was 16.03 kg/m<sup>2</sup>, with statistically significant differences observed (p-value 0.0001). We found significant changes in hormone levels following the surgery, FSH showed a mean difference of 3.18±1.19 before and after surgery, with a p-value of 0.0001, LH exhibited a mean difference of 2.62±1.1 before and after surgery, with a p-value of 0.0001, E2 levels demonstrated a mean difference of 18.62±5.02 before and after surgery, with a p-value of <0.0001. Additionally, AMH levels showed a mean difference of 3.18±1.19 before and after surgery, with a p-value of <0.0001. High CART expression before treatment was associated with a statistical significant lower CART expression after treatment (rs=0.51, p=0.005). Similarly, a significant correlation was observed for leptin, where lower leptin expression before treatment was linked to higher leptin expression 6 months after treatment (rs=0.75, p<0.0001). **Conclusion:** The observed correlations may provide valuable insights into the factors influencing CART and leptin regulation in the context of obesity and bariatric surgery. These findings highlight the positive impact of bariatric surgery on BMI reduction and suggest a potential link between the surgical intervention, hormonal changes and gene expression.

There is no Disclosure of Interest in our study.

Table 1: Correlation between hormones and gene expression before and after bariatric surgery

Measure	Before		After		Difference (after - before)	Percentage	p-value
	Mean±SD	Mean±SD	Mean±SD	Mean±SD			
FSH (mIU/mL)	5.99±1.51	3.18±1.19	3.18±1.19	3.18±1.19	-2.81±1.32	100%	<0.0001
LH (mIU/mL)	6.33±0.97	3.74±1.94	3.74±1.94	3.74±1.94	-2.59±1.03	100%	<0.0001
E2 (pg/mL)	29.81±2.89	48.43±5.41	48.43±5.41	48.43±5.41	18.62±5.02	100%	<0.0001
SHBG (nmol/L)	36.24±7.58	34.19±12.41	34.19±12.41	34.19±12.41	-2.05±8.87	100%	<0.0001
Free Testo (ng/mL)	26.72±9.35	3.42±2.52	3.42±2.52	3.42±2.52	-23.30±8.15	100%	<0.0001
AMH (ng/mL)	2.14±0.34	2.96±0.15	2.96±0.15	2.96±0.15	0.82±0.19	100%	<0.0001
CART (pmole/l)	41.84±3.98	25.91±1.5	25.91±1.5	25.91±1.5	-15.93±4.26	100%	<0.0001
Leptin (ng/mL)	0.34±0.41	-0.42±1.14	-0.42±1.14	-0.42±1.14	-0.76±1.3	100%	<0.0001
Free Testo (ng/mL)	-1.81±1.82	-0.13±1.55	-0.13±1.55	-0.13±1.55	1.68±1.2	88.66% 10.3%	<0.0001
<b>BMI (before surgery) vs BMI (after surgery)</b>							
	r <sub>s</sub>	p	r <sub>s</sub>	p			
Age	0.08252	0.61763	0.08252	0.61763			
FSH (mIU/mL)	-0.18239	0.0011					
LH (mIU/mL)	-0.41380	0.0286					
E2 (pg/mL)	-0.37886	0.0468					
SHBG (nmol/L)	0.20873	0.2864					
Free Testo (ng/mL)	0.09144	0.6433					
AMH (ng/mL)	0.05572	0.7397					
FSH (mIU/mL) post surgery			-0.30200	0.1169			
LH (mIU/mL) post surgery			-0.26011	0.1711			
E2 (pg/mL) post surgery			-0.42225	0.0251			
SHBG (nmol/L) post surgery			-0.03060	0.9641			
Free Testo (ng/mL) post surgery			-0.08671	0.6808			
AMH (ng/mL) post surgery			-0.09766	0.621			
<b>CART (before surgery) vs Leptin (before surgery)</b>							
	r <sub>s</sub>	p	r <sub>s</sub>	p			
FSH (mIU/mL)	-0.57738	0.0013	0.18121	0.4125			
LH (mIU/mL)	-0.45065	0.0181	-0.12031	0.542			
E2 (pg/mL)	-0.68064	<0.001	-0.08163	0.6796			
SHBG (nmol/L)	-0.04817	0.8077	0.08527	0.6662			
Free Testo (ng/mL)	-0.09225	0.6406	-0.02396	0.9037			
AMH (ng/mL)	0.10823	0.5835	-0.07842	0.6916			
<b>CART (after surgery) vs Leptin (after surgery)</b>							
	r <sub>s</sub>	p	r <sub>s</sub>	p			
FSH (mIU/mL)	-0.61902	0.0004	-0.75695	<0.0001			
LH (mIU/mL)	-0.60008	0.0007	-0.53481	0.0034			
E2 (pg/mL)	-0.65608	0.0002	-0.6517	0.0002			
SHBG (nmol/L)	0.1812	0.3561	0.12837	0.615			
Free Testo (ng/mL)	-0.27859	0.1511	0.0329	0.868			
AMH (ng/mL)	0.05376	0.7859	0.10108	0.6086			
<b>CART (before) vs Leptin (before) vs CART (after) vs Leptin (after)</b>							
	CART (before)	CART (after)	Leptin (before)	Leptin (after)			
CART (before)	0.51505	0.005	0.17134	0.22496			
CART (after)	0.51505	0.005	0.3833	0.2468			
Leptin (before)	0.17134	0.60326	0.0007	<0.0001			
Leptin (after)	0.22496	0.66886	0.75243	<0.0001			

## FROZEN EMBRYO TRANSFER AND ANTICOAGULANT IMPROVE IN VITRO FERTILISATION OUTCOMES IN ENDOMETRIOSIS WITH RECURRENT PREGNANCY LOSS – ORIGINAL RESEARCH

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**Problem Statement:** Recurrent pregnancy loss (RPL) is closely linked with infertility. Endometriosis induces a low-grade chronic inflammatory environment and adversely affects endometrial receptivity, embryo implantation and subsequent growth and development. Anticoagulants, such as low molecular weight heparin (LMWH) and salicylic acid is suggested to alleviate the inflammation and improve in vitro fertilisation (IVF) success rates among patients with endometriosis suffering from RPL. However, results have been inconclusive. We investigated if anticoagulants were beneficial for Indonesian IVF patients with endometriosis. **Methods:** We performed an audit at two tertiary fertility centres in West Java, Indonesia. Total sampling was employed from 01/01/2017 to 31/10/2022. We included patients with endometriosis and RPL as defined by ESHRE receiving anticoagulants during their IVF cycles. Anticoagulants were LMWH, salicylic acid or both and their choice depended on the consultant's assessment. Excluded were those with incomplete data, those undergoing frozen embryo transfer outside the study period, and those halting their programs for various reasons. Biochemical pregnancy rate was the primary outcome with positive pregnancy incorporated t-test and Mann-Whitney U test for scale variables and Chi-square for nominal and ordinal variables. **Results:** 86 patients were included, 22 of which receiving anticoagulant(s) and 64 did not. Age was not significantly different among the two groups (32 vs. 33, p: 0.377) and among those who got pregnant or not (33 vs. 32, p: 0.287). The use of anticoagulant was not associated with a higher likelihood of becoming pregnant (OR 1.706, 95% CI 0.635 - 4.584). In subgroup analysis, with fresh embryo transfer, the use of anticoagulant was also not associated with a significantly higher likelihood of getting pregnant (35.3% vs. 62.1% OR 0.333, 95% CI 0.096 - 1.159; p 0.126). However, with frozen embryo transfer, the use of anticoagulant was associated with a significantly higher likelihood of getting pregnant (80% vs. 9.4%, OR 38.667 95% CI 3.196 - 467.745, p 0.001). **Conclusion:** Frozen embryo transfer significantly improves biochemical pregnancy rate amongst endometriosis patients with recurrent pregnancy loss treated with anticoagulants.

## DOES PROLONGED CRYOPRESERVATION AFFECT LIVE BIRTH RATES IN ELECTIVE FREEZE ALL CYCLES?

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**Problem Statement:** Does prolonged cryopreservation affect live birth rates in elective freeze all cycles? **Methods:** A retrospective study of 655 consecutive women who underwent their first frozen embryo transfer cycle after vitrification of Day 5/ Day 6 Blastocysts in a private fertility center from January 2019 to December 2021 were included in this study. Duration of cryopreservation was categorized into five groups: G1 – 1 month (320 women), G2- 2-3 months (231 women), G3 – 4-6 months (75 women), G4- 7-12 months (21 women), G5- 12 months (9 women). Primary outcome measure was to compare Live birth rates (LBR) between the five groups. Secondary outcome measure was to compare the clinical pregnancy rate (CPR), blastocyst utilization rate and blastocyst survival rate between the five groups. Results were considered statistically significant when P<0.05 by comparison of proportions. **Results:** LBR decreased with prolonged cryopreservation [G1- 64.86%, G2- 61.90% (P=0.0892), G3-50.66% (P =0.0029), G4 – 42.85% (P= 0.014) and G5 – 22.22% (P =0.0032). No difference in clinical pregnancy rates were seen between Group 1, 2, 3 and 4 and significant reduction was seen when in Group 5 (P= 0.004). Embryo utilization rate decreased with prolonged duration of cryopreservation (G1- 97.49%, G2- 94.15%, G3-85.81%, G4-74.28% and G5- 52.38%) which was all statistically significant (P 0.0001). Similarly, blastocyst thaw survival rate also decreased with prolonged cryopreservation (G1- 100%, G2-99.35%, G3- 96.45%, G4-94.28% and G5-71.42%) and was found to be statistically significant (p 0.001). Limitations of this study are; this was a retrospective, single center study. The sample size in Group 5 was very low, (9 women) when compared to other groups. **Conclusion:** Women who opt for elective freeze all cycles, can be counseled to undergo an early FET (before 6 months of cryopreservation) as ART





outcomes, embryo survival and utilization rates significantly decrease with prolonged cryopreservation.

### PTIP IS REQUIRED FOR MALE MEIOSIS

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**Problem statement:** Our understanding of male meiosis and male infertility at the molecular level is incomplete. **Methods:** a transgenic mouse model with conditional knockout of Pax transactivation domain-interacting protein (PTIP) in postnatal male germ cells has been generated and utilized for reproduction phenotyping and molecular and cellular analyses. **Results:** our data demonstrate that PTIP deficiency in male germ cells leads to spermatogenesis arrest in meiosis prophase I, defective DNA damage repair, azoospermia, and sterility. **Conclusion:** PTIP plays an essential role in male meiosis. This finding may hold clinical relevance in human reproduction.

### CHRONIC ENDOMETRITIS IN PATIENTS WITH RECURRENT IMPLANTATION FAILURE: DIAGNOSIS AND REPRODUCTIVE OUTCOMES FROM A PROSPECTIVE COHORT.

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**Problem statement:** Chronic endometritis (CE) has been related with recurrent implantation failure (RIF) and is considered one of the possible causes of failing to conceive. The main problem of CE management is that there are different tests available for the diagnosis and there is no consensus on the diagnostic criteria. **Methods:** Prospective, longitudinal, cohort study that includes all patients with RIF between May 2019 and August 2021. RIF was defined as the failure to conceive after three single embryo transfereces of good quality blastocysts in women under 40 or two euploid blastocysts in women over 40. All patients underwent hysteroscopy, histopathological endometrial study with CD138, endometrial and vaginal cultures. Women with an antiphospholipid syndrome and other haematological or immunological issues were excluded if they had not received the treatment in the previous transfereces. **Results:** 103 women were included. 33% (34) showed CE signs in hysteroscopy, 30.1%(31) had plasma cells in the histopathological study and 33.6%(32) resulted in positive endometrial culture. 56% (58) revealed a positive outcome in at least one test. The degree of agreement was moderate between hysteroscopy and histology( $\kappa=0,48$ ), and low between culture and histology( $\kappa=0,257$ ) and culture and hysteroscopy( $\kappa=0,294$ ). The global rate of agreement between the three tests was 57.28%. All women with at least one positive exam received antibiotic therapy. Patients with positive culture were treated according to the antibiogram, and those with negative cultures received Doxycyclin 100mg/12h. Treatment was repeated until every patient presented normal hysteroscopy, histology and endometrial culture. Before CE treatment, implantation rate (IR) was 16.8%, clinical pregnancy rate (CPR) was 3.9% and live birth rate (LBR) was zero. After CE treatment, 49patients underwent embryo transfer, with 72.5% IR, 68.8% CPR and 60% LBR. This increase in IR, CPR and LBR is statistically significant ( $p<0.05$ ). In an effort to dismiss intercurrent factors, no differences in PGTA, egg donation and endometrial thickness were found between transfereces previous to the CE treatment and subsequent. **Conclusion:** According to our results, it may be convenient to assess chronic endometritis by hysteroscopy, histopathology and endometrial culture, as these tests do not achieve a good agreement. Antibiotic treatment of chronic endometritis improves reproductive outcomes in patients with recurrent implantation failure.

### IMPACT OF OOCYTE AGE ON EMBRYO DEVELOPMENT AND QUALITY: INSIGHTS FOR FERTILITY TREATMENTS

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**Problem Statement:** The influence of oocyte aging on embryo development is a paramount consideration in the realm of reproductive technologies. However, comprehending its implications on embryo quality and blastocyst formation timeline remains pivotal. This study aims to shed light on these aspects, offering practical insights for laboratory practices and clinical approaches. Our primary goal was to assess the effect of oocyte age on embryo development, focusing on blastocyst formation frequency and quality assessment. **Methods:** Conducting a prospective cohort study, we examined a total of 85 embryos that underwent in vitro culture. These embryos were derived from three distinct age groups: women aged up to 35 years (41 embryos), 36 to 39 years (27 embryos), and over 40 years (17 embryos), encompassing a total of 24 cycles. Employing the SPSS software (V26), we scrutinized the blastocyst formation rate on the fifth day and evaluated embryo quality using the Gardner 2000 classification system. Statistical significance was determined using the Chi-square test, with a significance threshold set at  $p < 0.05$ . **Results:** The outcomes highlighted significant variations in both blastocyst formation and Gardner blastocyst classification across the age groups. Embryos from women aged  $\leq 35$  exhibited a decreased proportion of day five blastocyst formation ( $5.3 \pm 0.48$ ) compared to those from the 36-39 years group ( $5.5 \pm 0.50$ ) and the  $\geq 40$  years group ( $5.7 \pm 0.46$ ). Conversely, embryos from the 36-39 years and  $\geq 40$  years groups demonstrated lower embryo quality when compared to the  $\leq 35$  years group ( $40.9\% \pm 49.5$ ,  $43.8\% \pm 50.1$ , and  $54.3\% \pm 50.1$ , respectively). No statistically significant differences were observed in other parameters. **Conclusion:** In conclusion, this study underscores the substantial impact of women's oocyte age on embryo quality, influencing both the tempo of embryo development and the quality of resulting blastocysts. These findings offer indispensable insights into assessing a patient's fertility potential, aiding clinicians in making informed decisions regarding fertility treatments.

### HUMAN ERROR MEASUREMENT AND HUMAN ERROR REDUCTION WITH ELECTRONIC WITNESSING SYSTEM (EWS)

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**Problem Statement:** Human error in routine IVF can be measured with EWS. With our RFID chip EWS, human error can be reduced to very low levels. **Methods:** 15000 IVF cycles covering the years 2016-2023 were recorded with IVFID Electronic Witnessing system. Error warning received from 36 different IVF clinics were calculated and error distribution at each IVF stage was determined. Ordinary IVF patients within patient groups were registered as well as egg donation and surrogacy, and IVF stages affected by human error were determined by calculating records of possible errors for each patient group. The system recorded the data received via electronic chip through software and calculated it statistically. Human errors from each procedure in the embryology and andrology laboratories were recorded. **Results:** In our study human error data from 15,000 IVF cycles from 36 different clinics was evaluated and statistically calculated. Human error warnings were received 169 times out of 15,000 IVF cycles at different IVF process stages. Accordingly, error warnings were received 14 times during the oocyte pick up phase, 17 times during the denudation, 26 times during the ICSI, 8 times during the dish change, 68 times during the embryo transfer phase (17 of them were received during the fresh embryo transfer and 51 - during the frozen embryo transfer) and 36 times during the sperm preparation phase. Evaluation of error distribution among different clinics showed that error warnings were received from 23 out of 36 clinics at different IVF stages. Human errors were prevented by RFID electronic chip system and embryologists were warned audibly and visually on screens during the procedure. During the vitrification/thawing phase IVFID Witnessing system with the straw chip ensuring informed about 292 errors. Looking at individual embryologist performances, it is seen that error warnings were received from 32 different embryologists. **Conclusion:** Regular use of EWSs in IVF laboratories is very important to avoid human error-based interferences in biological materials, and they should be used





regularly in IVF laboratories. In addition, EWSs can be actively used in genetic laboratories performing PGT and biochemical laboratories.

### SUPPLEMENTATION WITH A 3.6:1 MYO-INOSITOL TO D-CHIRO-INOSITOL RATIO FOR PATIENTS WITH PCOS TO IMPROVE OOCYTE QUALITY DURING OVARIAN STIMULATION

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**Problem statement:** Polycystic Ovarian Syndrome (PCOS) is a hormonal disorder, in which 80% of patients have insulin resistance and compensatory hyperinsulinemia: causing hyperandrogenism and anovulation. Due to this condition oocyte quality decreases, and therefore PCOS patients are treated with insulin-sensitizing agents. A 3.6:1 Myo-Inositol: D-chiro-Inositol (MYO:DCI) ratio has been shown to improve insulin sensitivity, oocyte quality and pregnancy rates in women with PCOS. The objective of this study was to evaluate if patients with PCOS benefit from a 3.6:1 MYO:DCI ratio treatment before ovarian stimulation. **Methods:** This was a retrospective study from 2018 to 2021 which included patients diagnosed with PCOS according to the Rotterdam criteria, who were stimulated with antagonist protocol and had a minimum of 15 oocytes retrieved via oocytes pick-up (OPU). All patients went to OPU when at least one follicle reached 18 mm. All oocytes retrieved were fertilized by ICSI. Two groups of patients were made depending on the use of 3.6:1 MYO:DCI 1 month before ovarian stimulation or not. We compared the number of oocytes retrieved, MI rates/patients, fertilization rates, pregnancy rates, and number of cycles with at least one good quality embryo, using the t-Student between groups. **Results:** A total of 92 cycles were included (Group 1: 46 cycles, 2020-2021) and (Group 2: 46 cycles, 2018-2021). No significant differences were obtained in number of oocytes retrieved between groups (21.5 Group 1 vs 20.7 Group 2;  $p=0.56$ ), or metaphase II oocyte rates/patients (72.06% Group 1 vs 71.23% Group 2;  $p=0.68$ ). However, statistically significant differences were found when we compared the fertilization rates between groups (76.9% Group 1 vs 70.44% Group 2;  $p=0.007$ ); and the number of cycles without at least one good quality blastocyst to transfer between groups (4.35% Group 1 vs 17.39% Group 2;  $p=0.04$ ). The clinical pregnancy was significantly higher in supplemented group compared to control group (54.39% Group 1 vs 42.65% Group 2;  $p=0.0203$ ). **Conclusions:** A 3.6:1 MYO:DCI ratio-based food supplement 1 month before ovarian stimulation could improve the oocyte quality and resulted in a significant increase in pregnancy rate.

### HYPERSPERM, A NOVEL SPERM PREPARATION METHOD FOR HUMAN IN VITRO FERTILIZATION (IVF), IMPROVES EMBRYO DEVELOPMENT IN A PROSPECTIVE SIBLING OOCYTE PILOT STUDY

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**Problem statement:** Sperm capacitation is critical for fertilization and embryo development. Current sperm preparation techniques for IVF do not provide full capacitation, impacting cycle efficiency. We tested whether HyperSperm, a novel sperm preparation method that maximizes capacitation by recapitulating in vivo conditions in the fallopian tubes, is associated with better reproductive outcomes in IVF. **Methods:** Single-center, split oocyte study in 10 couples undergoing IVF with donated oocytes and partner semen. Inclusion criteria: women aged 20-45 years; men aged 20-50, sperm count  $\geq 5 \times 10^6$  after swim-up, sperm motility  $\geq 40\%$ ; morphology  $\geq 6\%$  and DNA fragmentation (TUNEL)  $20\%$ . Sperm samples were divided into two halves and either processed by swim-up (Control) or treated with HyperSperm. Fourteen cumulus-oocyte complexes were assigned to each patient, 7 in each arm, and inseminated with the corresponding sperm preparation. Embryos were cultured in an Esco Miri time-lapse incubator to blastocyst stage. The primary outcome was blastocyst rate. Secondary outcomes were fertilization rate, embryo quality according to Gardner's score, and developmental morphokinetic (t2, t3, t4, cc2, s2, t5, t8, cc3, tM, tB). Differences between groups were analyzed by Fisher's exact test for fertilization and blastocyst rates, and by log-rank test (Mantel-Cox) for developmental times. A  $p < 0.05$  was considered significant. **Results:** The blastocyst rate was

significantly higher in the HyperSperm group (36/53, 67.9% vs. 21/47, 44.7%;  $p=0.0159$ ). HyperSperm increased blastocyst numbers in 8/10 cases, with an average 1.5 more blastocysts available for each patient. Moreover, 55.5% of the blastocysts obtained with HyperSperm were top quality (AA, grade 3 or above), and 41.7% good quality (AB/BA/BB grade 3 or above). Fertilization rate and morphokinetic development of HyperSperm blastocysts were not different from Control for all parameters ( $p < 0.05$ ). One healthy baby boy was born from the HyperSperm treatment, and two more pregnancies are in their third trimester, progressing normally. **Conclusion:** Sperm capacitated with HyperSperm give rise to more, better quality blastocyst in IVF. Optimization of sperm preparation for fertilization could lower access barriers to IVF through higher cumulative success rates and lower treatment repetitions in IVF.

### DIAGNOSTIC PROCEDURES

#### THE ANALYSIS OF MICRONUTRIENT STATUS OF PREGNANT WOMEN WITH CONGENITAL MALFORMATIONS OF THE FETUS

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**Problem statement:** Congenital malformations (CM) of the central nervous system have extremely severe consequences, which makes it important to study their development and diagnosis in the process of embryogenesis. Particularly relevant are studies in the field of prevention of the formation of CM of the fetus. Objective - to assess the micronutrient status (vitamin D, homocysteine, serum and erythrocyte folic acid, vitamin B12) in women with induced abortion in the second trimester based on CM. **Methods:** A prospective cohort study was conducted in 53 women with induced abortion for medical reasons from the fetus in the second trimester of gestation. All pregnant women were divided into 2 groups: group 1 ( $n=28$ ) - without an established chromosomal abnormality (ChA-) in the fetus (with fetal CM without neural tube defects (NTD-) ( $n=16$ ) and with CM of the fetus with a defect in the neural tubes (NTD+) ( $n=12$ ), group 2 ( $n=25$ ) - pregnant women with established chromosomal abnormalities (ChA+) in the fetus. **Results:** It was shown that in pregnant women with congenital malformations and fetal NTD, the content of vitamin B12 in the blood serum correlates with the level of folic acid in erythrocytes, and is also significantly lower compared to women with congenital malformations, but without NTD ( $p < 0.05$ ). No significant differences were found for other parameters. It has been shown that in pregnant women with fetal CM, the level of homocysteine does not differ from that in women with normal fetal development at this stage of pregnancy. At the same time, the levels of folic acid and vitamin B12 in women with congenital malformations are significantly lower compared to pregnant women without this pathology ( $p < 0.001$ ). **Conclusion:** Found in patients with CM with NTD, the features of the micronutrient status, as well as the relationship between its individual indicators, indicate a complex etiology of the development of these pathologies. The obtained results indicate the expediency of assessing indicators of one-carbon metabolism disorders in the mother not only during pregnancy, but also at the stage of preconception preparation.

### GYNECOLOGY

#### THE EFFECT OF POSTPARTUM GENITAL SELF-IMAGE AND BODY PERCEPTION DURING SEXUAL INTERCOURSE ON SEXUAL DYSFUNCTION: A MIXED METHOD STUDY

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**Problem statement:** Many women experience physical sexual health issues in the months after birth, such as dyspareunia, lack of vaginal lubrication and a loss of sexual desire. For women, postpartum altered body image is an important and sensitive issue. Especially, changing genital self-image can affect women's sexual functions. Psychosocial factors impacting postpartum sexual functioning include body image. Perceived genital self-image, body perception during sexuality and knowing its effects on sexual functions are necessary for handling postpartum sexual dysfunctions of women.



**Methods:** The mixed-method study design used involved a survey and randomly selected 20–40 key informant interviews. The Female Genital Self-Image Scale (FGSIS), The Body Exposure during the Sexual Activities Questionnaire (BESAQ), and Arizona Sexual Experience Scale (ASEX) were used. Data were collected through a survey and in-depth semi-structured interviews, field notes, and daily notes, and quantitative data was analyzed using SPSS and the conventional qualitative content analysis. **Results:** Generally women (60%) started sexual intercourse on the 40th postpartum day. The mean FGSIS score of the women was  $19.97 \pm 4.44$ , the BESAQ mean score was  $1.65 \pm 0.45$ , and the ASEX mean score was  $15.74 \pm 3.72$ . FGSIS and BESAQ were found to be factors affecting sexual functions ( $p=0.03$ ). The rate of women who consider having plastic surgery on their genitals is approximately 40%. The aesthetic procedures that women think of, mostly, want to tighten the vagina, lighten the genital area color and then smaller the inner labia. This qualitative data, which supports the findings obtained with quantitative data, is also noteworthy: "My (un)sexy world with big black labia: the penis can be lost in my vaginal dark hole! What a satisfaction". Data acquisition is in progress. **Conclusion:** Postpartum genital self-image and body perception during sexuality are factors that affect sexual dysfunction. Postpartum sexual functions should be evaluated and specific recommendations should be offered. According to this study, it can be suggested to develop interventions targeting body image and sexuality in postpartum women.

#### THE EVALUATION OF EFFICACY AND SAFETY OF APPLICATION OF ULIPRISTAL ACETATE IN THE TREATMENT OF PATIENTS WITH VARIOUS TYPES OF UTERINE FIBROIDS

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**Objectives:** Despite a fairly large clinical experience in treatment of uterine fibroids, effect of treatment is often incomplete, disease progresses, which requires radical surgical intervention. In this regard, search for the most accessible and highly effective methods of therapy is of great practical importance. **Aims:** The aim of the study was to assess efficiency and safety of treatment based on ulipristal acetate in patients of reproductive age diagnosed with simple or proliferating uterine fibroids. **Material and methods:** A prospective randomized study of efficiency of ulipristal acetate in 150 patients with simple (group I) and proliferating (group II) uterine fibroids was conducted in the Department of Gynaecology at I.M.Sechenov Medical University. Histological and immunohistochemical study of uterine leiomyomas were performed by the Pathology Department. **Results:** After 3 months of treatment, amenorrhea was observed in 70% and 90% of patients in both groups I and II, respectively. After 3 months, reduction of nodes diameter by 27% in group I and by 47% in group II was revealed. In 80% of patients in both groups, average decrease of endometrium to 4-5 mm was found, in 10% - thickness of the endometrium reached 8 mm and 10% of patients were found to increase thickness of endometrium to 12 - 14 mm. Ulipristal reduces the leiomyomas size not only due to tumor cell apoptosis induction, and reduction of their proliferative and mitotic activity, but also due to angiogenesis and growth factors inhibition in combination with increased level of matrix metalloproteinases production and their tissue inhibitors. **Conclusion:** Ulipristal causes simultaneous negative impact on parenchymal components, angiogenesis and extracellular matrix and leads to rapid, significant and sustained decrease in leiomyomas volume. The obtained data allow us to recommend the application of ulipristal acetate as preoperative preparation in the group of patients with simple and proliferating uterine fibroids.

#### APPLICATION OF 3D-TUMOR SPHEROIDS IN DRUG DISCOVERY

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**Introduction:** In these latter days special importance is played to in vitro models based on cell cultures, including multicellular tumor spheroids (MTS) because of the tightening of the requirements for animal experiments. MTS are artificially produced small solid tumors, which are a three-dimensional (3D) model consisting of cancer cells received by taking a biopsy from a cancer patient. 3D cultures of tumor cells overcome the limitations associated with such basic characteristics as volume gradients, growth factors, and metabolites and the presence of necrotic, hypoxic, resting, and proliferating cells. **Aims:** The aim was to prove the advantage of the 3D model over the 2D model in order to further integrate the in vitro model of MTS into

the design of anticancer drugs and to use primary tumor cells in drug screening studies for the implementation of personalized cancer treatment. **Methods:** In the study, multicellular spheroids generated from a suspension of isolated cells of the immortalized adenocarcinoma cell line MCF-7 of human breast were obtained in the serum. Microcapsules with MTS were incubated in 24-well plates with Methotrexate for 48 hours. The control group was presented by the monolayer MCF-7 culture (100,000 cells per well). Quantitative evaluation of the surviving cells was carried out with trypan blue dye in a Fuchs-Rosenthal counting chamber. **Results:** The survival rate of viable cells in the control group was 2 times less than in MTS with a Methotrexate concentration of 100 nM. Evaluation of the cytotoxic effect of Methotrexate, based on the size of MTS was also made. When Methotrexate concentration of 100 nM, the number of living cells was 65 and 88% for spheroids with size of 150 and 300  $\mu$ m, respectively, while in the control group this value was only 35%. **Conclusion:** Compared to 2D cultures, cancer cells in 3D spheroid cultures demonstrate greater resistance to cytotoxic drugs, with the cytotoxic effect of Methotrexate decreasing while MTS size increasing. In this regard, 3D tumor models are a valuable "tool" for cancer research in the context of drug discovery.

#### PERCUTANEOUS TRANSCATHETER UTERINE ARTERY EMBOLIZATION: A NEW APPROACH TO TREAT UTERINE FIBROIDS

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**Study objective:** Percutaneous transcatheter embolization of the uterine arteries has been used in obstetric and gynecological practice since the late 1970s. The founder of the operation in patients with uterine leiomyoma was J.H. Ravina, who in 1994 in France performed the occlusion of the uterine arteries in order to reduce blood loss during subsequent myomectomy. **Aims:** Aim of study was improving the reproductive health and quality of life of patients with uterine fibroids through the use of modern minimally invasive technologies. **Materials and methods:** 208 patients diagnosed with uterine fibroids preparing for surgical treatment underwent uterine artery embolization using two types of embolizates: occlusive coils, particles of polyvinyl alcohol (PVA). Of these, 174 (83%) subsequently underwent myomectomy (72 (34%) planned pregnancy), 34 (17%) underwent radical surgery. Surgical treatment was carried out at various times (from 2 to 7 days) after UAE, both to assess the hemostatic effect and to assess the morphological changes in myomas and perifocal tumors of the myometrium, endometrium and serous membrane. **Results:** Intraoperative blood loss decreased by an average of 30%. In all cases, fibroids transformed into a non-proliferating clinical and morphological variant, if it was proliferating. It should be noted that when PVA particles were used, not a single tumor was subjected to necrosis in any case, as well as the preservation of growth zones located perifocal to the myoma in the myometrium and small forming nodes of other myomas. During occlusion with spirals, more pronounced foci of necrosis affecting the surrounding myometrium were noted. **Conclusion:** The use of UAE in uterine myoma is advisable to reduce intraoperative blood loss, or in isolation in somatically severe patients. In patients planning pregnancy, it is advisable to use PVA particles as an embolizate, while in other cases it is necessary to use occlusal coils. Recurrence of fibroids (more precisely, recurrence of fibroid growth during its reverse transformation into a proliferating variant) or the development of new fibroids after UAE is possible.

#### NON-PUERPERAL UTERINE INVERSION SECONDARY TO PROLAPSED ADENOMYOMA

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Non-puerperal uterine inversion is a rare, challenging and life threatening condition with only limited case reports published in literature. The most common cause are leiomyomas followed by uterine sarcomas. Early diagnosis is imperative to prevent morbidities. Multidisciplinary team is required to maximize surgical management either vaginal or abdominal approach. We present a case of a 67-year old multigravid who presented with vaginal bleeding and prolapsed uterine mass. The initial consideration was a malignancy and surgical intervention was done by exploratory laparotomy, peritoneal fluid cytology, bilateral internal iliac artery ligation, vaginal resection of the uterine mass, uterine repositioning, total hysterectomy with bilateral salpingo-oophorectomy and surgical staging. Final histopathologic showed prolapsed adenomyoma, in torsion. The patient had an



unremarkable post operative course and she followed up at the outpatient services of Obstetrics and Gynaecology (OB-GYN) clinic for post operative wound care. Due to its rarity, we present different presentation and causes of non-puerperal uterine inversion and management options when one encounters such case.

## E-POSTER PRESENTATIONS (General viewing)

### ART/IVF/INFERTILITY

#### HERLYN-WERNER-WUNDERLICH SYNDROME, COEXISTING WITH A URETHROVAGINAL FISTULA AND A LOWER VAGINAL ATRESIA, AND VACTERL ASSOCIATION: A CASE REPORT

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Herlyn-Werner-Wunderlich Syndrome (HWWS) is the triad of uterovaginal duplication with obstructed hemivagina and ipsilateral agenesis. It is a rare anomaly of the genitourinary system. Patients with HWWS would present with progressive pelvic pain due to the hematocolpos after menarche. We herein report a rare presentation of HWWS in a 21-year-old patient with an absent vagina but has periodic menstruation. MRI revealed the patient has other rare anomalies such as urethrovaginal fistula and VACTERL association which adds to the complexity of the case. The interplay of all these makes it one of its kind, a fascinating yet challenging case. In spite of a number of HWWS cases reported worldwide, this may possibly be the first case reported.

#### PREIMPLANTATION GENETIC TESTING FOR ANEUPLOIDY (PGT-A) AND REPRODUCTIVE OUTCOME OF WOMEN WITH ADVANCED MATERNAL AGE (AMA) IN THE UNITED ARAB EMIRATES (UAE)

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**Problem Statement:** Women with AMA exhibit a decrease in the number and quality of oocytes, which has been associated with an increased rate of chromosomal abnormalities, a reduction in the chance of pregnancy, a high chance of miscarriage, and lower odds of having a livebirth. Although, some investigators suggested that chromosomally abnormal embryos may correct their status with reports of healthy livebirths after transferring aneuploid embryos, other studies reported reduced miscarriage and increased livebirth rates in women of AMA who transferred euploid embryos after PGT-A application. **Methods:** A retrospective data analysis of  $\geq 40$ -year-old women in UAE who underwent in vitro fertilization or intracytoplasmic sperm injection with or without PGT-A and had fresh embryo transfer (ET) between October 2016-January 2021 at the Dubai Fertility Center. This single-governmental ART specialized center study included a total of 120 women. The PGT-A group and control group consisted of 53 and 67 women respectively. Couples' clinical characteristics were similar between two groups. Exclusion criteria included endocrine or systemic pathologies, previous PGT cycles for monogenic/single gene disorders or chromosome structural rearrangements, male factor infertility and body mass index  $\geq 35$ . Embryos with  $\geq 5$  blastomeres and 25% fragmentation were biopsied on Day 3. Next-generation sequencing was performed. Euploid blastocysts were selected for fresh ET on Day 5 or 6, based on their morphology using Gardner scoring. **Results:** Categorical data were assessed by Chi-square test. Two-sample t-test was applied to compare the quantitative values. The clinical pregnancy rate per ET (60.4% vs. 25.4%,  $p=0.001$ ) and the implantation rate (53.5% vs. 19.8%,  $p=0.001$ ) were significantly higher in the PGT-A group. A trend towards lower multiple pregnancy (6.3% vs. 22.2%,  $p=0.095$ ) and miscarriage rate (15.6% vs. 27.8%,  $p=0.302$ ) were noted in the PGT-A group. The lack of significant statistical difference could be attributed to the small sample size. **Conclusion:** This study showed clinical benefit of PGT-A in AMA women with significant increase in clinical pregnancy and implantation rates and a trend towards fewer miscarriages. No difference was observed in the blastocyst formation rate indicating that blastomere biopsy is safe to use when trophectoderm biopsy service is not available. No conflict of interest declared.

#### METABOLOMIC ANALYSIS OF FOLLICULAR FLUID IN WOMEN WITH ENDOMETRIOSIS: A PROSPECTIVE STUDY

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**Problem statement:** Endometriosis (EMS) is a benign gynecologic disease defined as ectopic proliferation of endometrial gland and stroma. Although the strong relationship between EMS and infertility is well known, its mechanism is still a conundrum. Recently, metabolomics has been spotlighted as a tool to elucidate the etiology, pathophysiology and mechanism of various diseases. Despite follicular fluid (FF) provides the microenvironment for follicular development and affects the quality of oocytes, there are only a limited number of metabolomic studies analyzing FF in EMS. The aim of this study is comparing the metabolomic and microbiome composition of FF of unilateral ovarian EMS with non-EMS patients. **Methods:** Ten women receiving oocyte retrieval were enrolled prospectively from July 2021 to July 2022 at Seoul National University Bundang Hospital. Five patients were diagnosed with unilateral EMS and the other five patients were non-EMS control group. In EMS group, FF from EMS-affected ovary was collected. Targeted quantitative metabolomics kit, which can detect 188 metabolites, and twenty bile acid (BA) quantification kit are used for metabolomic analysis. Multivariate analysis (principal component analysis) was performed to identify discriminative the differences of composition. **Results:** There were six metabolites with statistical differences. In EMS group, acylcarnitine propenoylcarnitine (C3:1) was significantly increased, whereas amino acid valine, alanine, acylcarnitine butyrylcarnitine (C4), butenylcarnitine (C4:1), and phosphatidylcholine diacyl C 38:3 (PC aa C38:3) were significantly elevated in non-EMS control group. Since antimullerian hormone level and the presence of DOR showed significant difference between EMS group and non-EMS group, the correlation with these factors and the six metabolites were performed. Valine was showed statistically significant positive correlation with AMH and C3:1 and valine had negative and positive correlation with DOR, respectively. Also, the BA kit analysis did not show any statistical difference between EMS and non-EMS patients. **Conclusion:** The different levels of acylcarnitines, amino acids, and glycerophospholipids suggest that endometriosis has altered mitochondria energy metabolism in cellular level. The gut microbiome may not affect the pathophysiology of follicular development in EMS since BA kit did not show significantly different patterns.

#### IMMUNE PATTERNS OF THE ENDOMETRIUM DURING IMPLANTATION FAILURES

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**Problem statement:** Differentially expressed immune factors of the endometrium can lead to a change in its receptivity. We aim to study the immune patterns of the endometrium and the microbiota types during the "implantation window" in women with infertility. **Methods:** Data from immunohistochemical examination of endometrial biopsies (TNF- $\alpha$ , IL-10, NRF2, GM-CSF, CXCL16, BCA1, TGF- $\beta$ 1) collected during the "implantation window" and microbiota assessment by real-time polymerase chain reaction in 171 patients (21 women with unexplained infertility, 36 - chronic endometritis, 74 - tubal-peritoneal infertility, 22 - external genital endometriosis, 8 - "thin" endometrium, 10 - healthy fertile women from the comparison group) were analyzed to identify molecular signatures. **Results:** Each group revealed different immune endometrial phenotypes. The basis of the "normal" phenotype was a controlled immune inflammation and a lactobacillary type of microbiota. In the group with the phenotype of chronic inflammation, an excessive immune response (overexpression of TNF- $\alpha$ , GM-CSF, CXCL16, BCA1, a decrease in IL-10 and TGF- $\beta$ 1), in contrast to the comparison group ( $p=0.001$ ) was determined on the background of a non-lactobacillary type of microbiota (63.3%). The peculiar feature of a dysplastic phenotype was a "poor" immune response, with TGF- $\beta$ 1 overexpression ( $p=0.001$ ) and a non-lactobacillary microbiota type (41.2%). An excessive immune response in the proliferative endometrial phenotype was determined by GM-CSF overexpression (1.2 times higher in the glandular epithelium than in the comparison group ( $p=0.001$ ), 1.2 times lower in the stroma)





( $p < 0.001$ ) with increased TNF- $\alpha$ , CXCL16 (in the glandular epithelium) and decreased IL-10, significantly more in the stroma than in the epithelium ( $p < 0.001$ ), in contrast to the comparison group ( $p < 0.001$ ). Uterine microbiome disorders were detected less frequently than in patients with the phenotype of inflammation (31.6%) ( $p = 0.01$ ). In the phenotype with impaired immune status, there was a decrease in GM-CSF, BCA1, CXCL16, TNF- $\alpha$ , IL-10 markers in both endometrial compartments ( $p < 0.001$ ) with a dominant lactobacillar microbiota type (81.2%). **Conclusion:** The molecular signatures of the endometrium are due to the heterogeneity of immune factors and microbiota. Aberrant expression of immune factors may contribute to the formation of a microenvironment unfavorable for blastocyst implantation.

#### IMPACT OF THYROID AUTOANTIBODIES AND SERUM TSH LEVEL ON CLINICAL IVF OUTCOMES

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**Problem statement:** It has been debated whether euthyroid infertile women with thyroid autoimmunity have poorer clinical IVF outcomes. A recent meta-analysis by Venables A et al. did not find any poor clinical IVF outcomes in women with thyroid autoimmunity. Many articles have focused on the relationship between pre-IVF serum TSH level in infertile women and clinical IVF outcomes, however, their conclusions have been conflicting. This study aimed to investigate the impact of thyroid autoantibodies and serum TSH levels on clinical IVF outcomes. **Methods:** This study included 260 Korean women scheduled for their first IVF between 2013 and 2017. Serum levels of thyroid hormone, TSH, and antibody for thyroid peroxidase and thyroglobulin were measured just before the first ovarian stimulation. Clinical pregnancy rate (PR), ongoing PR, and miscarriage rate were analyzed according to thyroid autoimmunity and serum TSH levels. The primary outcome was ongoing PR beyond 12 weeks of gestation. **Results:** The ongoing PR and miscarriage rates were similar between women with positive ( $n = 29$ ) and negative autoantibodies ( $n = 186$ ). In women with subclinical hypothyroidism (serum TSH  $\geq 4.2$   $\mu\text{IU/mL}$ ), ongoing PR was significantly lower than euthyroid women (22.2%, vs. 44.7%,  $p = 0.045$ ), but miscarriage rate was similar. The group with serum TSH  $\geq 3.4$   $\mu\text{IU/mL}$  showed a significantly lower ongoing PR (23.9% vs. 46.7%,  $p = 0.005$ ) and significantly higher miscarriage rate (38.9% vs. 14.1%,  $p = 0.020$ ). In multivariate logistic regression analysis, serum TSH  $\geq 3.4$   $\mu\text{IU/mL}$  was an independent unfavorable predictor for ongoing PR (odds ratio 0.375,  $p = 0.013$ ). **Conclusion:** Thyroid autoantibodies did not affect clinical IVF outcomes, but women with serum TSH  $\geq 3.4$   $\mu\text{IU/mL}$  demonstrated poor IVF outcomes.

#### CLINICAL PREGNANCY RATE AFTER TWO DIFFERENT METHODS OF LASER-ASSISTED HATCHING ON VITRIFIED-WARMED DAY-3 EMBRYOS OR DAY-5 BLASTOCYSTS

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**Problem statement:** When cryopreserved embryos/blastocysts are transferred, assisted hatching (AH) may have a benefit on clinical pregnancy rate (PR). Laser-AH showed low potential risk and relatively simple to perform with consistency. Laser-AH include two main methods: thinning and single-point breaching. However, combined method (i.e. partial thinning + breaching) is also used. It is largely unknown whether combined method is superior to single method. This study aimed to investigate the clinical efficacy of 'thinning + breaching' versus breaching only in frozen cleavage-stage embryo or blastocyst transfer cycles. **Methods:** One hundred ten day-3 frozen embryo transfer cycles and 50 day-5 frozen blastocyst transfer cycles were selected, retrospectively. Embryo/blastocyst transfers were performed from March 2021 to November 2022 at the Seoul National University Bundang Hospital. 'Partial thinning + breaching' was performed as thinning of a quarter or one sixth of zona pellucida (ZP) circumference with a single-point breaching. In day-3 frozen embryo transfer cycles, one to three embryos were transferred. In day-5 frozen blastocyst transfer cycles, one or two blastocysts were transferred. **Results:** In day-3 frozen embryo transfer cycles, the cycle characteristics including woman's age ( $36.9 \pm 4.4$  vs.  $37.7 \pm 4.7$  years), mean number of embryo transferred ( $2.1 \pm 0.7$  vs.  $2.1 \pm 0.5$ ), mean embryo score ( $42.6 \pm 19.5$  vs.  $39.4 \pm 19.0$ ) were similar between

'partial thinning + breaching' and 'breaching only' group. The clinical PR (23.5% vs. 21.1%), embryo implantation rate (11.4% vs. 10.1%), and clinical miscarriage rate (25% vs. 37.5%) was similar between two laser-AH groups. In day-5 frozen blastocyst transfer cycles, the cycle characteristics including woman's age ( $36.2 \pm 3.6$  vs.  $36.2 \pm 3.1$  years), mean number of blastocyst transferred ( $1.4 \pm 0.5$  vs.  $1.3 \pm 0.5$ ), mean blastocyst score ( $29.3 \pm 18.4$  vs.  $25.2 \pm 17.0$ ) were similar between two laser-AH groups. The clinical PR (45.5% vs. 42.9%), blastocyst implantation rate (35.4% vs. 33.3%), and clinical miscarriage rate (20% vs. 33.3%) was also similar between two laser-AH groups. **Conclusion:** 'Partial thinning + breaching' and 'breaching only' method may have a similar efficacy in terms of clinical PR, embryo implantation rate, and miscarriage rate.

#### ESTIMATING THE NUMBER OF MATURE OOCYTES REQUIRED FOR OBTAINING AT LEAST ONE EUPLOID EMBRYO OF PATIENTS AT A PRIVATE FERTILITY CENTER IN NORTH EAST OF MEXICO.

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**Problem statement:** The success of preimplantation genetic screening (PGS) depends on many factors, including female age and ovarian reserve, with an impact on embryo ploidy. The target of in vitro fertilization (IVF) coupled with PGS for aneuploidy testing is to select at least one euploid embryo for transfer in order to achieve a healthy live birth. The impact of age on euploidy rate is demonstrated by many studies. However, only a few studies have investigated the influence of the number of retrieved oocytes on the success of PGS, which would be invaluable for both patient counseling and establishment of a working plan. **Objective:** To analyze the number of mature oocytes that were necessary to obtain at least one euploid embryo in our fertility center. **Methods:** A retrospective, cross-sectional and analytical study of the records of 138 patients by age group who underwent intracytoplasmic sperm injection (ICSI) cycles at the IECH fertility center located in Monterrey between January 2016 and December 2020. Embryonic morphological evaluation was carried out, and subsequently biopsy was performed on day 5 or 6 development (blastocyst stage) of 376 embryos for preimplantation genetic diagnosis. Likewise, other related biochemical parameters were evaluated. **Results:** When evaluating the number of mature oocytes necessary to obtain at least one euploid embryo, it was found that in all patients, regardless of age, at least 7 mature oocytes and at least 3 blastocysts are required to obtain one euploid embryo with sensitivity of 81.1% and specificity of 37.5%. No relationship was found with anti-müllerian hormone, thyroid stimulating hormone nor prolactin levels. **Conclusions:** The number of mature oocytes necessary to obtain a chromosomally euploid embryo is highly variable between age groups. At an older age, the probability of generating an euploid embryo decreases. We can highlight that the euploidy rate in the group under 35 years of age was found to be 50% and in patients over 35 years of age was only 25%. We consider that this finding is a key element as a prognostic factor to optimize IVF/ICSI protocols where the age and ovarian reserve play an important role in the rates of obtaining an euploid embryo.

#### TIMING OF ICSI WITH RESPECT TO MEIOTIC SPINDLE STATUS

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**Introduction:** The aim of our study was to evaluate the efficiency of a method to assess the optimal time for oocyte fertilization by ICSI. Finding the right time for ICSI by using different parameters has been studied. The essence of the method is the use of the position of oocytes OP and MS together with MS visibility as indicators of oocyte maturity and consequently as pointers for proper ICSI timing. The angle between PB and MS together with MS visibility were non-invasively evaluated by optical microscope with polarizing filter.



**Methods:** This was a cohort study of patients younger than 40 years with planned ICSI, the timing of which was determined by MS status, compared with those without MS evaluation. The angle between PB and MS and MS visibility were evaluated by optical microscope with polarizing filter. Oocytes with MS evaluation were fertilized according to MS status either 5–6 h after ovum pick-up (OPU) or 7–8 h after OPU. Oocytes without MS evaluation were all fertilized 5–6 h after OPU. **Results:** For patients over 35 years visualization of MS influenced pregnancy rate (PR): 182 patients with MS visualization had 32% PR (58/182); while 195 patients without MS visualization had 24% PR (47/195). For patients under 35 years, visualization of MS did not influence PR: 140 patients with MS visualization had 41% PR (58/140), while 162 patients without MS visualization had 41% PR (66/162). **Conclusion:** Visualization of MS therefore appears to be a useful parameter for assessment of oocyte maturity and ICSI timing for patients older than 35. This work was supported by project MZ ČR RVO-VFN64165 and MH CZ-DRO-VFN 64165 of the Department of Gynaecology, Obstetrics and Neonatology, First Faculty of Medicine, Charles University and General University Hospital in Prague, by Grant Agency of the Czech Republic No.G-22-30494S:by the Institute of Biotechnology RVO:by the project BIOCEV:CZ,1.05/1.1.00/02.0109.

### FAVORABLE IMPACT OF INTRA-OVARIAN INJECTION OF PLATELET RICH PLASMA ON OVARIAN RESERVE AND OOCYTE/EMBRYO NUMBER IN INFERTILE WOMEN WITH POOR OVARIAN RESPONDER/PRIMARY OVARIAN INSUFFICIENCY

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**Problem statement:** Platelet-rich plasma (PRP) refers to a concentrated extract of platelets from autologous blood. In the field of infertility, PRP is being used in infertile patients with thin endometrium or those who have experienced repeated miscarriages. In infertile women with poor ovarian responder (POR)/primary ovarian insufficiency (POI), several studies suggest that intra-ovarian PRP injection may have a positive impact on ovarian reserve, oocyte/embryo number, and resultant IVF outcomes, but others also reported no significant impact. The present meta-analysis aimed to compare ovarian reserve and oocyte/embryo number before and after intra-ovarian PRP injection in infertile women with POR/POI. **Methods:** Databases of PubMed, EMBASE, and Cochrane Library were searched for studies reporting ovarian reserve and oocyte/embryo number before and after intra-ovarian PRP injection. MeSH keywords which served as a basis for searching studies were "intra-ovarian" and/or "platelet rich plasma". The last search date was March 23, 2023. **Results:** Ten prospective cohort studies were included in this meta-analysis. After intra-ovarian PRP injection, assessment of ovarian reserve was done 1.5 - 3 months later, and the IVF outcomes were followed up to 12 months at the longest. The weighted mean difference (WMD) between post-PRP serum anti-müllerian hormone (AMH) values at 1.5 - 3 months and pre-PRP AMH values was 0.12 ng/mL (95% confidence interval [CI]: 0.04 - 0.20 ng/mL, p=0.005). The WMD between post-PRP AFC at 1.5 - 3 months and pre-PRP AFC was 1.58 (95% CI: 1.09 - 2.06, p0.00001). Intra-ovarian PRP injection resulted in a significant reduction of duration of stimulation (WMD -1.12 days, 95% CI: -1.51 - -0.72, p0.00001), and significant increment of mature oocyte number (WMD 1.34, 95% CI: 0.72 - 1.96, p0.00001) as well as embryo number (WMD 0.92, 95% CI: 0.52 - 1.32, p0.00001). **Conclusion:** Intra-ovarian PRP injection resulted in a significant improvement of ovarian reserve in terms of serum AMH value and AFC. Mature oocyte and embryo number also significantly increased after intra-ovarian PRP injection. Authors have no conflict of interest to declare.

### OVARIAN HYPORESPONSIVENESS: HOW IT AFFECTS EMBRYO DEVELOPMENT AND GENETIC VIABILITY

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**Problem Statement:** Low ovarian response in young women undergoing assisted reproduction treatments has been associated with reduced follicular response and a decreased number of mature eggs. This situation can impact the success of fertility treatments. Understanding the genetic implications of embryos from patients with low ovarian response is crucial for optimizing reproductive strategies.

**Methods:** In a retrospective cross-sectional study, 536 patients aged up to 37 years were categorized into two groups: the poor ovarian responder group (n=94) and the control group (n=442). Poor ovarian responders had fewer than four mature eggs after the ovarian puncture, while controls met inclusion criteria related to tubal factor unexplained infertility or adenomyosis. All participants underwent assisted reproduction treatment involving embryo biopsy and preimplantation genetic testing for aneuploidy (PGT-A). Statistical analysis involved the application of the T-Student's test for numerical variables and the chi-square test for categorical variables. Data were analyzed using SPSS software (V26), and patients with additional factors linked to poor ovarian response were excluded. **Results:** Comparing the two groups revealed significant differences in AMH, progesterone levels, and the number of mature eggs (p=6.8x10<sup>-134</sup>). The control group exhibited a higher proportion of chromosomally normal embryos compared to the low ovarian response group (44.5%±30.1 vs. 32.2%±32.4, p=2.3x10<sup>-56</sup>). However, variables such as age, FSH, LH, BMI, estradiol, fertilization rate, blastocyst formation rate, and blastocyst quality did not display statistically significant distinctions. **Conclusion:** Young women with poor ovarian response demonstrated a reduced rate of chromosomally normal embryos during assisted reproduction treatments. These findings emphasize the importance of considering genetic testing for couples dealing with low ovarian response. To comprehensively understand the mechanisms underlying embryo genetic alterations, future prospective studies should be undertaken with larger patient cohorts.

### REDUCING PATIENT COSTS IN IVF: COST-EFFECTIVENESS OF RECOMBINANT LH (RLH) VS HMG-HP.

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**Problem statement:** Assisted reproductive treatments are expensive and have an uncertain future in terms of results. Medication is not included in these treatments, so it means an extra cost that must be assessed. If a treatment could be personalized, cost-effective, and represents the best option for each patient to achieve that much-desired pregnancy, in the minimum number of cycles, the economic and psychological consequences could be minimized. The gonadotropin market has multiple options, so we must select the best treatment protocol based on patient's age, ovarian reserve, the existence of male, genetic, immunological, coagulation, or endometrial factors to achieve the greatest number of mature and good quality oocytes to reach optimal blastocyst, pregnancy, and live birth rates. **Methods:** A total of 1089 IVF/ICSI (891) and fertility preservation (198) cycles have been divided into 2 groups for Chi-square test analysis. Group A: 940 cycles in which combined rFSH (follicle-stimulating hormone) and LHr (lutropin Alpha) were used in a 2:1 ratio (150IU rFSH:75IU rLH). Group B: 149 cycles stimulated with rFSH (follicle-stimulating hormone) in a lower-cost biosimilar) combined with menotropin (hMG-HP) from menopausal women, which in turn contains two hormones: uFSH and uLH. In addition, hCG extracted from the urine of pregnant women is added to contribute to total LH activity. The proportion in this case can be chosen for each patient depending of individual needs. The most used ratio was 1:1 (150IU rFSH:150IU hMG-HP). **Results:** The number of oocytes per cycle was statistically significant lower in group A (rLH) (p0.00001), maybe because with the antagonist protocol a very low average number of oocytes was obtained compared to the others, and another type of GnRH analogue should have been used depending on the type of patient, and not due to the LH effect. The other compared parameters did not show statistically significant differences between groups. **Conclusion:** Since the results are similar in both groups, even beneficial to those with no recombinant LH, and being 25% cheaper than those with rLH, we suggest the use of hMG-HP instead of rLH to reduce the cost of the assisted reproduction treatments.





FSH+LH	GnRH ANTAGONIST	SHORT GnRH ANAGONIST	LONG GnRH ANAGONIST	TOTAL OR MEAN
CYCLES	99	27	5	131
OOCYTES/CYCLE	7.8	7.5	7.5	7.6
MF	77%	77%	70%	74%
MEAN AGE (24-50)	35.8	37.5	38.9	36.7
DAYS OF STIMULATION (T-22)	10.4	8.8	12.4	10.5
FROZEN EMBRYOS RISK OF PCOS (NO PCOS)				2.3%
FROZEN ALL CYCLES (P4, E2)				87.2%
CYCLES WITHOUT EMBRYOS				163 (98.9%)
				44 (42.1%)
				14 (13.5%)
				45 (40.7%)
CANCELLATION BEFORE OPU	89	0	0	95.0%
	117	8	0	25.3%
				22.89%
				18.00%
				8.70%
				10.88%

### IS PROGESTERONE SUPPLEMENTATION NECESSARY IN THE LUTEAL PHASE AFTER INTRAUTERINE INSEMINATION USING HUSBAND'S SEMEN (IUI-H)?

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**PROBLEM STATEMENT:** The need to supplement the luteal phase with progesterone in order to improve outcomes is controversial in intrauterine insemination using husband's semen (IUI-H).

**OBJECTIVE:** To determine whether the administration of micronised natural progesterone vaginally increases gestation rates in patients undergoing IUI-H, in cycles stimulated with recombinant or ultrapurified gonadotrophins. **METHODS:** Prospective, randomized study including patients undergoing IUI-H between January and December 2020 (448 cycles in 215 couples). Patients with infertility of unknown origin and anovulation are included. Endometriosis, unilateral tubal obstruction, older than 38 years old and EMR less than 6 million are excluded. After IUI-H, patients were randomised into 3 groups: Group A without progesterone, Group B: progesterone 100 mg/12hours and Group C, 200mg/12 hours. A urine pregnancy test was performed after 16 days. If positive, treatment continued until the 8th week of pregnancy. **RESULTS:** Mean age was 35.8 years old, mean BMI 24.6 kg/m<sup>2</sup> and 2.19 years of infertility. After randomisation, qualitative variables (time of infertility, drug used, age or 35 years old, endometrial thickness, reason for the study, difficulty of the process and EMR) were analysed using the chi2 test, without finding statistically significant differences (p0.05). Quantitative variables (days of stimulation, hormone determination on the day of hCG administration (P4, E2, P4/E2 index), FSH and HMG doses, BMI, follicles larger than 14 and 18 mm) were also analysed by ANOVA test, with no significant differences (p0.05). After verifying that the three groups were homogeneous, we analysed the gestation rate, without finding differences between them. We observed interaction by logistic regression between P4/E2 and treatment with 200mg/12h in the gestation variable. The supplementation with 200 mg/12h, when the P4/E2 index variable is lower than 1.2 (obtained by ROC curve), is associated with a 3.5-fold increase in gestation rate (p0.05) and when it is higher than 1.2, the gestation rate is lower (p0.05). **CONCLUSIONS:** The levels of progesterone, estradiol and the balance between the two (P4/E2) are determining factors for embryo implantation and proper gestational development. In patients undergoing IUI-H, supplementation with 200 mg/12h when the variable P4/E2 index is less than 1.2 is associated with a 3.5-fold increase in gestation rate.

### IS PROGESTERONE SUPPLEMENTATION NECESSARY IN THE LUTEAL PHASE AFTER INTRAUTERINE INSEMINATION WITH DONOR'S SEMEN (IUI-D)?

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**PROBLEM STATEMENT:** The need to supplement the luteal phase with progesterone in order to improve outcomes is controversial in intrauterine insemination with donor's semen (IUI-D). **OBJECTIVE:** To determine whether the administration of micronised natural progesterone vaginally increases gestation rates in patients undergoing IUI-D in cycles stimulated with recombinant or ultrapurified gonadotrophins. **METHODS:** Prospective, randomized study including patients undergoing IUI-D between January and December 2020 (207 cycles/96 couples). Patients with infertility of unknown origin cis woman without a male partner and anovulation are included. Endometriosis, unilateral tubal obstruction, older than 38 years old and EMR less than 6 million are excluded. After IUI-D, patients were randomised into 3 groups: Group A without progesterone, Group B: progesterone 100 mg/12 hours and Group C,

200mg/12 hours. A urine pregnancy test was performed after 16 days. If positive, treatment continued until the 8th week of pregnancy. **RESULTS:** Mean age was 35.8 years old, mean BMI 24.6 kg/m<sup>2</sup> and 2.19 years of infertility. After randomisation, qualitative variables (time of infertility, drug used, age or 35 years old, endometrial thickness, reason for the study, difficulty of the process and EMR) were analysed using the chi2 test, without finding statistically significant differences (p0.05). Quantitative variables (days of stimulation, hormone determination on the day of hCG administration (P4, E2, P4/E2 index), FSH and HMG doses, BMI, follicles larger than 14 and 18 mm) were also analysed by ANOVA test, with no significant differences (p0.05). After verifying that the three groups were homogeneous, we analysed the gestation rate, without finding differences between them. We observed interaction by logistic regression between P4/E2 and treatment with 200mg/12h in the gestation variable. The supplementation with 200 mg/12h, when the P4/E2 index variable is more than 1.8 (ROC curve), is associated with a decrease gestation rate (p0.05) and when it is higher than 1.2, the gestation rate is lower (p0.05). **CONCLUSIONS:** The levels of progesterone, estradiol and the balance between the two (P4/E2) are determining factors for embryo implantation and proper gestational development. In patients undergoing IUI-D, supplementation with 200mg/12h when the variable P4/E2 index is more than 1.8 is associated with decrease in gestation rate.

### A PROSPECTIVE MULTICENTRE, NON-INTERVENTIONAL, REAL-WORLD STUDY TO DESCRIBE THE USE, EFFICACY AND SAFETY PROFILE OF FOLLITROPIN DELTA DURING IVF/ICSI PROCEDURES (DELTA STUDY)

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**Problem statement:** To describe the use, efficacy and safety profile of follitropin delta in women undergoing IVF/ICSI in routine clinical practice after one treatment cycle. **Methods:** This was a French, multi-centre, prospective, observational study conducted in normal care settings in fertility clinics between June 2020 and June 2021 in 14 active sites. Two hundred- and forty-eight women undergoing IVF or ICSI were treated with follitropin delta within this period and provided their consent. Patients were followed up to 10-11 weeks after the first fresh or frozen embryo transfer. **Results:** The analysable population consisted of 223 patients with mean±SD age of 33.0±4.4 years, body weight of 65.7±11.8 kg, and AMH of 3.2±2.6 ng/mL. For 193 patients (86.5%) it was the first IVF/ICSI cycle and for 30 (13.5%) the second. The algorithm was used for the calculation of the starting dose for 88.3% of the patients. The mean daily starting dose of follitropin delta was 11.4±4.1 mcg for the analysable population and 14.4±5.2 mcg for 26 patients dosed without the algorithm. The mean duration of stimulation with follitropin delta was 10.8±5.2 days. The median (IQR) total dose of follitropin delta administered was 104.9 [80.0-132.6] mcg. An antagonist protocol was used in 90.3% of patients. The mean±SD number of oocytes retrieved among patients that started stimulation was 11.3±6.8 and 46.1% of patients achieved the targeted response of the algorithm of 8-14 oocytes retrieved. A fresh transfer was performed for 77.6% of patients; the mean±SD number of embryos transferred was 1.3±0.5. The implantation rate





was 36.0%. Per started cycle, clinical pregnancy was reported in 35.0% of the patients and ongoing pregnancy in 29.6%. In total, 5 patients (2.2%) reported an event of OHSS. **Conclusion:** Clinical results as collected in routine clinical practice are promising, showing a favourable effectiveness-safety profile of follitropin delta, even for patients who did not receive the follitropin delta algorithmic dose. These real-world data complement results from clinical trials and provide useful information for usual clinical practice.

#### **BLASTOCYST TRANSFER DERIVED FROM FROZEN-THAWED CLEAVAGE STAGE EMBRYOS IS BETTER THAN FROZEN-THAWED CLEAVAGE AND BLASTOCYST EMBRYO TRANSFER**

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**Problem statement:** The aim of this study was to compare frozen embryo be transferred as it or after thawing and culture in media until blastocyst formation and blastocyst transfer. In addition, this study compares the clinical pregnancy rate of frozen-thawed cleavage embryo transfer and after thawed culturing blastocyst transfer and frozen-thawed blastocyst transfer. **Methods:** Prospective cohort study, a total of 941 frozen-thawed embryo and 301 transfer cycles performed in Ain Hospital, Incheon, South Korea between 2021 and 2023 were analyzed, and all patients were used Embryoglu® before transferred. Cleavage-stage embryos were performed Laser Assisted Hatching immediately after thawing and embryos frozen in the blastocyst were performed artificial laser shrinkage before freezing. **Results:** Pregnancy rate was significantly higher in blastocyst transfer group cultured after thawed (76.0%) compared to frozen-thawed cleavage transfer group (55.6%). Also, pregnancy rate was higher in blastocyst transfer group cultured after thawed (76.0%) compared to frozen-thawed blastocyst transfer group (68.5%). However, the number of thawing and discarding embryos was significantly higher blastocyst transfer group cultured after thawed than frozen-thawed cleavage and blastocyst transfer group. **Conclusion:** This study results indicated that blastocyst formation after thawing of cleavage stage embryos is a good predictor for embryo survival and pregnancy outcome. However, this result in a limit to thawed a lot of embryos because blastocyst formation cannot be predicted.

#### **EFFICIENCY OF THERAPY SMOFLIPID WITH EARLY REPRODUCTIVE LOSSES**

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**Problem statement:** Immune mechanisms play an important role in the pathogenesis of early reproductive losses. To regulate disorders of immune homeostasis to overcome infertility and recurrent miscarriage, immunoefferent therapy is used: immunocytotherapy, plasmapheresis, intravenous administration of immunoglobulins (IVIg) and fat emulsions. SMOFlipid is the modern "gold standard" of the third-generation parenteral fat emulsion containing a high concentration of omega-3 polyunsaturated fatty acids (PUFAs), which can directly or indirectly affect NK cell activity. Scientific sources have conflicting data on the effectiveness of fat emulsions in repeated implantation failures. The purpose of the study was to evaluate the effectiveness of therapy with a 3rd generation fat emulsion - SMOFlipid in patients with a history of early reproductive losses.

**Materials and methods:** A prospective randomized controlled study was conducted from 2021 to 2023 140 patients with early reproductive losses (with habitual miscarriage and repeated IVF failures) were included, the first group included 50 women treated with smoflipid. The second group included 90 women without therapy. Patients of the first group received therapy with a third-generation fat emulsion according to the scheme: SMOFlipid 20% IV 6ml per kilogram of body weight 1 time per month for 2 months in a row. Inclusion criteria: women aged 18 to 40 years with two cases of reproductive failure: pregnancy loss up to 10 weeks and/or unsuccessful IVF attempts with normal spouse karyotypes. **Results:** There was a statistically significant difference in the level of the omega-3 index before and after therapy with SMOFlipid fat emulsion ( $p=0.0002$ ). Thus, this indicator increased by 1.234 times relative to the initial level of the omega-3 index. The functional activity of NK cells differed significantly before and after the administration of the fat emulsion: NK(CD3-CD(16+56+))( $p=0.0041$ ), NKT(CD3+CD(16+56+))( $p=0.0498$ ), NK(CD 107a)( $p=0.0498$ ). Thus, these indicators respectively decreased by

1.631; at 1.2947; 2.074 times their baseline. In the first group, in patients treated with SMOFlipid, clinical pregnancy occurred twice as often compared to patients who did not receive fat emulsion therapy(56.41%(n=22)vs.31.25.6%(n=20)  $p=0.01$ ). **Conclusion:** SMOFlipid fat emulsion has been shown to be effective in pregnancy rate by reducing the functional activity of NK-cells and increasing the omega-3 index in women with early reproductive losses.

#### **THE PERFORMANCE OF HYFOSY FOR TUBAL PATENCY TEST. US EXPERIENCE RELATED PAIN AND ACCEPTABILITY FOR THE PATIENTS**

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Tubal pathology is one of the main causes of female infertility with a prevalence between 11% and 30%. Diagnostic laparoscopy with chromopertubation is considered the reference standard to assess tubal patency with direct visualization of the fallopian tubes and their surrounding pelvic structures. As laparoscopy is invasive and expensive, Hysterosalpingography (HSG) is currently still considered as the first-choice tubal patency test during fertility work-up. During HSG an iodinated contrast medium is flushed through the uterus and fallopian tubes, while radiographs are performed. Although HSG is less invasive than laparoscopy, it is often experienced as painful and it results in exposure to ionizing radiation and iodinated contrast medium. Hysterosalpingo-contrast sonography (HyCoSy) has been introduced as a more patient-friendly alternative. We present 115 cases of Infertile women between 18 and 38 years of age who were scheduled for tubal patency testing as part of the fertility work-up. All of them have regular cycles, not pelvic surgery or severe endometriosis and not severe male factor was demonstrated. To perform HyFoSy ; ExEm-foamVR (IQ Medical Ventures BV, Rotterdam, The Netherlands) 3-4 cc of echogenic foam was infused in the uterine cavity through a small cervical catheter after vaginal asepsis. This foam is stable to show echogenicity for at least 5min. The foam was slowly infused into the uterine cavity during 2-dimensional transvaginal sonography, and subsequent into the fallopian tubes to assess patency. HyFoSy were performed in 8 to 10 days of the cycle after cessation of menstrual bleeding. In 21 of 115 ( 18,26%) of the patients had unilateral tubal patency, in 10 of 115 ( 8,6%) had bilateral tubal obstruction and 84 others patients ( 73,04%) had not tubal patency. We found just one patient we couldn't performance due to cervical stenosis. No pain or vagal syndrome was observed that would cause the interruption of the test. We observed 6 ongoing pregnancy after HyFoSy ( 5,21%) and 16 ongoing pregnancy after star artificial insemination treatment (13,91%). We conclude that HyFoSy was a recommendable test for fertility work-up patients to explore tubal patency without discomfort or pain for our patients.

#### **ASSOCIATION BETWEEN LOW BLOOD PROGESTERONE LEVELS ON THE DAY BEFORE FROZEN EMBRYO TRANSFER AND PREGNANCY RATE**

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**PROBLEM STATEMENT:** The importance of progesterone for adequate endometrial transformation, embryo implantation, and maintenance of pregnancy remains unquestionable. **OBJECTIVE:** To determine the relationship between serum progesterone levels, the day before cryotransfer, and the pregnancy rate in cycles of artificial endometrial preparation. **METHODS:** Prospective cohort study, including cycles replaced between January-October 2020. Patients included are  $\geq 40$  years old, BMI 30 kg/m<sup>2</sup>, trilaminar endometrium with a thickness 7 mm. Patients with uterine abnormalities and natural cycles are excluded. Endometrial preparation is performed with leuporelin acetate 3.75 mg IM in the luteal phase of the previous cycle. On the first day of menstruation, estrogens are initiated[MOU1] (PO: 2 mg/8h estradiol valerate / Transdermal route: 3.2mg estradiol hemihydrate patches). Once adequate endometrial thickness has reached (7 mm), micronized natural progesterone is added 200 mg/8h (ovules). The day before the cryotransfer, determination of progesterone is performed. **RESULTS:** 156 substituted cycles were included. Average age is 35.3 years. BMI 25.1 kg/m<sup>2</sup>. Average endometrial thickness of 8mm. 39.7% achieved pregnancy; 24.4% were evolutionary. No statistically significant differences were found when performing blast or pre-embryo transfer, nor the number of embryos transferred (1 or 2). According to embryo quality, there is a higher pregnancy rate when



transferring quality A/B embryos (46.8%). Mean progesterone levels were 10.33 ng/ml. No cut-off point was found for the pregnancy rate, therefore, progesterone is not a good predictor test in our population (ROC curve). No relationship was found between the patient's weight and progesterone levels, nor when stratifying by embryo quality (ROC curve). A lower abortion rate is observed if progesterone levels 8.5 ng/ml; when calculating a cut-off point for a sensitivity of 80%. **CONCLUSIONS:** In our population, there is a tendency for a higher pregnancy rate with good quality embryos (A/B) in substituted cycles. Serum progesterone levels are not a good predictor of pregnancy rate. The cut-off point is 8.5 ng/ml, finding a higher abortion rate in women with  $PG \leq 8.5$  ng/ml.

## DIAGNOSTIC PROCEDURES

### GESTATIONAL DIABETES SCREENING, HIP PREVALENCE AND BIRTHWEIGHT: REGIONAL DIFFERENCES IN BELGIUM

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**Problem Statement:** Gestational diabetes (GD) screening methods vary considerably, with the two-step (TS) and one-step (OS) approaches being the most widespread. WHO endorsed the OS approach in 2013, which increases the detection of GD and theoretically reduces the frequency of Large for Gestational Age (LGA) infants, but risks to increase the frequency of Small for Gestational Age (SGA) infants. In Belgium, both approaches have been simultaneously implemented on a regional level, therefore is possible to compare birthweight between babies screened using both methods. **Methods:** Data of singleton live births were collected from the national birth registry between 2014 and 2019. It included maternal socioeconomic and clinical information, region of residence, Hyperglycemia in Pregnancy (HIP) status (gestational or pregestational diabetes), gestational age, birthweight, and sex. Birthweight centiles were calculated using AUDIPOG. Percentage and odds ratio (OR) of HIP between the OS and TS regions were determined, along with adjusted odds ratio (aOR), considering variables known to influence HIP. The relative risk ratio (RRR) between the two regions for having LGA or SGA babies, was calculated via multinomial logistic regression, adjusting for the same variables. **Results:** We included 379,947 births in the TS region and 321,745 births in the OS region. HIP prevalence was 4% in the TS region and 9% in the OS region. After adjustment, the aOR of having HIP in the OS region compared to the TS region was 2.27 (2.21-2.32). In the TS region, 13.6% of babies were LGA compared to 11.1% in the OS region. The prevalence of SGA was 5.9% in the TS region and 7.7% in the OS region. The RRR between the OS and TS regions for LGA was 0.81 (0.8-0.83), and for SGA, it was 1.17 (1.15-1.2). **Conclusion:** Implementing the OS strategy for GD screening, instead of TS, more than doubles the frequency of women diagnosed with HIP in the population. While the OS approach is associated with a slightly lower frequency of LGA infants, it also shows a higher frequency of SGA infants after adjusting for confounding variables. The OS approach needs to be carefully evaluated for the risk of SGA.

## FETOMATERNAL MEDICINE

### INTERPREGNANCY INTERVAL AND ASSOCIATED MATERNAL AND NEONATAL OUTCOME AMONG MULTIGRAVID SINGLETON PREGNANT WOMEN DELIVERED IN A TERTIARY HOSPITAL IN CEBU CITY: A RETROSPECTIVE COHORT STUDY (2016-2020)

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**Problem Statement:** Interpregnancy Interval (IPI) is the period between termination of one pregnancy and conception of a subsequent one. IPI allows assessment of future pregnancy complications. Study aims to determine the association of the different IPI on maternal and neonatal outcomes in multigravid singleton pregnancies. **Methods:** This was a retrospective cohort study, which included multigravid patients with 2 consecutive singleton pregnancies within January 2016 to December 2020, with the first live birth delivered via normal spontaneous delivery. A comprehensive chart review was utilized. The population was divided into short IPI (24 months), optimal IPI (24-59 months), long IPI (60 months). Maternal outcomes measured included incidence of gestational diabetes mellitus, hypertension, anemia, placental abnormalities and mode of delivery. Fetal outcomes measured included APGAR

score, Ballard score, birthweight, incidence of congenital anomalies and need for neonatal intensive care unit admission. Demographic data and maternal and neonatal outcomes were then compared with the different IPI categories. **Results:** From the 289 samples collected, 60 had short, 162 with optimal and 67 had long IPI. IPI was associated with age ( $p=0.000$ ) and a history of contraception ( $p=0.008$ ). There was no significant association with the different IPI categories, and maternal and neonatal outcomes. **Conclusion:** There was no significant association between IPI, and maternal and neonatal outcome among multigravid singleton pregnant women with two consecutive pregnancies.

### DESIGN OF A PHASE 3 STUDY OF NIPICALIMAB IN PREGNANCIES AT RISK FOR SEVERE HEMOLYTIC DISEASE OF THE FETUS AND NEWBORN (HDFN)

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**Problem statement:** Nipocalimab, a fully human, high-affinity, neonatal Fc receptor (FcRn)-blocking monoclonal antibody, inhibits transplacental maternal immunoglobulin (IgG) and alloantibody transfer and lowers circulating maternal IgG alloantibody levels. The potential for nipocalimab in preventing fetal anemia, intrauterine transfusions (IUT), and poor outcomes is supported by results from the open-label, single-arm, phase 2 UNITY study (NCT03842189) conducted in alloimmunized, pregnant individuals at high risk of early-onset. **Methods:** AZALEA will enroll alloimmunized pregnant individuals ( $N \approx 120$ ) with singleton pregnancies (alloantibody titers for RhD, Rhc, RhE, Kell antigens  $\geq 4$ ; antigen-positive fetus in the current pregnancy) and an obstetric history of fetal anemia requiring  $\geq 1$  IUTs, or fetal loss or neonatal death due to HDFN. The study includes screening period (8-16 weeks GA), double-blind treatment period (13-35 weeks GA), planned delivery (~37 weeks GA), postnatal follow-up (24 weeks, maternal participants; 104 weeks, neonates/infants). Maternal participants will be randomized 2:1 (nipocalimab:placebo) to receive weekly intravenous infusions. During the double-blind period, weekly monitoring by middle cerebral artery Doppler peak systolic velocity (MCA-PSV) for a value  $\geq 1.5$  multiples of the median (MoM) will inform the need for cordocentesis confirmation of fetal anemia and IUT. Subsequent IUTs will be determined by  $MCA-PSV \geq 1.5$  MoM and/or time interval since the first IUT. **Results:** Primary endpoint is proportion of pregnancies not resulting in fetal loss, IUT, hydrops fetalis, or neonatal death. Key secondary endpoints include HDFN severity as measured by composite HDFN severity index, earliest time to occurrence of IUT or hydrops fetalis, modified neonatal mortality and morbidity index in liveborn neonates, and number of IUTs received. Other endpoints including exploratory are safety, patient- and caregiver-reported outcomes, pharmacokinetics, pharmacodynamics (e.g., FcRn placental receptor occupancy and IgG), and nipocalimab immunogenicity. **Conclusion:** AZALEA, the first placebo-controlled, randomized, global, multicenter, prospective clinical trial in severe HDFN will study the safety and efficacy of nipocalimab, a novel, noninvasive treatment to reduce the risk of fetal anemia in high-risk HDFN pregnancies.

**Disclosures:** DO, ET, EL-None; KJM Jr.-Janssen, UpToDate, Health Management Associates, BillionToOne, GLC Healthcare; MF, PA, RB, AB, YK, EL, JHL, LEL, RMN, VO, CR, SSK, LBS, MLT, JW, XLX, UA, WS-Janssen



## THE EFFECTIVENESS OF EARLY SECOND TRIMESTER ULTRASOUND ANALYTICAL SCAN

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37 years). 3. Referral for suspicion of fetal anomalies, 4. Missed first trimester scan 5. Referral for invasive procedure. **Results:** The scan was accomplished in all cases. The examination time was 35±15 minutes. Concerning the cardiac exam, the "4 chambers view" was seen in all cases, while in cases of cardiac abnormality the analytical fetal cardiac scan was done in a fetal cardiology center. In total we noticed 20/116 (17.24%) cases. Serious abnormalities was seen in 7/116 (6%) cases including, fetal hydrops (1), skeletal dysplasia (1), tetralogy of Fallot (2), cystic adenomatoid malformation (1), cleft lip-palate (1), congenital right diaphragmatic hernia (1). Minor malformations were noted in 13/116 (11.20%) cases including, hydronephrosis (5), golf balls (4), choroid plexus cysts (3), unilateral club foot (1). Amniocentesis was done in all the severe cases and in one of the minor cases resulting in one Turner syndrome and two trisomies 21. Non invasive test was done in 6/13 minor cases (46.15%) with negative results. We noticed also a hyperechogenic bowel and a possible absent corpus callosum which in the re-examination at 22 weeks proved normal. All the severe cases decided to terminate the pregnancy. **Conclusion:** Second trimester analytical scan is performed between 19-23 weeks of gestation with most preferable time around 22 weeks permitting investigation of all the organs. However, early analytical scan around 18 weeks also seems useful and effective when fetal pathology is present. Early scan, permits prompt diagnosis in earlier gestational age and allows parents to opt for invasive procedure and continuation or termination of the pregnancy." target="\_blank". **Problem statement:** The purpose of the study was to investigate the effectiveness in the diagnosis of fetal anomalies in the "early" second trimester analytical ultrasound. **Methods:** This is a retrospective study including all the early analytical scans performed the last year (2022). Our department is a certified center in fetal medicine. In total, we examined 116 women between 17th-19th weeks of gestation. The inclusion criteria were: 1. Abnormal results in the first trimester screening test for chromosomal anomalies or scan done in not certified centers. 2. Increased maternal age (37 years). 3. Referral for suspicion of fetal anomalies, 4. Missed first trimester scan 5. Referral for invasive procedure. **Results:** The scan was accomplished in all cases. The examination time was 35±15 minutes. Concerning the cardiac exam, the "4 chambers view" was seen in all cases, while in cases of cardiac abnormality the analytical fetal cardiac scan was done in a fetal cardiology center. In total we noticed 20/116 (17.24%) cases. Serious abnormalities was seen in 7/116 (6%) cases including, fetal hydrops (1), skeletal dysplasia (1), tetralogy of Fallot (2), cystic adenomatoid malformation (1), cleft lip-palate (1), congenital right diaphragmatic hernia (1). Minor malformations were noted in 13/116 (11.20%) cases including, hydronephrosis (5), golf balls (4), choroid plexus cysts (3), unilateral club foot (1). Amniocentesis was done in all the severe cases and in one of the minor cases resulting in one Turner syndrome and two trisomies 21. Non invasive test was done in 6/13 minor cases (46.15%) with negative results. We noticed also a hyperechogenic bowel and a possible absent corpus callosum which in the re-examination at 22 weeks proved normal. All the severe cases decided to terminate the pregnancy. **Conclusion:** Second trimester analytical scan is performed between 19-23 weeks of gestation with most preferable time around 22 weeks permitting investigation of all the organs. However, early analytical scan around 18 weeks also seems useful and effective when fetal pathology is present. Early scan, permits prompt diagnosis in earlier gestational age and allows parents to opt for invasive procedure and continuation or termination of the pregnancy.

## FETAL SANDAL GAP: A "FORGOTTEN" ULTRASOUND MARKER OF TRISOMY 21

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**Introduction:** Down syndrome is the most common chromosomal abnormality associated with maternal age. On examination the embryos could appear with minor or major sonographic markers, or the ultrasound findings could be absent. In the general population it appears in 1/700-800 pregnancies with equal frequency between males and females fetuses. **Case report:** We present a case of a 38

years-old-woman who presented for her first scan at 17 weeks of gestation having missed the first trimester ultrasound scan for Down syndrome. During the scan we noticed three markers which increased the risk for Down syndrome. Hypoplastic nasal bone, golf ball and sandal gap (Figure 1). After counseling the woman decided to proceed to amniocentesis, the karyotype revealed trisomy 21 and the parents opted to terminate the pregnancy. **Conclusion:** The commonest ultrasound findings for Down syndrome are absent nasal bone, ventricular dilatation, prenatal edema, increased nuchal fold, cardiac anomalies, esophageal atresia, duodenal atresia, hyperechogenic bowel and short femur. Clinodactyly, syndactyly and renal anomalies are less frequent and absent mid phalanx of the fifth finger and sandal gap are extremely rare. In general, when one or more ultrasound markers are present the fetus should be examined analytically and thoroughly. Cardiac scan and invasive testing should be strongly suggested.

## NEONATAL CONGENITAL LEUKEMIA: A CASE REPORT

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**PROBLEM STATEMENT:** Neonatal congenital leukemia is a rare disease, with an estimated prevalence of 1-5 cases per million live births and very poor prognosis (1). The most frequent type is acute myeloid leukemia (2). There are different ultrasound signs that suggest congenital leukemia such as fetal hydrops, hepatosplenomegaly, ascites and polyhydramnios (1). Congenital leukemia has been associated with Down Syndrome and other chromosomalopathies (Turner Syndrome, 9 and 13-15 trisomies) (2). Although its etiology is poorly understood, it seems that it is related to gene mutations in MSH6, NRAS, RUNX1, KMT2A and others, and intrauterine exposure to teratogens (2). **METHODS:** A pregnant 35-year-old was admitted to our hospital at 32+1 weeks due to reduced fetal movement. The patient was being followed-up because diagnosis of mild unilateral ventriculomegaly. An amniocentesis was performed with normal array results (46 XY). In the routine ultrasounds no fetal morphological alterations were observed. At the emergency room she was diagnosed of Intrauterine Growth Restriction grade I, with normal estimated fetal weight (16th percentile), and a pathologic cerebroplacental ratio (1,07; 1st percentile) with the other fetal Doppler studies not affected. In the non-stress test appeared deep decelerations and low variability, so a caesarean section was performed due to fetal distress. **RESULTS:** Caesarean section occurred without problems, delivering a 1468g live newborn with Apgar 5-3-0, pH UA 7.14 and pH UV 7.25, that paediatricians could not resuscitate. The necropsy informed of diffused infiltration of the bone marrow, thymus and skin by CD71+ blasts. Little tumoral purple lesions were observed in the skin. The fetus also presented hepatosplenomegaly with CD71+ blasts infiltration. It all suggested the diagnosis of neonatal congenital leukemia. A FISH KMT2A (MLL 11q23) and RUNX1T1 (t(8:21)(q22:q22)) studies were carried out in which no rearrangements were observed. **CONCLUSIONS:** In this case, even though none of the possible ultrasound signs were observed in the routine ultrasounds, the necropsy informed of hepatosplenomegaly. Moreover, it is important to highlight the low prevalence of this entity in euploid fetuses as in this clinical case. Finally, even though there are different genetic mutations described in the literature, no genetic alterations were detected.

## WOMEN'S ATTITUDES, PERCEPTION OF PAIN, ANXIETY LEVELS AND THE DECISION TO RECEIVE AN ANALGESIC TREATMENT DURING LABOUR

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**Background:** Pain during labour is often one of the strongest pains experienced by a woman up to this stage of her life, but it is known that the intensity of the pain varies greatly between different patients. Also, while pain during labour can be treated as any other pain, there are also many points of difference between it and pain from other sources, mainly the fact that the pain is physiological and part of a natural process that the body goes through. From this, it can be understood that pain during labour is a complex and complicated phenomenon, which requires a different therapeutic approach compared to pain from other sources. The purpose of the study was to examine the relationship between beliefs, attitudes, perception of pain and anxiety and the decision to receive analgesic treatment during labour among women from Israel. **Methodology:** This





Quantitative cross-sectional study included 120 women of reproductive age, who gave birth in at least one vaginal birth and with one gestational sac. The research tool was an online questionnaire made up of 4 parts: a sociodemographic questionnaire, a questionnaire on attitudes, beliefs and perceptions, Pain Catastrophizing Scale (PCS) questionnaire for pain perception (Sullivan et al., 1995) and an State Anxiety and Trait Anxiety questionnaire (Spielberger et al., 1971). **Results:** A significant correlation was found between the woman's attitudes and beliefs regarding pain-analgesic treatment ( $\chi^2(38)=81.78$ ,  $P<0.001$ ) and woman's perception of pain ( $\chi^2(41)=76.93$ ,  $P<0.001$ ) and the decision to receive the analgesic treatment during labour. Furthermore, a moderate and significant positive correlation was found between the perception of pain and the level of anxiety ( $r=0.48$ ,  $p<0.001$ ). **Conclusions:** The woman's decision to receive analgesic treatment during labour is related to her attitudes and beliefs about the treatment and her perception of pain. Understanding women's attitudes and level of fear, negative emotions and pain may help the midwives and care staff in the delivery room to adapt their interactions with the women giving birth and also should reduce and control their pain.

#### ABOUT A CASE: KIDNEY ABSCESS AS A COMPLICATION OF PYELONEPHRITIS IN A 17 WEEKS PREGNANCY

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Urinary tract infections (UTI) include cystitis (bladder/lower urinary tract infection) and pyelonephritis (kidney/upper urinary tract infection). The pathogenesis of UTI begins with colonization of the vaginal introitus or urethral meatus by uropathogens from the fecal flora, followed by ascent through the urethra into the bladder. Pyelonephritis develops when pathogens ascend to the kidneys through the ureters, and one of its complications is the formation of a renal abscess. Focal renal abscesses generally occur in the setting of pyelonephritis, particularly in patients with anatomic abnormalities that predispose to infection. Predisposing factors for renal and perirenal abscesses include diabetes mellitus, pregnancy, and urinary tract abnormalities. Anatomic abnormalities that may be complicated by infection include a kidney stone, especially large staghorn calculi, vesicoureteral reflux, neurogenic bladder, obstructive tumor, papillary necrosis, benign cyst, and polycystic kidney disease. **Clinical case:** A 28-year-old woman, 17+2 weeks pregnant, went to the Emergency Department on 4/24/23 referred to Peracamps due to persistent fever with tremors without taking a temperature. Diagnosis of UTI on 04/09/23 treated with Cefuroxime for 7 days (sensitive E.Coli), subsequently she maintained a feverish feeling and headache, for which she revisited, finding low-grade fever, and presenting symptoms of low back pain and nausea and vomiting. It was classified as acute pyelonephritis and the antibiotic treatment was escalated to ertapenem. On 4/26/23, a reno-vesical ultrasound was performed: ill-defined cystic lesion in the middle third of the right kidney measuring 18 mm, with thickened walls, suggestive of renal abscess (Figure 1). No other collections or perirenal fluid are observed. Under ultrasound control, Fine Needle Aspiration Puncture was performed with an 18G needle of the lesion described in the middle third of the right kidney, obtaining 3 cc of pus that was sent for microbiological study. **Discussion:** The technique was performed without incident, and the recovery of the pregnant woman was very favourable. Given that pregnancy is a risk factor for complications of UTIs and APN, we believe that abscess drainage would be indicated in this type of population.

#### THE ECONOMIC BURDEN OF HAEMOLYTIC DISEASE OF THE FOETUS AND NEWBORN (HDFN): A SYSTEMATIC LITERATURE REVIEW (SLR)

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**Problem statement:** HDFN a rare condition leading to extensive haemolysis in infants, often necessitates neonatal intensive care unit (NICU) admission. Prenatal management of HDFN includes invasive, resource-intensive intrauterine transfusions (IUTs). Postnatal management focusses on managing anaemia and hyperbilirubinemia

with exchange transfusions (ET), red-blood cell transfusions and phototherapy. To characterise the economic burden of HDFN, current PRISMA-compliant SLR summaries published cost and healthcare resource utilisation (HCRU) data. **Methods:** Electronic databases were searched in March 2022 and supplemented with handsearching. Studies conducted in Europe, Middle East and Africa were eligible. **Results:** Of 2,665 citations screened, 12 publications conducted in Europe/Middle East were eligible; no African studies were identified. Data were primarily post-2010 ( $n=11$ ), retrospective cohort studies ( $n=9$ ) and limited to neonatal HCRU outcome data (Table 1). Patients with HDFN admitted to NICU were more (78.0% and 79.8%,  $n=2$ ). One study reported low NICU readmission rates for blood transfusion/phototherapy (4%). Average length of stay (ALOS) was the most reported outcome ( $n=10$ ) and ranged between 6–7 days across eight post-2010 publications. Single study (1997) (limited relevance to current practice) reported mean ALOS of 17.9 days in neonates with severe HDFN. Six studies reported comparative ALOS data; one study reported significantly higher ALOS in moderate versus mild HDFN ( $p<0.01$ ); one reported significantly higher ALOS in neonates receiving postnatal intravenous immunoglobulin (IVIG) with phototherapy versus phototherapy alone ( $p<0.001$ ). No significant difference in ALOS were reported between ET ( $n=2$ ), postnatal IVIG ( $n=1$ ), IUT ( $n=1$ ) regimen subgroups in remaining four studies, indicating limited improvement in treatment over time. A study identified gaps in types of services and legally required registers across Italian transfusion centres. **Conclusions:** As a rare disease, the economic burden associated with HDFN from global and local perspective is poorly understood. Published evidence was limited to heterogeneous HCRU outcomes; no disease-related direct/indirect costs incurred by patient and parents were identified. A paucity of reported comparative data or aligned outcomes between studies limits conclusions, highlighting the need for further research.

#### Disclosures:

McCallion J, Borsi A, Fitzgibbon M, Lee J, Noel W, Karmous W, Barthelmes JN: Janssen-Cilag employees.  
Hardy E, Mitchell S, Mitchell C: Mtech Access employees.

#### A PREECLAMPSIA PATIENT WITHOUT SEVERE FEATURE FOLLOWED BY A SUDDEN ONSET OF BELL'S PALS. WHAT APPROACHES SHOULD WE CONSIDER?: A CASE REPORT

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**PROBLEM STATEMENT:** Preeclampsia has been reported to cause significant maternal and fetal morbidity and mortality. Treatment is chosen based on the degree of severity, gestational age, and fetal viability. The relationship between preeclampsia and Bell's palsy is still debatable. Furthermore, the treatment of Bell's palsy also has potential risks for both mother and fetus. **METHODS:** The method taken in this paper is a descriptive study presented as a case report. **RESULTS:** A 37-year-old multigravida in the third trimester of pregnancy attended the emergency room with several days of right-sided headache and weakness of the right-sided face since one day before. This patient had received fetal lung maturation therapy and oral antihypertension a week prior due to high blood pressure. She had never previously experienced hypertension. She also had a history of cesarean section. During an examination, it was discovered that the patient's blood pressure was elevated (142/91 mmHg) and the right 7th nerve was paralyzed. An ultrasound revealed a breech-presented fetus with an estimated gestational age of 36+6 weeks and a normal fetal heart rate. Proteinuria was negative, and laboratory test revealed no abnormalities in organ function. The patient received 4 g loading dose of MgSO<sub>4</sub> infusion, followed by 1 g/hour maintenance dose for 24 hours, and nifedipine 3x10 mg. Collaborative management was carried out with neurology department; additionally, she was given methylprednisolone (3x62.5 mg tapering-off) and mecobalamin (3x500 ug). Vital signs were monitored continuously, followed by a cesarean section and bilateral tubectomy. The newborn weighed 2.390 g, and the APGAR score was 8/9. Postnatal perinatology observation did not find any abnormalities; therefore, the newborn continued care with the mother. The patient received care for four days. On the last day of hospitalization the blood pressure was stable, headache and facial weakness concerns had improved. **CONCLUSION:** High-dose methylprednisolone carries the risk of raising blood pressure, even though it should be given as soon as possible to achieve effective clinical significance in Bell's Palsy. It is important to continuously monitor the fetal heart rate, mother's blood pressure, and administration of antihypertensive drugs. MgSO<sub>4</sub> is also given to prevent preeclampsia progression.



## CPAM ASSOCIATED WITH 3Q29 MICRODUPLICATION SYNDROME

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**Problem statement:** To exemplify the management of CPAM and its association with 3q29 microduplication syndrome. **Methods:** 29-year-old woman, tercigravida, no relevant family history. At 20 week SCAN a large cystic adenomatous malformation (CPAM) in the left lung is diagnosed, with no other findings. Genetic study found a 3q29 microduplication syndrome of 1.8Mb, reported as probably pathogenic. It is a rare genomic condition (OMIM 611936) associated with neurodevelopmental disorders and a variable clinical presentation. Incomplete penetrance is observed since the microduplication in many cases is inherited from unaffected parents. The mutation is determined to be de novo. **Results:** The couple requests legal interruption of the pregnancy. We present the case to a committee and it is declined, arguing that CPAM is a malformation with a good prognosis and the mutation found is not sufficiently known and its penetrance is incomplete. General evolution of the fetus is good, close controls are carried out until week 28. A relative reduction of CPAM is observed in relation to the healthy lung both by ultrasound and by MRI. Central nervous system MRI is also performed, turns out normal. **Conclusion:** This case highlights the importance of fetal MRI in the management of CPAM and close follow-up until week 28 due to risk of hydrops. It also exemplifies the casual or causal finding of microduplication as well as variable expressivity and incomplete penetrance as a counseling problem.

## HIGH BODY TEMPERATURE AFTER STEROID ADMINISTRATIONS DETERIORATE NEW BORN ENCEPHALOPATHY OF MICE MODELS SHOWN BY BEHAVIORAL STUDIES

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**Problem statement:** Risks of high body temperatures with steroid administrations shown by behavioral studies using neonatal mice models. **Methods:** We used 72 newborn SPF Slc:ddY mice in this study. We divided mice into three groups A, B, and C. In the group A, we administered saline as control on the 3rd, 4th, and 5th days after birth to 25 mice and incubated for two hours at 36 degrees centigrade. In group B and C, we administered 5mg betamethazone (BET) per body weight (kg) diluted in saline abdominally and incubated at 40 (group B) or at 34 degrees centigrade (group C) for two hours. Behavioral test. Three weeks after the BET administrations, we performed suspension test. On the 42 and 49 days after birth, we performed water maze test (WMT) and step-down type passive avoidance tests (SDPAT). **Results:** The WMT revealed that swimming durations in the group B were significantly shorter than those of the other groups. The SDPAT revealed the staying durations on the insulation board of the group A were significantly longer than those of the other groups. Histological studies has been under investigations. **Conclusions:** Steroidal administrations with hyperthermia caused behavioral impairments after growth. Hyperthermia soon after steroid administrations might be avoided in obstetrical and neonatological practices.

## INTRAHEPATIC PERSISTENT RIGHT UMBILICAL VEIN: TWO CASES REPORTS

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**Problem statement:** Persistent right umbilical vein (PRUV) is caused by an alteration of the vascular embryonic development in which the left umbilical vein suffers an early obliteration and the right one remains open rather than disappearing by the 7th week of gestation. Its prevalence is described as approximately 1/500 fetus, being the intrahepatic variant the most frequent one, in which the development of the ductus venosus is possible due to the union of the right vein to the portal system at the sinus venosus. In the extrahepatic variant the umbilical vein drains blood directly into the inferior vena cava, iliac vein, or right atrium with a worse prognosis. **Methods:** We report two cases of intrahepatic persistent right umbilical vein. The first one is a

30-year-old woman with no prior medical history of interest, who was diagnosed during her second trimester ultrasound. In this case ductus venosus was present and the following sonographic exams showed no additional malformations. The second case is a 30-year-old woman, with migraine headaches as unique medical history. As the first case, the PRUV was identified in the 20th-week ultrasound, and it has been considered as an isolated malformation, as no others have been found up to her gestational age. **Results:** The first pregnancy concluded in a forceps-assisted delivery at 39 weeks of a healthy female neonate, 2914 grams with Agar scores 9/10/10 (1/5/10 minutes). No clinical alterations were found in the neonate follow-up. The second patient was diagnosed with gestational diabetes at 27 weeks, which is being well controlled with exercise and diet until present day. Estimated fetal growth is at percentile 61. **Conclusion:** Our both patients had intrahepatic PRUV as an isolated anomaly. Although there is a high variation among series, it is described approximately a 25% rate of PRUV association to malformations. Therefore, there is a unanimous consensus to perform a fetal echocardiography and a targeted anatomy exam to rule out concomitant abnormalities. It is important to highlight the good prognosis of isolated PRUV, as it was the case of our patients.

## THE IMPACT OF HAEMOLYTIC DISEASE OF THE FOETUS AND NEWBORN (HDFN) ON DEVELOPMENTAL OUTCOMES: A SYSTEMATIC LITERATURE REVIEW

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**Problem statement:** HDFN is a rare and potentially life-threatening alloimmune condition leading to extensive haemolysis in the foetus and newborn. Prompt diagnosis and therapeutic intervention of pregnancies at risk are therefore critical. A systematic literature review was conducted to understand the burden for parents and affected offspring experiencing HDFN. **Methods:** Electronic databases were searched until March 2022 and supplemented with handsearching. Studies including patients with HDFN in Europe, Middle East and Africa were in scope. The review was documented in accordance with PRISMA statement reporting recommendations. **Results:** Although no direct evidence for burden and/or experience of parents or affected offspring with HDFN was identified, 8 European studies reported proxy outcomes in affected offspring, including neurodevelopment (n=7 studies), academic ability (n=6), personality (n=2) and behaviour (n=2) (Table 1). Most studies were published before 1998 and data were heterogeneous for all outcomes across studies. For neurodevelopment, 5/7 studies reported a low proportion of children with HDFN experienced impairments, assessed by various tools, but two reported no differences versus the general population. Of the 6 studies exploring academic development, 4 reported comparative data versus the general population, of which 2 reported no significant differences between populations, whilst 2 reported significantly higher grade repetition and academic delay in children with history of HDFN. Two studies reported an association between personality traits and HDFN disease severity. Two studies suggested no difference in behavioural outcome in HDFN versus the general population. Several factors associated with impaired development in patients affected by HDFN were identified (Table 1); however, 1 study, comparing patients with or without prior intrauterine transfusion (IUT) treatment, reported no overall difference in neurodevelopmental, academic, and behavioural outcome between groups. **Conclusions:** Whilst there are no specific data on the impact of disease on parents, indirect evidence suggests children with a history of HDFN have the potential to experience neurological, behavioural, and academic impairments. However, the paucity of recent data and study heterogeneity limits any robust conclusions reflecting current clinical practice. Further research, with aligned outcome measures, is needed to understand the long-term impact of HDFN and antenatal treatments on neurodevelopment of infants and children.

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**A CASE REPORT OF A PARTIALLY MONOCHORIONIC TWIN PREGNANCY COMPLICATED BY TTTS**

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**Problem statement:** When identifying a twin pregnancy, it is crucial to determine chorionicity during the first trimester of pregnancy. An accurate analysis of the intertwin membrane may help in the diagnosis of rare chorionicity variants. **Methods:** This is a case report of a rare case of partial monochorionic twin pregnancy. **Results:** The patient is a 32-year-old woman, G2P1. The pregnancy occurred through Intracytoplasmic Sperm Injection (ICSI) with pre-implantation diagnosis, for a balanced Robertsonian translocation 13-14 identified in the father during the fertility assessment. Ultrasound at 8- and 12-Weeks' Gestation (WG) indicated a dichorionic twin pregnancy. At 16 WG, twin-to-twin transfusion syndrome (TTTS) was suspected. The patient was referred to a referral centre and the examination showed an asymmetric intertwin membrane. This prompted the diagnosis of a partially monochorionic pregnancy complicated by stage 2 TTTS. TTTS progressed rapidly to stage 3 and radiofrequency chord ablation of the donor twin was performed at 17 weeks. The patient gave birth prematurely at 31 weeks due to chorioamnionitis. **Conclusion:** Intermediate forms of chorionicity are rare but need to be considered when performing diagnosis of chorionicity. The "T sign" and the "lambda sign" can coexist, and an intertwin membrane having both a three-component section and a two-component section can be observed. If misdiagnosed, a partial monochorionic pregnancy may be followed up as a dichorionic pregnancy, potentially delaying the diagnosis and treatment of monochorionic pregnancy complications such as TTTS. Thus, we highlight the importance of verifying the integrity and composition of the whole intertwin membrane while evaluating chorionicity.

**CLINICAL SIGNIFICANCE OF THE MATERNAL AND VAGINAL INFLAMMATION IN PATIENTS WITH PRETERM PREMATURE RUPTURE OF MEMBRANES**

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**Problem statement:** We sought to identify the clinical significance of maternal and vaginal inflammation in patients with preterm premature rupture of membranes (PROM). **Methods:** A retrospective cohort study was conducted in singleton pregnant women (N=240) who were admitted because of preterm PROM ( $\leq 34$  weeks of gestation). Perinatal outcomes consisted of pregnancy outcomes such as gestational age at delivery, admission-to-delivery interval, spontaneous preterm delivery (sPTD), placental inflammation (histologic chorioamnionitis [HCA] and funisitis), and neonatal outcomes including neonatal respiratory distress syndrome (RDS), bronchopulmonary dysplasia (BPD), necrotizing enterocolitis, intraventricular hemorrhage, and neonatal sepsis were reviewed. Maternal and vaginal inflammation were defined as an elevated CRP concentration ( $\geq 8$  mg/dL) and relatively abundant leukocytes compared to the epithelial cells on Gram-stained vaginal smears, respectively. **Results:** 1) Vaginal inflammation was associated with higher rates of HCA, RDS, and BPD; 2) Patients with maternal inflammation had higher rates of sPTD  $\leq 32$  weeks and  $\leq 34$  weeks than those without. HCA, funisitis, RDS, and BPD were observed more frequently in patients with maternal inflammation; 3) In the context of the presence of maternal inflammation, vaginal inflammation affected adverse perinatal outcomes. However, in patients without maternal inflammation, perinatal outcomes were not different according to vaginal inflammation; 4) Adverse perinatal outcomes associated with maternal inflammation were found in patients with vaginal inflammation, but not in those without. **Conclusion:** Maternal and vaginal inflammation were associated with adverse perinatal outcomes in preterm PROM. Moreover, the impact of maternal inflammation on adverse perinatal outcomes was predominant in the context of vaginal inflammation, and vice versa. These data can give us information on the clinical significance of maternal and vaginal inflammation in patients with preterm PROM to predict the perinatal outcomes.

**FORENSIC EVALUATION OF CLINICAL RISK IN EARLY POSTPARTUM HEMORRHAGE**

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**Problem statement:** Forensic evaluation of complications and malpractices in clinical risk assessment in primary (early) postpartum hemorrhage (PPPH). **Methods:** Through a retrospective study of 51 completed forensic cases of defined PPPH (500 mL blood loss in vaginal delivery, 1000 mL in caesarean section) from the forensic expert's own practice, causes and procedures were evaluated, as well as forensic conclusions about clinical risk and defined complications and malpractices. **Results:** Uterine atony as a cause of PPPH after vaginal delivery was in 24 cases, PPPH due to atony during caesarean section in 11 cases, invasive malplacenta (placenta accreta spectrum / morbidly adherent placenta praevia. PAS/MAPP) in 5, uterine rupture in 10, exsanguination with maternal death in 1 case. 38 hysterectomies were performed, multiorgan failure and consumptive coagulopathy with massive transfusions were recorded in 46/51 cases. The diagnosis of obstetric hemorrhagic shock was recorded only in 2/51 cases, and realistically all patients were in some degree of hemorrhagic shock. Malpractice was defined in 25/51 cases, and an unwanted outcome (complication) despite the procedures undertaken in 26/51 cases of PPPH. In cases of malpractice, late recognition of PPPH and objectification of the state of obstetric shock, as well as inadequate substitution and therapeutic (drug and surgical) procedures are the main reasons for litigation. Inadequately managed medical documentation was a significant risk factor for litigation procedures (90%). **Conclusion:** Minimizing the state of diagnosis of PPPH and hemorrhagic obstetric shock and procedures outside the framework of professional recommendations with inadequately managed medical documentation are factors of clinical risk of forensic implications in PPPH. Disclosure of Interest. None.

**SUCCESSFUL TREATMENT OF MATERNAL SEPSIS DUE TO CANDIDA LUSITANIAE WITH LONG-TERM FLUCONAZOLE ADMINISTRATION**

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**Problem statement:** Description of the first reported Candida lusitanae sepsis during pregnancy with a favorable perinatal outcome. **Methods:** A 40-year-old woman, 26w+4 days in pregnancy, with a history of one caesarian section, presented to our O/G clinic with pain mainly localized in the renal region, fever with chills, hemodynamic instability and desaturation. The patient was quickly diagnosed with septic pyelonephritis, because of ureter obstruction, due to a stone. Pigtail was placed and pus was drained. Candida lusitanae was isolated from blood, urine and vaginal cultures. Fluconazole was administered systematically (800mg/day) until the sepsis subsided and negative cultures were reported. Peros scheme with fluconazole was continued until delivery. Subsequently, the pigtail was removed, and a right nephrostomy was performed. Thorough examinations of the fetus development were carried out throughout pregnancy. The fetus was growing steadily at 7th percentage position. The patient gave birth at 37w +4 days to a healthy female newborn, weighing 2360gr. Two years later, mother and child are in a perfect health condition. **Results:** Complicated pyelonephritis and sepsis caused by Candida lusitanae during pregnancy were successfully treated with a high-dose regimen of fluconazole, instead of the optimum antifungal treatment with liposomal amphotericin B. The therapeutic decision was based on the susceptibility pattern of the fungus and its uncommon characteristic to develop resistance to amphotericin B during therapy. **Conclusions:** Fungal sepsis is extremely rare in pregnancy and postpartum but it is associated with a very high mortality rate. In published cases, Candida albicans accounts for the majority of cases, whereas Candida lusitanae has been implicated in only one published case but with poor pregnancy outcome. Laboratory diagnosis is based on direct microscopy and cultures while conventional and molecular methods are implemented in identification at species level. In our





case, prolonged administration of fluconazole was not associated with adverse maternal and fetal effects, although fluconazole is considered category C/D and cases of intrauterine death have been described. A high index of suspicion for maternal sepsis is needed for early diagnosis and appropriate management, especially in terms of fungal infections.

**Disclosure of interest statement:** The authors declare no conflict of interest.

## PARTIAL MOLAR PREGNANCY WITH LIFE-THREATENING COMPLICATIONS: A CASE REPORT

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**Problem statement:** Partial molar pregnancy, marked by abnormal trophoblastic tissue growth following irregular fertilization, occasionally persists alongside a viable fetus beyond the initial trimester. This unique occurrence, while infrequent, carries an inherent risk of severe maternal and fetal complications. **Methods:** We present a compelling case of a 20-year-old primigravida diagnosed with a partial molar pregnancy during first trimester screening. Despite being advised to undergo invasive diagnostic procedures to confirm the diagnosis and enable genetic testing, the patient opted against it, demonstrating a steadfast commitment to the continuation of her pregnancy. As the pregnancy advanced, anomaly scans conducted at 21 weeks revealed the presence of liver and umbilical cord cysts, introducing new dimensions of concern. **Results:** The clinical trajectory took a critical turn when the patient developed early preeclampsia and HELLP syndrome at 27 weeks, necessitating immediate medical intervention. An emergency cesarean section was performed, leading to the birth of an extremely preterm neonate. The neonate exhibited evident abnormal facies, raising questions about the potential influence of the partial molar pregnancy on fetal development. A comprehensive examination of the placenta unveiled distinctive partial molar features, confirming the earlier diagnosis. Tragically, despite medical efforts, the premature infant's health deteriorated rapidly, and the neonate succumbed to complications within a few days of birth. **Conclusion:** The presented case serves as a poignant reminder of the significance of timely detection and comprehensive management of partial molar pregnancies. Although the continuation of partial molar pregnancies beyond the first trimester is a rare phenomenon, the associated risks of severe complications necessitate ongoing monitoring and follow-up care. The intricate interplay between maternal health, fetal development, and placental abnormalities underscores the need for diligent oversight and tailored interventions to mitigate potential adverse outcomes.

## THE IMPACT OF POST-COVID-19 PANDEMIC IN GESTATIONAL WEIGHT GAIN.

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**Problem statement:** Maternal pre-pregnancy body mass index (BMI) and gestational weight gain (GWG) have an important role in maternal and neonatal outcomes. During the COVID-19 pandemic, sedentary lifestyle has increased. Recent studies show this period was not associated with greater GWG. This study compares the GWG during and after the COVID-19 pandemic. **Methods:** GWG of pregnant women admitted in our hospital for delivery during the first four weeks of January 2021 and 2023 were compared. Missing data, pre-term and twin pregnancies were excluded. **Results:** 314 women (N = 155 COVID and N = 159 Post-COVID) were included. The mean age was 31.1 years-old (30.5 ± 5.6 COVID and 31.6 ± 5.8 Post-COVID), the mean BMI was 25.5 Kg/m<sup>2</sup> (26.0 ± 6.0 Kg/m<sup>2</sup> COVID and 25.1 ± 4.9 Kg/m<sup>2</sup> Post-COVID), and the mean GWG was 13.6 Kg (13.6 ± 5.3 Kg COVID and 13.7 ± 5.9 Kg Post-COVID). There were no statistically significant differences in GWG between both groups (p = 0.900) and the excessive weight gain was similar in both groups (41.3% COVID and 41.1% Post-COVID). **Conclusion:** This research shows the GWG was not affected by the COVID-19 pandemic. However, the percentage of women with excessive BMI and GWG is still very high. Pregnancy is the ideal time for adoption of a healthy lifestyle. Preconception counseling and encouragement for weight reduction, exercise, and diet during pregnancy surveillance is needed.

## COMPLICATIONS OF UNDIAGNOSED COMPLETE PLACENTA PREVIA: A CASE REPORT AND CLINICAL CONSIDERATIONS

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**Problem Statement:** Complete placenta previa is a rare but potentially life-threatening obstetric complication that occurs when the placenta is situated entirely over the internal cervical os. This condition, also known as total placenta previa, poses significant risks to both maternal and fetal health due to the potential for severe hemorrhage during pregnancy, labor, and delivery. Placenta previa occurs in approximately 0.3-0.5% of pregnancies and is often associated with factors such as advanced maternal age, previous cesarean sections, multiparity, and maternal behaviors like smoking and drug addiction. **Methods:** A 36-year-old patient, gravida 2 para 1, presented with her second uncomplicated pregnancy, following a previous cesarean section due to multiple pregnancy. Regular antenatal follow-up was conducted until 33 weeks of gestation when sudden profuse bleeding occurred. Prior to this event, placenta previa had not been detected. The patient had a history of heavy smoking and drug addiction, predisposing her as well to placenta previa. An emergency cesarean section was performed in view of the severe vaginal bleeding. **Results:** Upon admission, the patient exhibited severe anemia with a hemoglobin level of 53 g/l. Immediate intervention through cesarean section was required due to life-threatening bleeding. Post-operatively, her hemoglobin dropped to 39 g/l, necessitating an emergency blood transfusion to stabilize her condition. The surgery revealed complete placenta previa, where the placenta completely covered the cervix. The presence of this condition had not been identified during routine antenatal monitoring. **Conclusion:** This case emphasizes the importance of vigilant antenatal care, particularly in high-risk pregnancies. Undiagnosed complete placenta previa can lead to sudden and severe bleeding, necessitating prompt intervention to avert life-threatening situations. The patient's history compounded her risk for this condition. Clinicians must be cautious in assessing patients' risk factors and consider the possibility of placenta previa even in the absence of overt symptoms. Timely diagnosis and intervention are critical for ensuring maternal and fetal well-being, as highlighted by the need for an emergency blood transfusion in this case.

## PERSISTENCE OF RIGHT UMBILICAL VEIN. TWO CASES AND LITERATURE REVIEW

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The persistence of the right umbilical vein is the most frequent venous anomaly detected before birth, with a highly variable prevalence according to the publications, estimated between 1:250 and 1:1,250. Typically, the right umbilical vein and the left cranial portion of the left umbilical vein atrophy and disappear, making the left umbilical vein the main conduit for blood from the placenta. Various etiological mechanisms have been proposed, some teratogenic and others due to early obstruction of the left umbilical vein. In general, the persistence of the right umbilical vein can occur with intrahepatic drainage (PVUD-I), with a better prognosis, or with extrahepatic drainage (PVUD-E) associated with agenesis of the ductus venosus. The prenatal ultrasound diagnosis of the persistence of the right umbilical vein is usually made during the routine fetal morphological study, in the transverse section in which the abdominal circumference is measured. Weichert and his group reviewed 302 cases and found that 16 (5.3%) were PVUD-E, all associated with structural abnormalities and poor prognosis, due to congestive heart failure related to increased flow in the systemic venous system. In these cases, the percentage of chromosomal patters was 18.8%. The remaining 286 (94.7%) were PVUD-I and of these, 60 (21%) presented some associated anomaly. Only one case of trisomy 18 (0.3%) of the total PVUD-I and (1.6%) of the PVUD-I with associated structural abnormality was recorded. We present two cases of patients diagnosed with PVUD-I. They were two multiparous patients, with low-risk pregnancies, with no medical history of interest. In both cases the diagnosis was made during the morphological ultrasound on the second trimester and not other morphological abnormalities was found so not karyotype study were performed. Both pregnancies had a normal delivery without mother or fetal complications. In conclusion, Based on literature review, after prenatal diagnosis of persistent right umbilical vein, an exhaustive morphological study, which included a fetal echocardiography, is mandatory in order to rule out other structural malformations. Indication for fetal karyotype study has to be individualized.



**GIANT PLACENTAL CHORANGIOSIS IN LATE ONSET DIAGNOSIS OF NON-IMMUNE HYDROPS FETALIS**

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**Background:** Giant placental chorangiosis is a vascular change involving the terminal chorionic villi in the placenta which is rare but often results in serious prenatal complications and adverse pregnancy outcome. Its prevalence is 5–7% of all placentas. A late onset non-immune hydrops fetalis usually has a better outcome with higher live birth rate. **Clinical Case:** Here, we present a case report of late onset diagnosis of non-immune fetal hydrops with giant placental chorangiosis, with poor neonatal outcome. This is the first case report in Lampung Indonesia which was prenatally detected in a 28-year-old G1P0A0 female patient, who presented at 33 weeks of gestation. She never attended antenatal care examination before. Ultrasound examination showed female baby with ascites, hydrothorax, pleural effusion, pericardial effusion, skin edema, 9 mm edema on the fetal scalp. Color Doppler ultrasonography examination showed a large cystic hypochoic circumscribed intra placental mass in the parenchymal placenta. The elected caesarian section and mass removal was performed at 34 weeks of gestation because of fetal distress. The baby died soon after birth within 24 hours. Gross examination revealed a 28 × 18 × 4 cm placenta that weighed 580 g with inserted umbilical cord 43 cm in length. The microscopic appearance of the placenta showed a villous edema, capillary hyperplasia in 15 villous with monomorphic endothelial cells and foamy macrophage. Immunohistochemical examination had not done because of resource limitation. Babygram examination confirmed cardiomegaly with pleural effusion. **Conclusion:** This is the first report of giant placental chorioangiosis with late onset non-immune hydrops fetalis in Lampung Indonesia. A late onset non-immune hydrops fetalis usually has a better outcome with higher live birth rate. In this case the perinatal outcome was poor because of the presence of giant placental chorioangiosis.

**GRAVIDOCARDIAC IN EISENMENGER PHYSIOLOGY: A CASE REPORT**

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Changes in cardiovascular physiology and maternal circulation is expected in pregnancy, and a pregnancy complicated by underlying cardiac disease such as Eisenmenger syndrome is associated with increased risk for maternal and fetal morbidity and mortality. Thus, patients with Eisenmenger syndrome are counseled against pregnancy. However, despite these risks, a few patients deliver successfully with good maternal and fetal outcomes. Even fewer patients with successful feto-maternal outcomes are seen in developing countries. Such is the case of a 29-year old primigravid diagnosed with patent ductus arteriosus, who delivered abdominally in a tertiary hospital in the Philippines. The patient was diagnosed at birth with patent ductus arteriosus and was advised surgical management, but she was lost to follow up despite worsening cyanosis, dyspnea, and other cardiac symptoms throughout the years. She eventually consulted at a tertiary hospital at 31 weeks age of gestation for preterm labor, and was subsequently admitted. The unique feature of this case is that despite having Eisenmenger syndrome, and despite being seen only during her third trimester, the patient was able to deliver a healthy baby without significant feto-maternal complications at 34 weeks age of gestation. The decision to deliver via elective cesarean section allowed for a more controlled environment that minimized unforeseen events that may lead to morbidity such as blood loss and cardiac decompensation. Proper planning and monitoring by the multidisciplinary team especially during the peripartum period aided in preventing any adverse events. Residents and fellows from the following departments were part of preoperative planning and peripartum care: obstetrics and gynecology, anesthesia, critical care, cardiology, thoracocardiovascular surgery, neonatology, and pediatrics. Recent advancement in treatment have resulted in improved maternal and fetal outcomes. A coordinated multidisciplinary team of specialists is essential in the management of these pregnant patients to optimize survival of both the mother and the baby. Nevertheless, preconception counseling for gravidocardiatic patients is paramount in these cases. The aim of this report is to discuss the diagnostic work-up, the treatment and the role of the multidisciplinary team in the management of a gravidocardiatic patient in Eisenmenger Syndrome.

**MANAGEMENT OF ADNEXAL MASS IN PREGNANCY: A CASE SERIES**

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**Background:** Adnexal mass is often found in reproductive-age women, including during pregnancy. It is mostly diagnosed by incidental findings during ultrasound scans in pregnancy. While evidence shows a high rate of resolution and a low rate of clinically relevant pathology, the management is still debatable due to its risk of malignancy, ruptured, torsion, and obstetrics effect. Here we report 5 cases of adnexal mass found in pregnancy. **Case series:** In the first case, a large serous ovarian cyst found in 37 weeks of gestation (wga). With normal fetal growth and activity, caesarean section followed with right salpingo-oophorectomy was performed. In the second case, an ovarian cyst was found in 29 wga. With no symptoms and normal fetal well-being, pregnancy can be continued. The patient underwent cesarean section and right salpingo-oophorectomy at 36 wga due to PPRM. In the third case, the ovarian cyst was found when a patient came to ER at 34 wga due to preterm labor. The patient underwent vaginal delivery, and the ovarian cyst could be further evaluated in polyclinic. In the fourth case, a 17 wga pregnant women complained of mild abdominal discomfort. Laparotomy salpingo-oophorectomy was performed at 18 weeks of gestational age since mucinous cyst was suspected. Incomplete surgical staging was followed as an ovarian yolk sac tumor was found from frozen section, spreading to the peritoneum of cavum douglas. The pregnancy continued up to 39 wga and delivered a well-baby. In the last case, 17 wga pregnant women came to the ER due to abdominal pain. A multilocular cystic ovarian neoplasm suspected endometriosis cyst was found during ultrasound. Intraoperatively seen torsion of ovarian tube, thus right salpingo-oophorectomy was followed. Pregnancy was continued up to 38 wga. **Conclusion:** There is no one size fits all on the approach of adnexal mass in pregnancy cases. It depends on gestational age, maternal symptoms, fetal condition, and characteristics of the mass. In the absence of significant symptoms or high suspicion of malignancy, expectant management is prudent. When surgery is indicated, it is best performed at the second trimester. Risk of malignancy and cyst complications should always be considered.

**CONGENITAL CERVICAL TERATOMA: CASE REPORT**Maria Prat Om, Maria Teresa Castillo, Ana Robles, Carolina Rueda  
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We present one cases of fetal cervical teratoma. Diagnosis was suspected on the ultrasonography and was later confirmed by histological examination. The ultrasound finding of predominantly solid masses in a fetal neck situation is a warning sign for the sonographer of the presence of a cervical teratoma, and even more so in the event of polyhydramnios due to impaired swallowing in the fetus. Antenatal diagnosis of these tumors means that, at the time of delivery, the team of specialists is prepared to act in the event of possible airway obstruction, the most frequent cause of mortality in these neonates. Cervical teratomas occur in 1 in 20,000 to 40,000 newborns, and of all teratomas, 2 to 9% are in the head and neck. Teratomas can be cystic or solid and can measure up to 30 cm in diameter. 90% contain the three germ lines but usually the neural tissue predominates over the other components. We present a case: 39-year-old patient, with a previous healthy child. In control ultrasound at 28 weeks, a 52x52 mm fetal cervical tumor was diagnosed, solid-cystic, without Doppler and other associated fetal malformation, normal fetal growth. Amniotic fluid was high, AFI of 27 mm (polyhydramnios) Negative karyotype and Array studies. It is oriented as a giant cervical tumor, so it is scheduled to cesarean at week 35 by EXIT procedure, with favorable neonatal evolution. Surgical intervention is performed two weeks after birth with good post-surgical evolution. The pathology shows grade 3 immature teratoma. Congenital cervical teratomas are rare tumors that are included within the cervical disorders in the newborn. The short and long-term evolution will depend on the knowledge of the pathology, the opportune diagnosis and the appropriate management that includes the application of the EXIT strategy.

**MANAGEMENT APPROACH OF EARLY ABDOMINAL PREGNANCY TO CONCEIVE IN THE WRONG TIME, WRONG PLACE**Nur Eulis Pujiastuti Nahdiyati<sup>1</sup>, M. Adya Dilmy<sup>1,2</sup><sup>1</sup>Obstetric and Gynecology, Cipto Mangunkusumo Hospital, Jakarta, Indonesia<sup>2</sup>Cipto Mangunkusumo Hospital, Fetomaternal medicine Division, Jakarta, Indonesia

**Problem statement:** Abdominal pregnancy is a rare yet life threatening condition with high morbidity and mortality rate. It consists only 1% of all ectopic pregnancy case. The management approach of abdominal pregnancy is based on the gestational age as it can be divided into early and late abdominal pregnancy, based on the placental growth and vascularization. Due to the rarity of this case, there has been no guideline on the management of abdominal pregnancy. In this case report we provided a simplified management algorithm for abdominal pregnancy. **Methods:** Case report. **Results/case:** A 20 years old woman, primigravida, suspected with abdominal pregnancy came to emergency room with hypovolemic shock with a complain of severe abdominal pain. She has undergone CT angiography for pre-operative evaluation and the feeding arteries were identified. An emergency surgery was done and the mass was evacuated. The patient experienced no complication during post operative hospitalization and 6 months follow up. **Conclusion:** The diagnosis and management of abdominal pregnancy can be challenging and no validated guideline is currently available. A comprehensive pre-operative assessment is needed to provide suitable management for the patient.

### PRENATAL DIAGNOSIS OF INTRAABDOMINAL FETUS IN FETU IN RESOURCE-LIMITED SETTING

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**Problem statement:** Fetus in fetu (FIF) is a rare congenital malformation in which a parasitic monozygotic twin enclosed within a capsule is found inside the body of its host twin. FIF is asymptomatic prenatally, so the diagnosis is usually made postnatally in children with abdominal mass. By that time, the mass effect to adjacent organs has already caused significant morbidity for the host twin. A presumptive diagnosis can be made by ultrasonography, but magnetic resonance imaging (MRI) is the ideal imaging modality to clearly recognize the fetiform mass for a more accurate diagnosis. However, MRI is often not available in resource-limited settings. In this report, we describe a case of intraabdominal fetus in fetu identified by prenatal ultrasonography. **Methods:** The patient's data were collected during the course of ongoing patient care, and the patient was followed up until two months after birth. Written informed consent was obtained from the parents for publication of this case report. **Results:** A 33-year-old, gravida 4, para 3 woman was referred for routine obstetric ultrasound scan at 38-39 weeks' gestation. The antenatal sonography revealed the presence of a 9 – 10 cm mass and fluid collection within the fetus's intra-abdominal cavity. The mass consisted of a sketch of vertebrae columns, two inferior extremities, abdomen, and thorax with undifferentiated organs inside. The fetus was delivered on suspected diagnosis of FIF. Postnatal diagnostic imaging workup was performed using sonography and computed tomography (CT). Surgical excision and a subsequent pathological evaluation confirmed the presence of an acardiac and anencephalic fetus wrapped in its capsule, with two lower limbs, upper limb buds, abdomen, thorax, and palpable vertebral columns, supporting the diagnosis of FIF. Histopathology report showed dermal tissue, sebaceous tissue, muscle fibers, fibrous tissue, and dilated vessels, with no evidence of immature elements or malignancy. The infant had an uneventful recovery and was discharged on the eighth day after surgery. The patient was doing well at two months of follow-up. **Conclusion:** Accurate prenatal diagnosis of fetus in fetu can be made with ultrasound in resource-limited settings where MRI is not available.

### DOUBLE SCREENING TEST IN PREGNANT CARRIERS OF BETA HETEROZYGOUS FORMS OF THALASSEMIA

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**Background:** Compare the results of a double screening test (PAPPA, beta-hCG) in pregnant carriers of beta heterozygous forms of thalassemia with a physiological pregnant women. **Methods:** Pregnant women of both groups underwent ultrasound examination using an abdominal sensor on a GE Voluson E8 expert class device and a double screening test to detect chromosomal pathologies (12-13.4 weeks). **Results:** The results of a double screening test in all pregnant carriers of beta-heterozygous forms of thalassemia were overestimated. While the ultrasound data using an abdominal sensor on an expert-class device did not reveal any markers of chromosomal pathologies, that is, NT measurements within 1.5-2mm, and NB within 2.5-3.0mm. Additionally, all four pregnant women underwent a NI PT

test, results with a low probability of chromosomal pathologies. **The results** of the control group without thalassemia carriers were as follows: 19-results with a low probability of chromosomal pathologies. 1 result - a borderline result with the probability of a chromosomal anomaly. A pregnant woman with a borderline result underwent amniocentesis, the results of which did not reveal the presence of chromosomal abnormalities. All children born from mothers carrying beta-heterozygous forms of thalassemia were born healthy, without any chromosomal pathologies. **Conclusion:** In pregnant carriers of beta-heterozygous forms of thalassemia, the results of double screening are uninformative, since the probability of obtaining false negative results is higher than in physiologically normal pregnant women.

## GYNECOLOGICAL ONCOLOGY

### SURVIVAL RATE, RECURRENCE RATE AND COMPLICATION RATE OF ROUTINE APPENDECTOMY FOR PATIENTS WITH BORDERLINE AND MALIGNANT MUCINOUS OVARIAN TUMOR: A SYSTEMATIC REVIEW AND META-ANALYSIS

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**Problem statement:** To determine the survival rate, recurrence rate and complication rate among patients diagnosed with borderline and malignant mucinous ovarian tumor who underwent complete surgical staging with appendectomy. **Methods:** Eligibility criteria: A search of published literature was conducted in the electronic databases of MEDLINE (PubMed), Cochrane and Google Scholar through 2000 to 2022, using a search strategy based on the PIO framework. **Information of sources:** All studies retrospective studies with histopathologic diagnosis of borderline or malignant Mucinous Ovarian Tumors with subjects who underwent appendectomy during primary surgery including encompassing data on survival rate, recurrence rate and/or complication rate that matched the terms set by the researchers were retrieved. Risk of bias: Guidelines for Cochrane Collaboration were used to assess the risk bias. **Synthesis of results:** Review Manager Version 5.3 (Revman 5.4.1) was used by the researcher to perform the systematic review and meta-analysis of included studies. **Results:** There were eight retrospective studies included in this study. The random interval for survival rate is 64.9 to 99.7% with a P-value of 0.1. The prediction interval for recurrence rate is 0 to 100% with 95% confidence interval. The odds of complications occurring is less than 0.69 to 2.99 times with 95% confidence interval with mean effect size is 0.083 with a 95% confidence interval of 0.027 to 0.23. **Conclusion:** The mean prevalence of abnormal histology of the appendix in patients diagnosed with borderline and malignant mucinous ovarian tumors and underwent appendectomy during primary surgery is 3-13%. There is no statistically significant difference in survival rate of patients who were diagnosed with borderline and malignant mucinous ovarian tumors with or without appendectomy during primary surgery. The prediction interval for recurrence rate is 0 to 100% with 95% confidence interval. There is no significant difference between the rate of complications in patients who underwent appendectomy and those without.

**Keywords:** appendectomy, borderline mucinous ovarian tumors, malignant mucinous ovarian tumors, MOT, mucinous ovarian tumors, MOT

### FERTILITY PRESERVATION: ANALYSIS IN A REPRODUCTION UNIT OF SPANISH TERTIARY REFERRAL HOSPITALWHAT CAN BE DONE TO IMPROVE?

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**AIM:** To evaluate the indications, epidemiological characteristics and results obtained in patients undergoing fertility preservation (FP) cycles treated at the Medicine Reproductive Unit of a tertiary referral hospital from January 2013 to December 2022, in order to detect improvements that could be introduced to optimize the quality of assistance. **MATERIAL AND METHODS:** Longitudinal retrospective observational study. We included all patients (n=150) treated in the Reproduction Unit of a third level hospital between April 2013 and December 2022 to which FP cycles were indicated. Data was obtained from the HP-CIS electronic medical record and the Reproduction Unit's specific program: SARA. **RESULTS:** A total of 150 patients with 190 cycles were included. They were subdivided in 3 groups depending on the indication: oncological cause, non-





oncological cause and gender dysphoria. The mean age was higher in the gender dysphoria group (18,253,46 vs. oncological cause: 29,145,39 and non-oncological cause: 29,53 5,54). The completion of a second cycle of FP was higher in the non-oncological cause group (29,3% vs oncological cause: 8,33% and gender dysphoria: 15%). Duo stim cycles were only necessary in the oncological cause group, accounting for 18,05% of the patients. A total of 1393 oocytes were cryopreserved. To date, the oocytes of 14 patients (9,33%) have been devitrified, and the rest remain stored. Of the 14 patients who devitrified their oocytes, 1 (7,14%) is currently pregnant.

**CONCLUSIONS:** FP is becoming increasingly relevant in clinical practice, with oocyte vitrification being the choice technique. This study has allowed us to assess improvements in our unit. As our data and many authors suggest, the indication for FP may be related to the derived success rates. More randomized clinical trials are needed to obtain consistent data regarding the health of children born through this technique. It is important to inform patients that FP does not guarantee the birth of a live newborn at home, but it does increase the chances.

**KEY WORDS:** Fertility preservation, oocyte vitrification, oocyte cryopreservation.

### BREAST CANCER DURING PREGNANCY: AN UNEXPECTED EVENT

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**Problem statement:** Breast cancer is one of the most frequently diagnosed cancers during pregnancy and its incidence appears to have been increasing during the last 20 years. Possible explanations are the fact that breast cancer's global incidence is increasing and the current tendency of women to delay the decision to get pregnant. In addition, the physiological changes that occur in the breast during pregnancy and lactation make the physical examination more difficult, as well as the interpretation of the findings of complementary diagnostic tests. **Methods:** To report a clinical case of a breast cancer diagnosed during pregnancy. **Results:** A 36-year-old pregnant woman, gravida 3, para 2, at 33 weeks of gestation, was referred to the Obstetrics and General Surgery consultations because she noticed the appearance of a nodule in the left breast and left axillary lymphadenopathy, with 2 weeks of evolution. The patient underwent an initial study with breast ultrasound, which revealed the presence of multiple nodules in the upper quadrants of the left breast, suggestive of multifocal neoplasia. The histologic result showed a grade 2 no special type invasive ductal carcinoma and the involvement of the lymph node by the invasive carcinoma. The patient started corticosteroid therapy to induce fetal lung maturity and labor was induced at 35 weeks and 5 days, resulting in an apparently healthy newborn weighing 2650g. After birth, the patient completed staging and it was decided to undergo neoadjuvant chemotherapy, followed by surgical treatment with Madden modified radical mastectomy. The definitive histological result of the surgical specimen showed mixed ductal-lobular carcinoma with no lymph nodes involved by the carcinoma; hormone receptor positive and HER2 negative. The patient was proposed to radiation and hormone therapies. **Conclusion:** With this case, we intend to emphasize that an adequate breast self-examination, as well as a high level of clinical suspicion are essential for the diagnosis of this pathology during pregnancy. No one expects to be diagnosed with breast cancer during pregnancy and fortunately, nowadays, its incidence remains low (15-35:100.000 pregnancies).

### HIGHER BODY MASS INDEX IS RELATED WITH SEVERE CHEMOTHERAPY INDUCED PERIPHERAL NEUROPATHY IN OVARIAN CANCER PATIENTS

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**Objective:** Chemotherapy-induced peripheral neuropathy (CIPN) is a debilitating side effect of cancer treatment, particularly among patients receiving paclitaxel and carboplatin for ovarian cancer. While several factors have been associated with an increased risk of developing CIPN, the potential role of body mass index remains

unclear. This study aimed to investigate the relationship between being overweight and the onset and severity of CIPN in a cohort of South Korean ovarian cancer patients treated with paclitaxel and carboplatin. **Methods:** The study was conducted retrospectively at a single tertiary hospital in South Korea from March 2013 to February 2022. Forty-two individuals diagnosed with epithelial ovarian cancer and who had developed neuropathic symptoms following chemotherapy were included. Patient characteristics, laboratory findings, and neurological examinations were analyzed. **Results:** There were no statistically significant differences between normal weight and overweight patients for most neuropathic symptoms, except for a higher incidence of large fiber deficit in overweight patients compared to normal weight patients. The mean total neuropathy score was higher for the overweight group than that of the normal weight group. The time to onset of peripheral neuropathy after chemotherapy was shorter in the overweight group. **Conclusion:** The study found that obesity may be associated with the severity and onset of CIPN in ovarian cancer patients receiving paclitaxel and carboplatin chemotherapy. However, no significant correlation was found between the severity of CIPN and various laboratory findings, suggesting that BMI might be an independent risk factor for CIPN. Further studies with larger sample sizes are needed to validate these findings.

### RECURRENT VULVAR CANCER AFTER TREATMENT WITH NEOADJUVANT CONCURRENT CHEMOTHERAPY AND RADIOTHERAPY FOLLOWED BY RADICAL VULVECTOMY

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This is the case of a 62-year-old female with a history of chronic hypertension and diabetes mellitus type II who presented with advanced vulvar cancer who was initially treated with neoadjuvant concurrent chemotherapy and radiotherapy in coordination between private hospital and center of cancer as per the patient followed by radical vulvectomy and reconstruction of local vulvar flap on Aug 2022, (stage and histology not available at the time of the admission of the patient) and a series. Four months later, she presented to the oncology department with severe vulvar pain, difficulty and burning on urination, bleeding, and foul-smelling vaginal discharge from vulva, her pain is uncontrollable on her current medication. Examination revealed Extensive local edema, ulceration as well as induration and masses consistent with both recurrence and radiation therapy necrosis involving the whole vulva from the mons pubis to both labia minora and majora all the way to the perineum extending into the vagina by palpation. Imaging studies CT scan showed a large necrotic vaginal mass Figure1, MRI pelvis showed mass measures 8.8 x 6.5 x 2.8 cm,thick irregular peripheral enhancement. with secondary involvement of the urethra, extending to the right bladder base but no involvement of the rectum or anal sphincter, No enlarged pelvic or inguinal lymph nodes. Figure2-3, The patient stayed in the hospital for 9 days and her condition improved with pain management control. Medical oncology advised her to follow up with our facility and bring reports and pathology slides from the private hospital. The patient and her family chose to continue follow-up with the private hospital. **Discussion:** Recurrent vulvar cancer occurs in an average of 24% of cases after primary treatment after surgery with or without radiation. Most recurrences occur locally near the original resection margins or at the ipsilateral inguinal or pelvic lymph nodes.; distant recurrences were found only in 15% of patients. Most recurrences occur within 2 yr of initial surgical management, Surgical excision is the mainstay of treatment for recurrent carcinoma of the vulva. **Conclusions:** Continue to advocate for multidisciplinary team approach in management of complex cases.

### INGUINAL LYMPH NODE METASTASIS AS SOLE MANIFESTATION OF OVARIAN / FALLOPIAN TUBE CANCER: A REVIEW OF THE LITERATURE

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**Background:** Ovarian/fallopian tube cancer is the deadliest gynecological malignancy. Most cases are diagnosed at an advanced stage, typically after the cancer has spread to the peritoneal cavity, or via lymphatic drainage. The presence of distant lymph node metastasis in the inguinal region is a rare manifestation of lymphatic metastasis. Since the 2014 FIGO staging revision, ovarian cancer patients with inguinal metastasis are classified as stage IVB. However, the clinical significance of such an upstaging remains under investigation. **Materials and Methods:** Both Scopus and PubMed / MEDLINE databases were utilized, by inputting the following combination of keywords: (Ovarian cancer OR Fallopian tube cancer) AND (Inguinal lymph node AND Metastasis) on June 31st, 2023. The time of publication and text availability were not considered when searching the databases and all relevant articles in English were initially accepted. **Results:** Twelve patients from equal number of case reports were included in our review. Mean age of diagnosis was 56,5 years old, with 3 out of 12 women to be premenopausal at the time of diagnosis. Regarding the histologic type, 67% (8 out of 12) of the cases were serous adenocarcinoma and 4 patients (33%) were diagnosed with fallopian tube malignancy. All patients, except one, were treated with primary cytoreductive surgery. In all patients optimal cytoreductive surgery was achieved. All patients, except one, received adjuvant chemotherapy. Regarding the disease-free survival, mean DFS is calculated approximately at 2 years (23,1 months). **Conclusion:** Inguinal lymph node metastases from ovarian / fallopian tube malignancy as initial site of metastasis is extremely rare. However, patients with inguinal masses should be investigated for ovarian / fallopian malignancy. Further investigation ought to be conducted to enlighten the pathway and the oncological significance of inguinal lymph node metastasis in ovarian cancer patients.

## GYNECOLOGY

### IRANIAN TRADITIONAL MEDICINE FOR ENDOMETRIOSIS TREATMENT

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**Problem statement:** Endometriosis, a condition characterized by the presence of endometrial tissue outside the uterine cavity, poses significant challenges to diagnosis and treatment. Conventional therapies, including surgical procedures and hormonal interventions, may offer limited relief. This study explores an integrated model combining modern medicine and Iranian traditional medicine for the diagnosis and treatment of endometriosis. **Methods:** A 31-year-old female patient with persistent abdominal and back pain, previously diagnosed with an ovarian cyst, underwent conventional treatments, including contraceptive pills, with limited success. Subsequent tests revealed elevated FSH (follicle-stimulating hormone) and low AMH (anti-Müllerian hormone) levels, indicative of severe endometriosis. Consultation with multiple gynecologists recommended laparoscopy and in vitro fertilization (IVF). In the pursuit of alternative options, the patient turned to Iranian traditional medicine. The traditional treatment regimen encompassed six key health factors: Tailored diet addressing mood and elimination of soda foods. Regular exposure to fresh air. Adequate sleep duration and quality. Stress reduction and fostering positive thoughts. Engaging in physical activity and scheduled walking. Adoption of a high-fiber diet with natural laxative properties. Simultaneously, the patient was advised to use the Rosasic vaginal pack, a novel treatment developed by the researchers. This pack is derived from Abu Jahl watermelon, employing a fibrous carrier for controlled drug release. Monthly application for two weeks post-menstruation over an eleven-month period was recommended. **Results:** After nine months, a notable improvement in FSH and AMH levels was observed (FSH=4.5, AMH=0.2). Hysterosalpingography (HSG) revealed one fallopian tube with unobstructed passage, while the other remained obstructed. Notably, after eleven months of treatment, the patient achieved pregnancy. **Conclusion:** This case study underscores the potential of traditional medicine in developing non-invasive interventions for endometriosis. By adopting an integrative approach, patients may experience enhanced quality of life and an increased likelihood of successful pregnancy. This research contributes to expanding the spectrum of therapeutic options available for female endometriosis patients.

**Keywords:** endometriosis, integrated medicine, Iranian traditional medicine, fertility treatment

### MISCARRIAGE TREATMENT BASED ON IRANIAN TRADITIONAL MEDICINE

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**Problem statement:** Induced abortion is the termination of fertility before the fetus achieves viability, by medical or surgical methods. Due to the many complications of surgical miscarriage, including complications of anesthesia, hospitalization, the risk of uterine perforation, and other acute and chronic complications, the patient feels the need to use non-invasive methods to terminate the pregnancy. The purpose of this study is to investigate the effectiveness of Iranian traditional medicine in removing pregnancy remnants in aborted fetuses for any reason with non-invasive methods. **Methods:** A 45-year-old female patient with G(Gravid) 6L(Living)4D (Dead)1(NVD\*1), C/S\*4 was the case. Performing twice times of ultrasonography of the uterus and ovary approved the resulted in (Biparietal diameter) BPD of 29mm which was attributed to 15 weeks, (Femur length) FL of 21mm which was attributed to 15 weeks and 2 days, no existence of fetal heart rate (FHR), and no cardiac activity of the single fetus in the uterus for this patient. Then dilation and curettage were prescribed for the patient by a gynecologist. After this surgery, ultrasonography of the uterus and ovary showed retained products of conception (RPOC). The patient came with abnormal uterine bleeding and good general condition. In this stage, she is recommended to use the Iranian traditional medical measures. The traditional treatment included the following items:

- 1- Dry-cupping on the pubic area and back of the leg
- 2- Rubbing oil on the abdomen and waist area 3 times a day
- 3- Everyday walking times, simultaneous with Rubbing oil on the abdomen and waist area
- 4- 20 cc of puree-diluted food substance based on land use planning. This food drug contains a certain dosage of *Lepidium sativum* (seed), Cinnamon stick, and underground stem of Ginger and it was taken orally every 8 hours.

**Results:** After 20 days, ultrasonography of the uterus and ovary was performed. No indication of PROC was found in the ultrasonography result.

**Conclusion:** This case study opened new windows toward non-invasive treatment of PROC. This approach will lead to improving a female healthy lifestyle by avoiding unnecessary surgeries, especially in miscarriage cases.

### RELATIONSHIP BETWEEN THE TYPE OF HORMONE REPLACEMENT THERAPY AND INCIDENCE OF MYOCARDIAL INFARCTION AND STROKE IN KOREA

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**Problem statement:** To investigate the relationship between hormone replacement therapy (HRT) types and myocardial infarction (MI) and stroke incidence in postmenopausal women in Korea. **Methods:** This nested case-control study used data from the National Health Insurance Service database. Among the women aged  $\geq 50$  years and menopausal between 2004 and 2007, MI and stroke incidence up to 2017 was analyzed in 36,446 women using or having used HRT for 1 year and in 36,446 women who did not use any HRT for more than 1 year. HRT types and duration were classified into three categories. **Results:** With HRT initiation in women  $\geq 50$ s, MI risk (MIR) was lower with all types of HRT. When using estrogen-progestogen therapy (EPT) and estrogen-only therapy (ET) in 50s, EPT in 60s, and tibolone in 70s, Stroke risk (SR) was decreased. Except for the using EPT for 3-5 years, MIR decreased when using any HRT. SR was decreased when using tibolone for  $\geq 5$  years or when using EPT and ET for 1-3 or  $\geq 5$  years. **Conclusions:** In Korean women  $\geq 50$ s, EPT decreased MIR and SR; for all ages, any HRT for 5 years showed lower MIR and SR. After the WHI study, HRT use decreased, and different results with previous studies may have occurred because HRT was prescribed only for those with a low risk.

### OVARIAN ENDOMETRIOMA MASQUERADING AS TERATOMA: A RARE CASE OF NON-TERATOMATOUS OVARIAN OSSIFICATION

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Whilst ossification is commonly found in ovarian teratomas, it is rarely reported in association with other non-teratomatous conditions of the ovary. A few case reports have described ovarian ossification in various neoplastic and non-neoplastic lesions of the ovary, including endometriomas, cystadenomas and endometriotic carcinoma. We report a case of a 33-year-old woman who presented with a 2-year history of dysmenorrhea and pelvic pain. Ultrasonography done revealed bilateral ovarian cystic masses containing ground-glass echogenicity and one had an echogenic rim calcification. Failing medical treatment with Dienogest, the patient underwent a laparoscopic cystectomy. Laparoscopy revealed a left endometriotic cyst and a 6cm right ovarian cystic lesion with a stony hard cyst wall. The cyst had muddy yellow- and chocolate-coloured contents suggestive of endometriosis. The hardened cyst wall was removed piecemeal together with the rest of the cyst wall in a laparoscopic sac. Final histology revealed an endometriotic cyst with focal osseous metaplasia. The patient was discharged well on post-operative day 1 and subsequently had complete resolution of her pelvic pain. Various hypotheses have arisen with regards to the pathogenesis of osseous metaplasia. It is suggested that this phenomenon may be in response to repeated inflammatory insult from underlying endometriosis. As non-teratomatous ovarian ossification can be present in both benign and malignant conditions, its presence does not have significant prognostic importance. While conservative management of such ovarian lesions may be offered for focal calcification, complete surgical excision is suggested as the treatment of choice for cases with extensive calcification, especially in symptomatic patients.

### EXTRAUTERINE UNDIFFERENTIATED UTERINE SARCOMA ARISING FROM BLADDER ENDOMETRIOSIS IN POSTMENOPAUSAL WOMEN: A CASE REPORT

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**Problem statement:** Endometriosis (EMS) is a rare condition in postmenopausal women. The transition from EMS to malignancy is as low as 1%, among them, Endometrial stromal tumor (EST) occurs at 0.7%. Undifferentiated uterine sarcoma (UUS) is a type of EST and accounts for 25% of EST. Extrauterine UUS is an exceptionally rare occurrence with only a few reported cases. In this study, we present the case of a woman who had a history of surgery with extrauterine deep infiltrated endometriosis (DIE) and was diagnosed with UUS originated from bladder after surgical menopause. **Methods:** Retrospective case report. **Results:** In September 2022, 55-year-old woman, who has surgical menopause after exlo-laparotomy in 2015 with DIE that involves bladder, sigmoid colon, and peritoneum, visited the hospital due to a growing huge pelvic mass penetrating the abdominal skin despite of the embolization and GnRH agonist. On the blood test, tumor markers including CA125 were elevated. Preoperative imaging (PET, MRI) tests were performed and a giant 21-cm pelvic mass originating from the bladder was observed to suggest a malignant tumor. The patient underwent the cytoreduction surgery and was histologically diagnosed as UUS. Planned systemic chemotherapy, but she died of small bowel perforation and pan-peritonitis in March, 2023. **Conclusion:** So far, no UUS cases have been reported in the bladder. This case is the first case report of UUS in the bladder originating from EMS in postmenopausal women.

### SEXUAL FUNCTION EVALUATION OF FEMALE HEALTHCARE WORKERS AGE 20-49 YEARS IN A TERTIARY HOSPITAL IN THE PHILIPPINES DURING THE COVID-19 PANDEMIC USING THE FSFI QUESTIONNAIRE

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**Problem statement:** The study aimed to evaluate the effect of the COVID-19 Pandemic on the sexual function, to compare the sexual function of female patients 10 months before and 10 months in the COVID-19 Pandemic, and to determine the current desire for pregnancy and use of any form of contraception among female healthcare workers age 20-49 years in a tertiary hospital in the Philippines. **Methods:** This is a cross-sectional survey study using online administration of the Female Sexual Function Index (FSFI) Questionnaire. Assuming a margin of error of 0.05, confidence level of 80%, the required sample size to run a simple binary logistic regression is 63 from a population of 100. Non-probability purposive sampling method was employed. **Results:** Twenty-seven (27%) percent of the participants were found to have sexual dysfunction during the COVID-19 Pandemic. Twenty-two out of the 59 participants were desirous for pregnancy before the COVID-19 Pandemic but 4

out of the 22 declared no desire for pregnancy in the present time. Seventeen out of the 59 participants used of any form of contraception before the COVID-19 Pandemic. Among the study population, there was significant decrease in the domain of arousal ( $p = .001$ ), lubrication ( $p = .001$ ), orgasm ( $p = .001$ ) and satisfaction ( $p = .001$ ) during the COVID-19 Pandemic. **Conclusion:** Among female health care workers in a tertiary hospital in the Philippines between the ages 20-49 years, there was a 27% prevalence of female sexual dysfunction during the COVID-19 Pandemic with significant decrease in sexual arousal, lubrication, orgasm and satisfaction.

**Keywords:** Female sexual dysfunction, reproductive age, health care workers, COVID-19 Pandemic

### THE QUALITY OF LIFE OF WOMEN WITH UTERINE FIBROIDS

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**Problem statement:** To compare the quality of life of patients with uterine fibroids (symptomatic/asymptomatic) and healthy women.

**Methods:** We used clinical-anamnestic, ultrasound methods, a questionnaire method using a validated questionnaire "The Short Form-36 Medical Outcomes Study (SF-36)", a statistical method (calculation of mean values (M), standard deviation ( $\sigma$ ), Fisher's criterion ( $p < 0.05$ )). 71 women of reproductive age (18-49 y.o.) were included in the research. There were 3 groups of patients: I – the main ( $n=16$ ) – women with symptomatic uterine fibroids (increased volume, duration of menstruation, dysmenorrhea, dysuric phenomena); II – comparison group ( $n=19$ ) – patients with asymptomatic leiomyoma; III – control group ( $n=36$ ) – healthy women. Uterine fibroids (F3-F6) were confirmed by pelvic ultrasound; there was no indication for surgical treatment. In accordance with the instructions for data processing SF-36, the following were carried out: a) analysis of general physical (PH – physical health) and general mental well-being (MH – mental health); b) assessment of the sum of indicators on both scales (the norm is 100 or more). **Results:** The indicator "general physical well-being" (PH) ( $M \pm \sigma$ ) in women with symptomatic and asymptomatic uterine fibroids ( $51 \pm 7$  (I) &  $52 \pm 6$  (II) points ( $p < 0.05$ )) was lower, than in healthy women (III) –  $56 \pm 4$  points ( $p < 0.05$ ,  $p < 0.05$ ). The indicator "general mental well-being" (MH) ( $M \pm \sigma$ ; points) ( $42 \pm 12$  (I) &  $48 \pm 12$  (II) &  $47 \pm 10$  (III)) was similar in all groups ( $p < 0.05$  for all comparisons). The value of the sum of PH and MH in women with symptomatic uterine fibroids (I:  $93 \pm 15$  points) was lower than in healthy women (III:  $104 \pm 11$  points) ( $p < 0.05$ ), and below the minimum normal value (SF-36: 100 points). In patients with asymptomatic uterine fibroids, the PH+MH index (II:  $101 \pm 15$  points) did not differ from that in healthy women ( $p < 0.05$ ). **Conclusion:** The presence of uterine fibroids, regardless of the clinical manifestations of the disease, leads to a decrease in the level of physical comfort ("general physical well-being") of women compared with healthy women. Patients with symptomatic uterine fibroids have a low level of quality of life.

### EXPRESSION OF THE LEUKEMIA INHIBITING FACTOR IN WOMEN WITH DIFFERENT ENDOMETRIAL THICKNESS

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**Problem statement:** To study endometrial expression of leukemia inhibitory factor (LIF) in women with "thin" (7 mm) and normal ( $\geq 7$  mm) endometrial thickness. **Methods:** There were 3 groups of patients (20-40 y.o.): I (main) ( $n=52$ ) – with a "thin" endometrium, II (comparison) ( $n=62$ ) – with a normal endometrial thickness (women of both groups with a history of reproductive dysfunctions of unknown reason); III (control) ( $n=16$ ) – healthy women. A biopsy of the endometrium, puncture of peripheral vein on 6-8th days after ovulation (LH 6-8) were performed. Following methods were used: ultrasonic (M-echo value before ovulation), immunohistochemical (endometrial expression of LIF) and chemiluminescent (the level of estradiol (E2), progesterone (P) in the blood (LH 6-8)). **Results:** Women had an ovulatory cycle ( $P \geq 16.1$  nmol/l), similar E2/P ( $p < 0.05$  for all indexes). Decreased LIF expression in the luminal epithelium (38%;  $n=17$  of 45 endometrial samples) and in the glands of the endometrium (33%;  $n=17$  of 52) occurred significantly more often in "thin" endometrium than in control group (6,25% ( $n=1$  of 16); 6,25% ( $n=1$  of 16), respectively) and in II group with normal endometrial thickness (15,5% ( $n=17$  of 45); 19% ( $n=12$  of 62), respectively) ( $p < 0.05$ ). The cases with pronounced/reduced LIF expression in the luminal epithelium and endometrial glands were similar in women from comparison and control groups ( $p < 0.05$ ). We observed decreased LIF expression in the endometrial stroma significantly more often in women with a history of





reproductive dysfunction, than in healthy women: I – 54% (n=28 of 52) vs II – 63% (n=39 of 62) vs III – 12, 5% (n=2 out of 15) (p<0.05), but without differences between I and II groups with «thin» and normal thickness of the endometrium (p<0.05). **Conclusion:** The «thin» endometrium, most likely, is a predetermining factor for the decreased LIF expression in the luminal epithelium and endometrial glands. In women with a history of reproductive dysfunctions, the number of women with reduced LIF expression in the endometrial stroma, regardless of the thickness of the endometrium, is significantly more common than in healthy women.

#### DOES ENDOMETRIOSIS AFFECT FEMALE SEXUAL FUNCTION?

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**Aim:** Endometriosis is a benign, estrogen-dependent inflammatory disease that affects approximately 10% of women of reproductive age. Symptoms such as dysmenorrhea, dysgesia, dysuria, subfertility, chronic pelvic pain and dyspareunia can be seen in this disease. These symptoms can affect women physically, socially, spiritually and sexually. The aim of this review is to determine the effect of endometriosis on female sexual function. **Methods:** This is a review of literature. **Results:** Endometriosis (especially if there is dyspareunia and chronic pelvic pain) negatively impact several domains of sexual function (desire, satisfaction, orgasm, pain). **Conclusions:** Women with endometriosis report significantly more sexual dysfunction compared to healthy women. Deeply infiltrating endometriosis may have significantly more sexual dysfunction than other forms of endometriosis. For this reason, it is very important to evaluate sexual function in women with endometriosis and to apply treatment and care services with a multidisciplinary team in this direction.

#### ADNEXAL MASS DURING PREGNANCY – WHAT IS THE BEST APPROACH?

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**Problem statement:** The incidence of adnexal masses detection during pregnancy is increasing due to the large use of antenatal ultrasound. Most masses are benign, asymptomatic and about 70% resolves spontaneously during pregnancy. However, some require surgical removal due to symptoms, risk of torsion or suspicion of malignancy. Decisions regarding expectant versus surgical management are dependent on multiple factors and may be challenging. **Methods:** Case report and overview discussion of clinical management approach. **Results:** We report a case of a 23-year-old primigravida, with obesity class II, in which a right adnexal simple cyst with 10.3 x 7.9 x 8.9 cm was detected during routine prenatal ultrasound at 20 weeks and 5 days of gestation. One week later, an MRI (Magnetic Resonance Imaging) was performed confirming the presence of a simple cyst with 11.4 x 8.4 x 11 cm with benign features. At that time, the patient was asymptomatic, so expectant management was decided. With pregnancy progression, adnexal mass size increased. At 34 weeks and 4 days gestation she was admitted to the hospital for abdominal pain and elevated inflammatory parameters. During hospitalization, clinical and analytical improvement was observed, and another MRI was performed at 35 weeks and 4 days with no signs of vascular compromise and a size mass of 17.7 x 7.2 x 9 cm. Vaginal delivery occurred at 37 weeks with a healthy newborn. Six weeks postpartum an ultrasound was performed showing decreased adnexal mass size with 3.6 x 3.7 x 3.7 cm with simple serous cystadenoma features and negative tumor markers (CA 125, CEA). **Conclusion:** The decision to surgical approach an adnexal mass during pregnancy is often difficult. In this case, an expectant management was chosen with favorable perinatal and maternal outcomes. There is a lack of consensus in international recommendations for adnexal masses management, mainly if greater than 10 cm. Some experts suggest surgical intervention as the best approach, others postponing surgery after delivery, if clinically stable. However, as described above, the ultimate decision for when to intervene depends on expert clinical opinion, balancing the risks and benefits for each patient.

#### CONSERVATIVE MANAGEMENT OF CORNUAL PARTIAL HYDATIDIFORM MOLE RESIDUAL TISSUE. CASE PRESENTATION

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#### Problem statement:

Partial hydatidiform mole is a rare tumor included in the spectrum of gestational trophoblastic disease. The suspected diagnosis of an abnormal pregnancy, respectively, partial hydatidiform can be guided by sonographic markers like hydropic, enlarged placenta with high velocity and low impedance flow and the presence of a well-formed but growth-retarded fetus. **Case:** A 29 years old gravida, 19 weeks of gestation, with a history of three first trimester miscarriages, presents for her monthly checkup. The pregnancy was classified as cornual at 7 weeks of gestation and monitored according to national protocols. The ultrasound examination revealed a fetus with absent heart rate, with symmetric intrauterine growth restriction. The patient underwent a medical induced abortion with following uterine instrumental control. The placental residual tissue was of abnormal adherence so it was sent for histopathological exam. The result indicated partial hydatidiform mole. The next steps were taken with the agreement of the patient and the intention of preserving the uterus intact. Computer tomography examination and ultrasound examination revealed in the right uterine corn a 3 centimeters residual tissue with intense vascularization, with no delimitative margins and 0.5 millimeters tangent myometrial tissue. Two doses of methotrexate were administered and the patient was closely monitored with beta-human chorionic gonadotropin reaching negative level. Two months post abortion, respectively 6 weeks post methotrexate, the vascularization of the residual tissue diminished significantly. Three months post abortion the patient had a menorrhagic menstruation with the elimination of the complete residual mole. **Conclusion:** This case of partial mole presented unusual, but the histopathological examination was essential in guiding the following steps. A minimally invasive management was applied due to the personal history of the patient. We consider that negative beta-human chorionic gonadotropin level and stability on ultrasound evaluation regarding the volume and vascularization of the residual tissue are essential markers for delaying an invasive procedure. There are no cases of partial mole residual cornual tissue published and no particular protocols.

**Keywords:** partial mole, cornual, residual tissue

#### ABOUT A CASE: BLADDER HYPERACTIVITY SECONDARY TO A RADICULOPLEXOPATHY S2-S4

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Overactive bladder (OAB) is a syndrome characterized by urinary urgency, with or without incontinence, nocturia, and frequency. Treatments for both, which include behavior modification, drug therapy, and other procedures, are usually prescribed in a stepwise approach. We begin treatment of urgency or overactive bladder (OAB) with the same measures including: pelvic floor rehabilitation and bladder retraining to suppress urgency, modification of contributing medications/substances, and promotion of a coping style. healthy living and behaviors (eg, smoking cessation, weight loss for people with obesity). As a second step of treatment we have drugs among which we find anticholinergics and beta-3 adrenergic agonists, which increase bladder capacity and decrease micturition frequency; but they have significant adverse effects that cause low adherence to treatment. We generally try at least two pharmacotherapies before third-line treatments, such as posterior tibial nerve stimulation, botulinum toxin A detrusor injections, and finally sacral nerve stimulation devices. **Clinical case:** A 59-year-old woman, referred to the pelvic floor clinic from rheumatology due to nocturia, and increased micturition frequency that alters her quality of life. Among her medical history: irritable bowel syndrome, fibromyalgia, depression. TO: 1/0/0/1, Menopause 55 years old on hormone replacement therapy. The patient comes for nocturnal frequency, which greatly affects her quality of life. After ruling out gynecological pathology, she underwent a urodynamic study that reported pure bladder hypersensitivity, so a neurophysiological study was carried out that reported chronic S2-S4 radiculoplexopathy, predominantly right, where there was motor axonal loss (Fig 1). Anticholinergic therapy (solifenacin 10 mg/24 hours) and bladder reeducation were started. Medical control at 3 months was favourable, since the patient had managed to reduce her episodes of nocturia, and her quality of



life had greatly increased. **Discussion:** Despite the adverse effects of drug therapy in the treatment of overactive bladder, when effective, they increase patient adherence to these drugs. It is for this reason that the pharmaceutical industry does not stop investigating the improvement of pharmacological therapy for overactive bladder, in an attempt to increase efficacy to reduce urgency and frequency and reduce side effects.

#### EARLY ONSET INTRAUTERINE GROWTH RESTRICTION: A CASE REPORT

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Early onset intrauterine growth restriction (IUGR) is diagnosed before the 34th week of pregnancy and it is associated with preeclampsia (PE) in 50% of cases, with severe placental insufficiency, higher prematurity rates, and a more serious prognosis. **Methods:** We present the case of a 43-year-old woman with a history of 1 delivery 16 years ago and 3 miscarriages in the first trimester. She was 22.4 weeks pregnant when presented to the Emergency Department of our hospital with edema in the lower/upper extremities and elevated blood pressure readings at home. The patient was being followed up in high-risk obstetric consultations due to the current pregnancy achieved through IVF with egg donation, gestational hypertension, and a high risk of PE in the first trimester, for which she was on aspirin treatment. Upon admission, she had severe headache, elevated blood pressure, edema in the lower limbs, face, and an angiogenic factors ratio of 119, and GPT of 81. Proteinuria was negative. **Results:** She was diagnosed with severe PE and treatment with antihypertensive medication, thromboprophylaxis, and Magnesium Sulfate was initiated. During her hospital stay, she exhibited type I intrauterine growth restriction in the 23rd-week ultrasound with an estimated fetal weight of 377g and abnormal middle cerebral artery and cerebroplacental pulsatility index. Two days later, the fetus was found to be deceased, leading to the decision to induce labor. After the expulsion of the fetus, the patient experienced postpartum hemorrhage, and adhered placental remnants were observed on the anterior wall of the uterus, suggesting possible placental accreta. Following the activation of the postpartum hemorrhage protocol, a Bakri balloon was inserted, which successfully controlled the bleeding. In the subsequent days, the balloon was gradually emptied, and due to the patient's favorable clinical progress, she was discharged home. **Conclusion:** This case highlights how advanced maternal age, IVF technique, and chronic hypertension are significant risk factors for placenta abnormalities and early onset preeclampsia and its association with adverse perinatal outcomes, such as intrauterine growth restriction and fetal death.

#### MANAGEMENT OF GONOCOCCAL PERITONITIS, A CASE REPORT

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Pelvic inflammatory disease (PID) is the most frequent complication of sexually transmitted diseases (STD) especially caused by Chlamydia trachomatis and Neisseria gonorrhoeae; testing positive in approximately 50% of women diagnosed of acute PID. In Spain it represents the second cause of infectious diseases. Incidence rates are increasing since 2001: Chlamydia 48,36 and Gonococcal infection 32,4 for 100.00 inhabitants in 2021. WHO reports registration of 82 million new cases of Gonorrhoeae worldwide in 2020. It has a huge impact on public health for its high prevalence among fertile women aged 26-35. Although mortality is low (4,2/1.000 hospitalizations) they present high morbidity for its frequent chronic complications such as infertility, risk of ectopic pregnancy or chronic pelvic pain. **Methods:** We report a case of a 28 year-old women, attending to emergency room for acute abdominal pain and diagnosed of PID stage IV. Either vaginal ultrasound and CT scan revealed modest quantity of liquid in major pelvis without clear images of pelvic abscessifications. Endovenous antibiotic therapy was initiated with metronidazol + ceftriaxone + doxycycline and exploratory laparoscopy was performed aspirating 300cc of purulent intraabdominal liquid and intraabdominal lavage with serum. There was no evidence of intraabdominal abscesses. **Results:** Cultures resulted positive only for N. Gonorrhoeae. Due to rapid evolution, the patient required a second laparoscopy with evidence of left pyosalpinx so bilateral salpingectomy was performed. Antibiotic therapy was modified to piperacilina - tazobactam (+

metronidazol and doxycycline). After that, 2 percutaneous abdominal drainages were required to drain 3 intraabdominal abscesses founded in a control CT scan. Intraabdominal abscesses diminished progressively, percutaneous drainages were removed and antibiotic was de-escalate to amoxicillin - clavulanic. After 30 days and full recovery, the patient was discharged. **Conclusions:** STD have an important impact on public health and its increasing incidence demonstrates the importance of primary prevention. Management of gonococcal peritonitis can be complex, requiring different treatments and interventions. It is important to adjust the treatment considering patient's characteristics and its consequences for her future, in this case mainly on fertility.

#### PELVIC INFLAMMATORY DISEASE AFTER SUCTION CURETTAGE ABORTION: A CASE REPORT

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Infections complications after a gynecologic surgical procedure are a significant cause of mortality and morbidity. Prophylactic antibiotics have been widely supported for gynecological procedures. Among these, pelvic inflammatory disease (PID) is the commonest complication of legal abortion, with its frequency ranging between 1% and 17% in different studies. Chlamydia trachomatis and Neisseria gonorrhoeae are likely the primary etiological agents for PID. Randomized clinical trials have demonstrated that prophylactic antibiotics significantly reduce post-abortion infections and they may also help prevent potential late sequelae, such as ectopic pregnancy and infertility. Choosing appropriate antibiotics should ensure therapeutic levels in endometrial tissue, efficacy against common pathogens, and activity during surgery. Doxycycline, metronidazole, and azithromycin are common choices, but the best regimen remains uncertain. **Methods:** A 31-year-old woman, with no prior significant medical history, presented to the hospital with complaints of abdominal pain since undergoing vacuum aspiration for abortion 6 days ago. On physical examination, she exhibited painful cervical movement, fever, and signs of infection in the lab results. Vaginal ultrasound and abdominal CT scan were both normal. She received intravenous ceftriaxone, doxycycline, and metronidazole with a diagnosis of post-vacuum aspiration endometritis. The next day, she developed diarrhea and tested positive for Clostridium difficile, and treatment with fidaxomicin was initiated. Over the following days, she experienced intense pain despite receiving intravenous analgesics, and her lab results worsened. Vaginal tests indicated the presence of Neisseria gonorrhoeae. A new CT scan revealed two abscesses, which were drained under radioguidance. In addition to Neisseria gonorrhoeae, Candida glabrata was also isolated from these abscesses, so treatment with anidulafungin was initiated. **Results:** However, despite these interventions, her condition did not improve significantly, as observed in a follow-up CT scan that showed minimal change in the size of the collections. Consequently, it was decided to perform an exploratory laparoscopy with a double salpingectomy and extensive adhesiolysis. Following the interventions, the patient's condition improved significantly, indicating a positive outcome. **Conclusion:** Universal antibiotic prophylaxis is at least as effective as a policy of screen-and-treat in minimizing the risk of short term infective morbidity and is far more cost efficient

#### MICROPERFORATE HYMEN PRESENTING AS VAGINISMUS: MANAGEMENT AND LITERATURE REVIEW

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Microperforate hymen is a rare congenital subocclusive anomaly which can potentially impact the quality of life and sexual activity of a young woman. Its exact incidence is unknown, and because it is only partially occlusive, affected women often faced delayed diagnosis and diagnosis is made mostly during post pubertal period. This case reports a 30 years old lady who presented to the outpatient gynaecology clinic with complaints of vaginismus, intermenstrual bleeding and menorrhagia. Physical examination revealed normal external genitalia with only a pinpoint opening at the introitus and the rest was covered with hymenal tissue. Bedside pelvic ultrasonography was unremarkable. Patient underwent an elective operation ie. cruciate incision of hymen, diagnostic hysteroscopy with dilatation and curettage. The outcome was successful, and patient had an uneventful recovery. This case highlights the importance to perform a thorough genital examination in ladies who present with vaginismus. Early surgical intervention can help prevent development of complications such as recurrent genital or urinary infections



associated with this anomaly and significantly improve the quality of life of affected women.

### WHY SHOULD BE 3D SIS PERFORMED PRIOR TO HYSTEROSCOPY IN PATIENTS WITH ENDOMETRIAL TUMOURS?

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**Problem statement:** Assessment of transvaginal 3D multislice saline infusion sonohysterography for preoperative evaluation of the endometrial cavity changes before further surgical procedures. **Methods:** In this study 45 patients with suspected endometrial pathology were included. 17 patients with evident pathology on transvaginal 3D multislice ultrasound were not scheduled for further SIS procedure. The remaining 28 patients underwent the additional 3D multislice SIS procedure in order to evaluate the uterine cavity. Once we were assured that the catheter was in the correct position warm saline was introduced into the uterine cavity and during this procedure 3D multislice transvaginal scans of the uterus were performed after distension of the uterine walls. Scans were performed in sagittal direction and then, after additional injection of saline, in transversal direction of the uterus. **Results:** Mean patient's age was 38,7 years. In two patients 3D multislice SIS revealed normal endometrium and uterine cavity. Single polyp was detected in 15 patients. Polyp diameter ranged from 4 mm up to 25 mm. Multiple endometrial polyps were detected in two patients. Endometrial polyposis was detected in 4 patients. In two patients endometrial adhesions were confirmed. In three patients submucous myomas were confirmed. Definitive histopathological results confirmed endometrial polyps in 21 case. In one patient Adenomyosis was found in the polyp tissue. Intracavitary fibroids were confirmed in two cases, and also submucous myomas in 2 cases. **Conclusion:** The 3D SIS causes minimal discomfort to the patient and can be performed in office settings. This procedure allows 3D reconstruction of the uterus and detected endometrial, intracavitary and submucosal pathology, and association with the uterine wall and position in the uterine cavity. It enables correct measurement of the size and volume tumors. The obtained images can be helpful in planning of the hysteroscopic operative treatment and removal of diagnosed tumours.

### PRIMARY AMENORRHEA WITH IDIOPATHIC HYPOGONADOTROPIC HYPOGONADISM: A RARE CASE REPORT FROM INDONESIA

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**Problems Statement:** Idiopathic hypogonadotropic hypogonadism (IHH) is a clinical syndrome describing gonadal failure caused by abnormal gonadotropin hormone levels with clinical amenorrhea and delayed puberty or maturation failure due to low steroid hormone levels. The prevalence is 1-10 cases/100 000 births. We present a case report of IHH associated with primary amenorrhea and delayed puberty. **Methods:** Case report. **Results:** A 28-year-old nulligravid woman, having been married for 3 years, with primary amenorrhea. She had never experienced menstruation. She is unable to do sexual activity, no olfactory impairment, no neurologic deficits, and no history of head trauma. Breasts, axillae, and pubic hair were in Tanner stage 1. Her height was 158 cm, and weight 49 kg. Transrectal ultrasound found a uterus measuring 2.01 cm x 0.65 cm and ovaries measuring 1 cm. Her karyotype is 46, XX. Her laboratory results are as follows: follicle-stimulating hormone 0.75 mIU/mL, luteinizing hormone 0.16 mIU/mL, estradiol 9 pg/mL and anti-mullerian hormone 0.6 ng/mL. Head Magnetic Resonance Imaging showed hematoma in the pituitary region, no ischemic lesions or neoplasm were seen. Vaginoscopy found 7 cm vaginal length, normal vaginal mucosa, 1 cm diameter cervix. Uterine sound revealed 4 cm length. Laparoscopic findings were uterine hypoplasia size 4 cm x 2.7 cm x 1 cm and normal sized right and left tubes, right and left ovary appeared normal measuring 2.8 cm x 2 cm and 3 cm x 2 cm respectively. Her diagnosis was uterine hypoplasia, hypoplasia of the distal 1/3 of the vagina and

IHH. The diagnosis of IHH was established from primary amenorrhea as well as delayed puberty and low steroid hormone and gonadotropin levels. This patient underwent vaginal reconstruction to help her have normal sexual intercourse. **Conclusion:** The clinical manifestations of IHH are delayed puberty, non-achievement of sexual maturity due to hypoestrogenism. The goal of treatment of patients with IHH is to induce the progressive development of normal puberty and the ability to have normal sexual intercourse.

**Keywords:** Idiopathic hypogonadotropic hypogonadism, primary amenorrhea, delayed puberty, delayed puberty to highlight the diagnostic management of this patient

### THE DIFFERENTIATION POTENTIAL OF OVARIAN THECA INTERNA CELLS FROM MESENCHYMAL STEM CELLS

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**Problem statement:** The origin of human theca interna cells (TICs), which play an indispensable role during ovarian folliculogenesis, has remained elusive. This gap in knowledge poses challenges in their further investigation and utilization for various applications, such as the engineered ovary. Recent studies have identified the existence of theca stem cells (TSCs) in both humans and animals. These TSCs express platelet-derived growth factor receptor (PDGFR) and nerve growth factor receptor (NGFR), and demonstrate the ability to differentiate into mesenchymal cell lineages, resembling characteristics of mesenchymal stem cells (MSCs). Therefore, we hypothesize that MSCs may be the cells of origin of TICs. **Methods:** To investigate this hypothesis, we aimed to characterize cells during the *in vitro* differentiation of ovarian stromal cells into TICs, as previously established by our group. Ovarian stromal cells, isolated from postmenopausal ovarian cortex fragments, were cultured *in vitro* for 13 days, using cell media enriched with various growth factors and hormones. Flow cytometry, immunocytochemistry, qPCR, and ELISA were employed to analyze the cells and their media at days 0, 2, 8, and 13. **Results:** Immunocytochemistry results showed an increase in the proportion of cells positive for TIC markers from day 0 to day 8 (12.1% vs. 57.7%), while the proportion of MSC-like cell markers was increased significantly from day 0 to day 2 (4.54% vs. 57.34%). This TIC proportion aligns with the rising androstenedione levels from day 0 to day 13 (0 pg/ml vs. 353.1 pg/ml). Flow cytometry analysis of CD34 and CD45 showed a significant decrease in the CD34- CD45- cell population (56.2% vs. 13.0%) and a significant increase in the CD34- CD45+ cell population (6.1% vs. 64.6%) from day 0 to day 13. **Conclusion:** These results collectively indicate the presence of TICs after 2 days of culture. Moreover, the decrease in CD34-/CD45- cells may suggest the presence and potential differentiation of MSCs. However, further ongoing qPCR investigations and additional flow cytometry analyses are required to confirm our findings. In conclusion, our study provides valuable insights into the differentiation potential of TICs, suggesting a possible origin from MSCs.

### NOVEL ENDOMETRIOSIS MOUSE MODEL TO EVALUATE IMMUNOLOGICAL CHANGES IN INFERTILITY WITH ENDOMETRIOSIS

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**Problem statement:** Infertility in endometriosis is now recognized as involving immunological factors beyond mechanical obstruction. Conventional animal models using have limitations. Cytokine changes in these models differ from humans, and induced lesions naturally regress over time. Improved models are needed to better understand the immunological aspects and long-term behavior of endometriosis-related infertility. **Methods:** While previous models use allograft (intra-abdominal injection or direct peritoneal implantation), we have developed a new method using autologous tissue. The left horn of the Y-shaped uterus of the mouse is incised and the exposed endometrium is sutured to contact the ipsilateral gonadal fat layer. For comparison, conventional allotransplantation was performed in 14 subjects and our eversion surgery was performed in 34 subjects. Lesions were harvested at 4, 8, and 12 weeks for evaluation. **Results:** It was confirmed that the endometriosis lesions induced in the new eversion model were significantly larger than those of the conventional transplantation method and became larger over time. The average weights of lesions made by the conventional model were 40.99mg, 66.03mg, and 107.16mg at 4, 8, and 12 weeks, respectively. The average weights of the eversion surgery lesions





were 372.80 mg, 495.88 mg, and 995.20 mg at 4, 8, and 12 weeks, respectively. **Conclusion:** The new animal model for endometriosis demonstrates progressive lesion growth; and preserves blood flow in uterine and ovarian vessels, devoid of immune reactions seen in allograft transplantation. In addition, independent endometrial tissue from the unaffected right uterine horn can be obtained, reflecting the inflammatory environment in endometriosis patients.

#### EXPLORING ALTERED EXPRESSION OF ENDOMETRIAL MARKERS AND THEIR IMPACT ON ENDOMETRIOSIS: UNVEILING POTENTIAL DIAGNOSTIC INSIGHTS

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**Problem Statement:** Endometriosis, affecting 10% of women in their reproductive years, contributes to infertility and chronic pelvic pain. The disease involves ectopic endometrial cell implantation, triggering immune alterations and inflammation. These factors impede embryo implantation and pregnancy success. **Methods:** We conducted a retrospective cohort study involving 188 women who underwent endometrial biopsies, divided into endometriosis (G-End) and control (Cont) groups. A comprehensive panel of markers, including CD 138, CD16, CD 163, CD 45, CD 20, CD 56, cytotoxic NK cells, BCL-6, Ki-67, E2, and P4 receptors, was assessed alongside baseline E2 and P4 levels. Marker ratios were calculated. Immunoassay tests evaluated endometrial markers, while serum E2 and P4 concentrations were determined via electrochemiluminescence. **Results:** Women with endometriosis exhibited significant differences in their endometrial milieu compared to controls. The G-End group demonstrated decreased ratios of E2 to P4 ( $0.10 \pm 0.01$  vs.  $0.05 \pm 0.03$ ), reduced CD16+ NK cell expression ( $0.031 \pm 0.02$  vs.  $0.012 \pm 0.03$ ), lower NK16-to-CD56 ratio ( $0.07\% \pm 0.15$  vs.  $0.27\% \pm 0.49$ ), diminished average cytotoxic NK cell levels ( $0.16 \pm 0.38$  vs.  $0.52 \pm 0.51$ ), and attenuated E2-to-P4 receptor expression ratio ( $0.07\% \pm 0.04$  vs.  $0.27\% \pm 0.11$ ). Conversely, controls exhibited a lower CD163-to-NK16 ratio ( $3.46 \pm 3.5$  vs.  $5.66 \pm 5.5$ ). **Conclusion:** This study underscores the potential diagnostic value of conventional endometrial markers when assessed through an innovative lens and rigorous validation, particularly in the context of endometriosis. The observed alterations in endometrial markers and ratios among women with endometriosis provide insights into the challenges of implantation and fertility associated with this complex disorder.

#### NOVEL MANAGEMENT OF BENIGN MÜLLERIAN PAPILOMA WITH EMBOLIZATION OF FEEDING ARTERIES

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**Problem statement:** Novel treatment of Müllerian papilloma in an adult woman with embolization of feeding arteries. **Methods:** A 33-year-old virgo presented with heavy and prolonged menstrual bleeding. She reported no history of vaginal bleeding during childhood, menarche at 13 years of age, regular menstrual cycle and hypothyroidism. Clinical gynecologic examination showed a hemorrhagic cervical mass that extended into the anterior vaginal wall. Vaginoscopy revealed a bulky, friable, polypoid mass arising from the ectocervix with extension into the anterior vaginal wall. Her blood count revealed anemia for which she was transfused with 2 units of red blood cells, while hormonal testing was normal. Transabdominal ultrasonography showed a large mass with a maximal craniocaudal diameter of 10 cm protruding inside the uterine cavity and cervix. There was no bladder involvement on cystoscopy. Magnetic resonance imaging (MRI) scan showed a pedunculated intracavitary polypoid mass with a maximal craniocaudal diameter of 10 cm and maximal thickness of 9.9 cm, protruding through the cervix into the lower third of the vagina, dilating and thinning their walls. The tumor consisted of multiple villi and vacuoles with watery and hemorrhagic content. Biopsy was performed and revealed cytopathologic features of müllerian papilloma, with coexisting degenerative-necrotic lesions. **Results:** Because of the large size of the tumor it was impossible to get access to its peduncle through the cervical canal in order to remove it. That's why the patient was referred to the Interventional Radiologist Department and embolization of feeding arteries was performed, through right common femoral artery access. Two years post embolization the

patient reports no recurrence of bleeding and the tumor is completely regressed. **Conclusions:** Müllerian papilloma is a rare, benign, polypoid lesion of young girls. In a few cases it has also been reported in adult women. Malignant transformation is rare and it has been documented to date in only two cases. It can be treated with local excision, if possible, but it often recurs. To our knowledge, this is the first case treated with embolization of feeding arteries, thus providing a new way of management.

**Disclosure of interest statement:** The authors declare no conflict of interest.

#### EVALUATION OF ANTITHYROID PEROXIDASE ANTIBODY IN POLYCYSTIC OVARY SYNDROME: A CASE CONTROL STUDY

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**Problem statement:** To compare the Serum Anti-Thyroid Peroxidase Antibody positive rate in patients presenting with menstrual irregularities with and without Polycystic Ovarian Syndrome (PCOS).

**Methods:** The following study is case control study. Study was performed in 2 groups- PCOS and Non-PCOS presenting with menstrual irregularity. A detailed history was obtained along with physical examination in all the indicated patients. Serum Anti-Thyroid Peroxidase (anti-TP) antibody was evaluated in both the groups.

**Results:** Mean anti-TPO levels were  $110.24 \pm 252.13$  IU/ml in PCOS and  $48.91 \pm 148.33$  IU/ml in non-PCOS women. Though, mean levels were higher in PCOS as compared to non-PCOS group yet this difference was not significant statistically. **Conclusion:** Evaluation of anti-TPO antibody may also be recommended in early reproductive age group of females with PCOS to prevent fertility related sequelae of PCOS by its prompt and early management.

#### GENITAL HERPES ZOSTER: A RARE DIAGNOSIS TO BEAR IN MIND

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**Problem statement:** When in the presence of genital erythematous/vesicular lesions, the most common diagnosis is herpes simplex virus (HSV) infection. However, in patients with risk factors or with specific clinical presentations, one must bear in mind other diagnosis. Herpes zoster (HZ) occurs after reactivation of a latent varicella zoster virus infection. It is characterized by painful vesicular lesions, with a dermatomal and unilateral distribution. The thoracic and lumbar dermatomes are the most frequently affected. Involvement of genital dermatomes is described in only 2% of cases.

**Methods:** Retrospective description of a clinical case. **Results:** We describe the case of a 43-year-old woman with systemic lupus erythematosus, Sjögren's syndrome and depression, under hydroxychloroquine, prednisolone, fluoxetine and topiramate. She was referred to our gynecology emergency room due to the onset, 5 days before, of a burning pain along the right genital and perineal regions, with the formation of several lesions on these areas. On examination, she presented with multiple millimetric erythematous/vesicular lesions, some coalescing into pink edematous plaques. The lesions affected the right labium majoris, extending to the homolateral inguinal region and medial thigh surface, apparently along the S3 dermatomal distribution. Though HZ infection was the first diagnostic hypothesis, lesion swab was still obtained, to exclude the most common sexually transmitted diseases associated with this type of lesion. Treatment with valaciclovir was initiated. On reevaluation, one week later, the patient referred significant improvement of her symptoms. On examination, the lesions were now crusted over, some already in the process of healing. The negative lesion swab result excluded other etiologies, including HSV infection.

**Conclusion:** Differential diagnosis of vulvar and perineal lesions can be challenging. This case illustrates how one must take HZ infection into consideration, particularly in the presence of an immunocompromised patient. Although the diagnosis can usually be established clinically, a viral culture, immunofluorescent or PCR identification is desirable for confirmation. While in our hospital PCR test was not available, we were still able to exclude the most common



differential diagnosis: HSV infection. Prompt suspicion of HZ infection is crucial for the timely initiation of treatment and maximization of its benefits.

#### RARE CASE OF INCARCERATED FEMORAL HERNIA CONTAINING OVARY

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**Objective:** Demonstration of the importance of promptly addressing incarcerated femoral hernias. **Case Report:** A 43-year-old woman, with a history of cesarean section eight years ago, presented to the emergency department with acute, worsening right abdominal pain lasting one day. She had noticed a bulging lump in her right lower abdomen a few months earlier. The day before, she had an ultrasound at another facility, which revealed an anterior abdominal wall hernia with a narrow neck (11 mm) and a large herniated sac (6.7x4.5x2.5 cm), alongside a small inguinal hernia. In our emergency department, a physical examination confirmed an irreducible and tender lump in the right lower iliac fossa. However, bowel sounds were normal, and lab tests were within normal limits. A contrast-enhanced CT scan of the pelvis revealed a moderate-sized right inguinal hernia containing gut loops. The pre-operative diagnosis was of incarcerated incisional or inguinal hernia, leading to surgical intervention. Prophylactic antibiotics were administered, followed by an incision at the site of the previous cesarean section. Intra-operatively, the hernia was found in the femoral canal and contained a large right ovarian cyst and ovary, showing signs of strangulation. The diagnosis was finalized as a femoral incarcerated hernia, which was excised, and the ovarian cyst was also removed. Normal blood flow to the right ovary was restored, confirmed by its return to a healthy color. The hernial defect was repaired, and a mesh was placed to prevent recurrence. The patient recovered well postoperatively, was discharged after a day with analgesia, and had a successful follow-up two weeks later. The pathology results of the ovarian cyst were reassuring, indicating no malignancy. A pelvic scan four months postoperatively showed a healthy right ovary. **Discussion:** Femoral hernias are rare, constituting only 3% of groin hernias. They are more common in females and are at greater risk of incarceration due to their narrow canal. Incarceration of the ovary in a femoral hernia is exceedingly rare, necessitating early detection and intervention to preserve ovarian viability and the patient's future childbearing potential. **Conclusion:** Timely detection and management of incarcerated femoral hernias significantly impact patients' well-being and prospects.

#### DYFFUSE UTERINE LEIOMYOMATOSIS: A CASE REPORT

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**Introduction:** Diffuse uterine leiomyomatosis is a benign rare condition in which the uterus myometrium is almost completely replaced by enumerable myomas. The most common presenting symptoms include abdominal pain, abnormal uterine bleeding, menorrhagia, dysmenorrhea, pelvic pressure, and infertility. **Methods:** The patient is a 32-year-old woman who came for the first time to the clinic with hypermenorrhea symptoms in 2018 and was diagnosed with ultrasound of multiple uterine leiomyomas. We decided to start with hormone therapy and perform an ambulatory hysterectomy. We found 4-5 submucous myomas, we took biopsy but due to pain we could not keep on with the myomectomy. Four months later we perform a new Hysteroscopy in the operating room, and we could morcellated most of the myomas (90%). Biopsy showed benign leiomyoma, and the ultrasound two small myomas apparently intramural. After six months, she was starting again with hypermenorrhea, so a new ultrasound was performed and the result was multiples small submucous and intramural myomas, the diagnosis of diffuse uterine leiomyomatosis was our first option, we decided to start again hormone therapy to control the hypermenorrhea and wait until she wanted a pregnancy. **Results:** From that moment until November 2022, when she decided she wanted a pregnancy, we control the patient, with the therapy was stable without hypermenorrhea and with similar ultrasound images of multiples small myomas from 5-20 mm. At that point we decided to perform a new

surgical hysteroscopy, where again we morcellate most of the submucous myomas. In the ultrasound after the procedure, we could not see any submucous myomas. Two months later, In March 2023 she got pregnant, and our days is 24 weeks of gestation, of a normal pregnancy without any complications. **Conclusion:** Hysteroscopy is a safe and effective procedure for the treatment of submucosal myomas and a very good alternative to hysterectomy in those patients with gestational desires.

#### OTHER

#### CONGENITAL HEART BLOCK IN AN ANTI-SSA POSITIVE MOTHER: A CASE REPORT

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Congenital heart block is seen in association with autoimmune antibodies in mother that cross the placenta and damage the AV node of the fetus. This is a case of a 30 year old primigravida, with no known comorbidities, who had fetal bradycardia at 19 weeks age of gestation. She tested positive for SS-A and ANA antibodies and negative anti ds DNA. Fetal echocardiography revealed 3rd degree heart block with ventricular rate of 70 bpm. Closed antenatal surveillance consisted of fetal movement monitoring and repeat sonograms. Elective cesarean delivery was done at 37 weeks of gestation. The baby initially underwent temporary pacing within hours of birth, then permanent pacing on day 1 of life. Currently, both mother and baby are doing well on follow up.

#### EFFECT OF THE COVID-19 PANDEMIC ON THE PHILIPPINE GENERAL HOSPITAL - OBSTETRICS AND GYNECOLOGY RESIDENCY TRAINING PROGRAM

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**Problem Statement:** The COVID-19 pandemic had a major impact on the healthcare system of our country including the training of resident physicians. Studying the effects of the pandemic on residency training, in OB-GYN in particular, can help in formulating new solutions to minimize the impact of COVID-19 on the quality of the residency training program. **Methods:** This was a cross-sectional study using mixed methods on the effect of the COVID-19 Pandemic on the PGH - Obstetrics, and Gynecology Residency Training Program. The mixed methods were composed of qualitative and quantitative methods. An extensive review of the type and number of procedures done by each resident was collated and averaged per year level during 2019, 2020, and 2021 and a comparison was made with the minimum requirement of POGS. A survey questionnaire was directed to the training officers during the pandemic (2020 and 2021) to determine planned changes, in the training curriculum of the resident-in-training. **Results:** The study showed that in 2019, the residents were able to complete all of their required procedures and it was noted that in all year levels, the mean average of the procedures per resident was statistically higher compared to the minimum number given by POGS and to the cases completed during 2020-2021. The type of procedures and the minimum number of procedures were the same for pre-pandemic and during the pandemic. Rotation to other accredited hospitals, allowing transfer of technical responsibilities and extension for at least 6 months were implemented to help the residents accomplish their deficiencies. **Conclusion:** The COVID-19 pandemic imposed a major negative impact on OB-GYN residency training. In terms of their surgical competencies, compared to pre-pandemic years, residents-in-training were given and exposed to a very limited number and type of cases. This was reflected in the number of cases they have accomplished. Several adjustments were done to ensure that the residents were receiving the best training and to guarantee that the institution can cope up with the deficiency in surgical procedures and still bring out quality training and education to the graduates of the residency training program.

#### DETERMINATION OF OBSTETRIC VIOLENCE AND AFFECTING FACTORS: A SAMPLE OF TURKEY

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**Problem statement:** Obstetric violence is accepted as a violation of human rights and a serious public health problem. The purpose of this





study is to determine experiences of obstetric violence and the affecting factors among women who had childbirth. **Methods:** This descriptive study included 200 women who had vaginal delivery. Data were collected within the first 24 hours following childbirth using the Personal Information Form, the Labor-related Characteristics Form, and the Obstetric Violence Identification Form. Data analysis was performed using descriptive statistics and chi-square tests. Statistical significance was accepted  $p < 0.05$ . **Results:** Results showed that 25,5% of participating women who had vaginal delivery were exposed to verbal violence, 37,2 % were exposed to psycho-emotional violence, and all of them were exposed to physical violence. Only the place of living among socio-demographic characteristics showed a statistically significant difference with the type of obstetric violence ( $p < 0,05$ ). As for the obstetric characteristics, only receiving information before labor demonstrated a statistically significant difference with exposure to verbal obstetric violence ( $p < 0,05$ ). Of all the participants, 42,5% were slightly satisfied with their childbirth experience. **Conclusion:** This study found that women were exposed to obstetric violence in Turkey and had low levels of satisfaction with their childbirth experience. In line with these conclusions; to determine the extent of obstetric violence and identify the factors contributing to it, research studies can be conducted using qualitative and quantitative methods. Once the factors contributing to obstetric violence have been identified, interventions can be developed to address them.

### THE EFFECT OF ENHANCED RECOVERY AFTER CAESAREAN SECTION (ERACS) ON THE MATERNAL AND NEONATAL OUTCOMES IN SOEROJO HOSPITAL MAGELANG

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**Problem Statement:** Recently, caesarean section (c-section) with Enhanced Recovery After Caesarean Surgery or ERACS is becoming more popular in obstetric surgery, positively impacting maternal and neonatal outcomes. Besides caring for patients with mental disorders, Soerojo Hospital also holistically serves regular patients, including maternity services implementing enhanced recovery cesarean section. The ERACS method has been implemented for more than one year, but evaluation of maternal and neonatal outcomes is still needed so that service standards can be determined to improve service quality and patient satisfaction. The aims of this study are to determine the effect and factors that influence maternal and neonatal outcomes in the ERACS method. **Methods:** This study was a retrospective study. The data was taken from the electronic medical record of Soerojo Hospital from 1st January 2022 until 31st December 2022. The inclusion criteria were all patients who elective ERACS Method during this study period. The exclusion criteria were covid-19 patients and no history of amniotic rupture and signs of labor. The variables were obtained from the medical record. The researchers identified maternal and neonatal outcomes. Descriptive analysis was used to determine the central tendency and variability of the data. Results: From 48 eligible patients, 8 (16.6%) had mental disorders. The average post-ERACS length of stay was 1.92 days. Forty-one patients (85.42%) had mild pain and a mean NRS pain score (1.83). The average time of removal of the catheter was 18.54 hours. Twenty-three patients (47.92%) could sit, and 4 (8.33%) were readmitted. Regarding the neonatal outcomes, 43 babies (89.58%) had breastfeed. The average time for breastfeeding was 11 hours. Four babies (8.33%) had moderate asphyxia, and 8 (16.67%) needed readmission. Factors influencing maternal and neonatal outcomes were antenatal care, knowledge, skills (position and latching), and family support. **Conclusion:** ERACS Method had a positive impact on maternal and neonatal outcomes, especially on the baby's ability to breastfeed which is influenced by various factors.

**Keywords:** caesarean section, enhanced recovery, maternal and neonatal outcomes

### A GIANT BILATERAL OVARIAN SEROUS CYSTADENOMA IN YOUNG PREGNANT GIRL: DOCUMENT TYPE: A CASE REPORT

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**PROBLEM:** 17 years old otherwise low risk normal BMI Primigravida former smoker was booked into consultant clinic after diagnosis of bilateral ovarian masses on early pregnancy scan with no significant past medial surgical allergy medication history. **ON SCAN:** large cystic structures within the pelvis/abdomen? origin, first located superior to the uterus measuring 18cm x 7.5cm x 17cm and the second located in the POD measuring 8cm x 6cm x 10cm. No increased vascularity Nor ovary identified. **METHODS:** Managed conservatively throughout pregnancy. She underwent ELLSCS +BILATERAL CYSTECTOMY. Peroperatively 20 and 15 cm bilateral par ovarian clear cysts removed. **RESULTS:** Histology conclusion: para-ovarian cyst - fluid cytology: Slides virtually. RIGHT & LEFT OVARIES: BENIGN SEROUS CYSTADENOMAS. Procedure went uncomplicated. Patient cancelled, followup arranged. **CONCLUSION:** Pregnancy with a huge ovarian cyst is a rare. Most ovarian cysts are asymptomatic, detected accidentally. Management is determined by the gestational age, symptoms, and nature of the cyst. Asymptomatic/small-size/benign featured cyst is managed conservatively. In the larger/symptomatic/malignant cyst surgical intervention is contemplated in the second or third trimester or an emergency if required. In this case patient remained asymptomatic throughout pregnancy and was managed electively after informed decision making.

### TANDEM BREASTFEEDING AND NURSING

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**Problem statement:** Tandem breastfeeding is defined as the continuation of breastfeeding during pregnancy or after the birth of the mother with her newborn baby, as well as her other baby under the age of two who is still in the breastfeeding period. In this study, it is aimed to give information about the results of tandem breastfeeding related to women, fetus and child health and the responsibilities of nurses. **Methods:** Literature search was carried out in Turkish and English languages, PubMed, and Google Academic electronic databases between 2003-2023. For the literature review, reference keywords were determined for the words "tandem", "breastfeeding" and "nursing" and various combinations of searches were created using these words "AND/OR". **Results:** The results of the research show that the continuation of breastfeeding of the mother who became pregnant while breastfeeding is not harmful for the mother, fetus and other baby. It is reported that as a condition of the continuity of tandem breastfeeding, ensuring adequate and balanced nutrition of the mother. In addition, the importance of closely follow-up the mother, fetus and other baby is emphasized in this process. **Conclusion:** Considering the health benefits both for the infant and the mother, American Academy of Pediatrics (AAP) and World Health Organization (WHO) recommend only mother's milk in the first six months of life and then continuing breastfeeding for at least two years with complementary feeding. In line with the results of the studies, nurses should provide counseling to pregnant women and mothers about tandem breastfeeding and should follow-up closely of pregnant, mother, fetus and baby.

### CALM DOWN - THE NEW ALGORITHM FOR CLINICAL MANAGEMENT OF SEVERE PREECLAMPSIA

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**Problem statement:** Preeclampsia (PE) occurs in 3- 12% of pregnancy and that was no changed during the last century. PE is a leading cause of maternal morbidity and mortality worldwide, accounting for more than 46,000 maternal deaths and approximately 500,000 fetal and newborn deaths annually. According to Ukraine statistic data for 2021: the incidents of hypertension in pregnancy in 20,062 women (68.05 per 1,000 births), including preeclampsia and eclampsia in 10,102 women (37.14 per 1,000 births), of which severe





preeclampsia and cases of eclampsia in 1,324 women (4.96 per 1,000 births). The early multi-disciplinary management are essential to prevent morbidity and mortality associated with preeclampsia. **Material and Methods:** The new version of the Ukrainian National Clinical Guideline (2022) "Hypertensive disorders during pregnancy, childbirth and the postpartum period" covers of the diagnosing and managing pre-eclampsia, during pregnancy, labour and birth. The current algorithm was performed at the National Pirogov Memorial Medical University, Vinnytsya, Ukraine, under budget grant No. 0121 U109141. **Results:** We presented the new algorithm of clinical management for severe pre-eclampsia "CALM DOWN" - the special mnemonic that means "step by step clinical strategy" for the medical teamwork (Table 1).

Table 1. Clinical management of severe preeclampsia Ukrainian experience

Mnemonic	Definition	Action of personnel	Optimal time
<b>C</b>	Calling for help	Calling on duty doctors, an anesthesiologist at the onset of symptoms of severe preeclampsia, with fixation of actual time.	1-3 min
<b>A</b>	Assessment	Check the airway, auscultation of the lungs, re-measure blood pressure, heart rate, assess the oxygen saturation, fetal heart beats, assess the patient's consciousness.	3-5 min
<b>L</b>	Low blood pressure	Antihypertensive therapy: nifedipine 10 mg p.o., urapidil 10 mg IV	5-10 min
<b>M</b>	Magnesium sulfate	Intravenous therapy is with a loading dose of 4 g of diluted magnesium sulphate (in 50 ml) through perfuser.	10-15 min
	Pause	Evaluate the effectiveness of prescribed medications. Target BP: sBP range of 130 to 150 mmHg; dBP range 80 to 90 mmHg.	5-10 min
<b>D</b>	Decision	Decide about further management. Transfer to the intensive care unit or operating theatre or delivery room, depending on gestational age and patient condition.	5-10 min
<b>O</b>	Oliguria	Women with severe preeclampsia immediately prior to regional anesthesia or immediate delivery: 250 mL bolus. Fluid restriction in pre-eclampsia is recommended no more than 60-80 mL/h of IV fluids.	5-10 min
<b>W</b>	Fetal Wellbeing	Continuous CTG monitoring and Doppler assessment.	10-30 min
<b>N</b>	Parturition	All women with severe pre-eclampsia or eclampsia should be delivered within 24 hours, regardless of gestational age. Recommend vaginal birth unless a caesarean section is required for other obstetric indications. If vaginal birth is planned and the cervix is unfavorable, recommend cervical ripening to increase the chance of successful vaginal birth.	

C" is Calling for help

"A" is Assessment

"L" is Low blood pressure

"M" is Magnesium.

PAUSE is evaluated on the effectiveness of prescribed medications.

D" is Decision (decide about further management).

"O" is Oliguria (fluid restriction in preeclampsia is recommend no more than 60-80 mL/h of IV fluids - 5-10 min.

"W" is fetal Wellbeing (continuous CTG monitoring and Doppler assessment) - 10-30 min.

"N" is parturition, timing of birth is dependent on the severity and the gestational age (prolongation of pregnancy carries no benefit for the woman but may be desirable at early gestations to improve the fetal outcomes and prognosis). **Conclusion:** We have proposed the algorithm "CALM DOWN" for the optimal timing of severe PE, offers to systematize the participation of each member of the team in the provision of emergency care.

**Disclosure of Interest:** The authors declare no conflict of interest.

## THE MODERN FEATURES OF THE OPTIMAL INFUSION THERAPY OF HYPEREMESIS GRAVIDARUM

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**Problem statement:** Nausea and vomiting in early pregnancy is very common, affecting approximately 80% of pregnancies, hyperemesis gravidarum (HG) is a severe form that complicates up to 2.2% of pregnancies. In addition to the consequences of undernutrition for the mother and fetus, the severity of HG symptoms causes a serious psychosocial burden, leading to depression, anxiety and even the development of perinatal pathology. The aim of the investigation was to examine of the features of infusion therapy of HG and evaluate them based on both subjective and objective measures of efficacy, maternal and fetal safety. **Material and Methods:** A systematic data search was conducted using the databases MEDLINE, PubMed, Cochrane Database of Systematic Reviews and publications in professional publications of Ukraine for 2013–2023. The search was conducted using the terms: pregnancy, hyperemesis, infusion therapy

and the safety profile of medications prescribed during pregnancy in various combinations. The investigation was performed at the National Pirogov Memorial Medical University, Vinnytsya, Ukraine, under budget grant No. 0121 U109141. **Results:** Intravenous fluid and electrolyte replacement is an important part of symptomatic management of nausea and vomiting, as well as for correction of dehydration in women with HG. We presented the analysis of effectiveness and safety of infusion therapy in HG, according to the evidence medicine (Table 1).

Type of fluid	Quantity/Rate	Comments
Hartmann's	1-2 L. Initial rate 1L/ 2 hours, and then 5L/4 hours.	May be used for slow hydration (over 6-8 hours).
0.9% sodium chloride	1-2 L. Initial rate 1L/ 4 hours, and then 500 ml every 4-6 hours.	Avoid rapid administration (can lead to the development of central pontine myelinolysis). In case of hypokalemia (K <sup>+</sup> < 3.5 mmol/l) – 1000 ml of 0.9% sodium chloride with 20 mmol of potassium is administered over 4 hours.
4% dextrose and 0.18% sodium chloride or 5% dextrose	1 L. Initial rate 1L/ 2 hours.	Consider as an option if minimal oral intake, starvation or uncontrolled nausea and only after correction of thiamine deficiency (thiamine 200-300 mg should be added to the infusion) and exclusion of hyponatremia. Avoid usage for fluid replacement as can precipitate Wernick's encephalopathy.
Potassium chloride	30-40 mmol/L. Maximum infusion rate 10mmol over 1 hour	Administer with caution as per local protocol. Preferred product is premixed 30mmol potassium chloride in 1 L bags of 0.9% sodium chloride. Use large peripheral vein or central venous access only.
Magnesium sulphate	10-20 mmol/day over 20-40 minutes	Obvise with 1000ml 0.9% sodium chloride. Use large peripheral vein or central venous access only.
Xylitol	6-8 ml/kg of weight	Duration of therapy is 3-5 days. Does not affect the level of blood glucose and does not contribute to the secretion of endogenous insulin.

**Conclusion:** Emergency management of HG should focus on correction of dehydration and/or electrolyte disturbances, control of nausea and vomiting, to ensure optimal enteral nutrition. Women presenting to the emergency department require infusion therapy based on the severity of HG. The optimal addition to the generally accepted treatment regimens for HG, especially relapses, is the inclusion of the polyatomic alcohol xylitol in the treatment regimen. Xylitol reduces ketogenic intoxication and reduces the synthesis of ketone bodies by accelerating the oxidation of acetyl-CoA in the Krebs cycle, accelerates the removal of ketone bodies from the body and corrects metabolic acidosis, and the balanced composition of electrolytes restores their balance.

**Disclosure of Interest:** The authors declare no conflict of interest.

## ACUTE MASTITIS AS A TRIGGER FOR THE DIAGNOSIS OF ACUTE MYELOID LEUKEMIA.

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Acute myeloid leukemia (AML) refers to a diverse group of aggressive hematologic malignancies involving the proliferation of myeloid blasts committed to granulocytic, monocytic, erythroid, or megakaryocytic lineages. AML is the most common acute leukemia in adults, accounting for approximately 80% of cases in this age group. Patients with AML usually present with symptoms associated with complications of pancytopenia (eg, anemia, neutropenia, and thrombocytopenia), including weakness and easy fatigability, infections of variable severity, and/or bleeding findings such as gingival bleeding, ecchymosis, epistaxis, or menorrhagia. Combinations of these symptoms are common. **Clinical case:** 34-year-old woman with no relevant history, who came to the emergency room due to right mastalgia together with a breast lump of about 3 days of evolution. In emergency analysis, the following is observed: significant elevation of CRP 35.89 mg/dL and procalcitonin 0.65 ng/dL, anemia with hemoglobin of 9.2g/dL, leukocytosis of 16,750 u/mL, with 5% atypical cells, 74% of segmented (hypogranulated) neutrophils, 9% lymphocytes and 12% monocytes and they recommend a consultation with hematology. A bone marrow study was started confirming the presence of 6% lymphocytes, 4% of the erythroid series, 13% neutrophils, 1% mature monocytes and 62% blasts. It is oriented with the diagnosis of acute myelomonocytic leukemia (M4). **Discussion:** The clinical case makes us think about the importance of performing an analysis when the patient went to the emergency room for the first time, the diagnosis of an infectious process was made and the analysis was rejected. Evidently, the evolutionary symptoms of leukemia, with feverish spikes led her to consult a second time, where she performed the analysis with which I suspect the diagnosis of hematological disease. The discrepancy between the symptoms and local examination of the right breast with the fever spikes, which in our opinion were not justified, was also striking. The rapid diagnostic suspicion on the part of the laboratory and the services involved in monitoring and treatment led to the fact that 24 hours after admission to the hospital due to mastitis, it was oriented as possible acute leukemia and transferred to the hematology service where it was confirmed. the diagnosis of AML.



**RETINAL FINDINGS AND RISK FACTORS OF PREECLAMPSIA-ASSOCIATED RETINOPATHY: A RETROSPECTIVE COHORT STUDY**Seokyoung Kim<sup>1</sup>, Dae Hwan Kwon<sup>2</sup>, Jieun Song<sup>2</sup>, Jeong In Yang<sup>1</sup>, Ji Hun Song<sup>2</sup>, Dong Wook Kwak<sup>1</sup><sup>1</sup>Obstetrics and Gynecology, Ajou University School of Medicine, Suwon-Si, South Korea<sup>2</sup>Ophthalmology, Ajou University School of Medicine, Suwon-Si, South Korea

**Purpose:** To investigate the retinal findings and postpartum course in preeclampsia with visual symptoms and evaluate the risk factors for preeclampsia-associated retinopathy. **Methods:** This retrospective cohort study included 32 women (64 eyes) with preeclampsia and visual symptoms who underwent ophthalmologic checkup and delivered in Ajou University Hospital between July 2010 and April 2022. Ophthalmologic clinical features and laboratory results were investigated. **Results:** Visual acuity was improved from 0.50±0.55 to 0.25±0.46 (LogMAR, P.001). Both macular edema (ME) (from 67.2% to 18.8% / P.001) and serous retinal detachment (SRD) (from 54.7% to 4.7% / P.001) developed, but showed postpartum improvements. Retinal and vitreous hemorrhage and exudate increased with gestational age. Five (7.8%) eyes were treated (3 by anti-vascular endothelial growth factor and 2 by vitrectomy). Lower serum albumin level was associated with the development of ME (2.79 g/dl) and SRD (2.73 g/dl). **Conclusion:** Preeclampsia-associated retinopathy may lead permanent visual impairment. Detailed ophthalmic examination is needed in patients with pre-eclampsia.

**AVAILABILITY AND ACCESSIBILITY OF TRANSLATOR SERVICES IN MATERNITY CARE AT A LONDON TERTIARY CENTRE**

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**Problem statement:** It is well documented that Black and ethnically minoritised patients are at a greater risk of poor maternity outcomes. An important element that can contribute to this is language barriers which may exist within these populations. The use of translators in maternity care is vital to ensure safe and effective care throughout a patient's obstetric journey and into the postnatal period. This project sought to reveal the level of need vs utilisation of translators in our centre, in order to improve usage and hence reduce the impact of social determinants of health for this patient group. **Methods:** Patients were identified from a clinical information system used for patient booking into the maternity care service. Information regarding patients' first language, ethnic origin, interview difficulties and language literacy were pulled and screened. Women who had no interviewer difficulties recorded were excluded, the remaining cohort was reviewed to assess translator requirement. Once it was deemed translation services were necessary, patients were included in the final cohort; 20 patients sampled per each yearly quarter. Both antenatal and postnatal consultations were included based on specified inclusion and exclusion criteria. **Results:** A sample of 80 patients were analysed across a 1 year period. 31 languages were included with 10 different types of ethnicity recording. Antenatally 713 appointments were analysed and translators were used in 505 appointments (71%). Postnatally 313 consultations were analysed, with translator use in 86 of those appointments (27%). Type of translator varied antenatally vs postnatally; most common translator type antenatally was face-to-face, postnatally a relative/family member were more commonly used. **Conclusion:** Overall, translator use in the antenatal period showed promising results and good translator uptake by the service. Results from the postnatal period were significantly worse and highlighted a key area for improvement within the trust. The use of face-face translators remains the gold standard and should be used when possible. However, as we have seen during the COVID-19 pandemic, the evolving sophistication of modern technology provides an alternative medium for translator use which if utilised, could increase the use of translators on wards with a high turnover.

**EFFECT OF OLANZAPINE ON PROLACTIN LEVELS OF FEMALE PATIENTS WITH SCHIZOPHRENIA TREATED WITH RISPERIDONE**Won-Myong Bahk<sup>1</sup>, Young-Joon Kwon<sup>2</sup>, Bo-Hyun Yoon<sup>3</sup>, Kwanghun Lee<sup>4</sup>, Moon-Doo Kim<sup>5</sup><sup>1</sup>Psychiatry, Yeouido St. Marys Hospital, College of Medicine, The Catholic University of Korea, Seoul, South Korea<sup>2</sup>Psychiatry, Soonchunhyang University Cheonan Hospital, Soonchunhyang University, Cheonan, South Korea<sup>3</sup>Psychiatry, Naju National Hospital, Naju, South Korea<sup>4</sup>Psychiatry, College of Medicine, Dongguk University, Gyeongju, South Korea<sup>5</sup>Psychiatry, Jeju National University School of Medicine, Jeju, South Korea

**Problem statement:** This study was conducted to prospectively examine the effect of switching from risperidone to olanzapine on female schizophrenia patients who experienced menstrual disturbances, galactorrhea, and/or sexual dysfunction. **Methods:** Twenty female patients with DSM-IV schizophrenia who were taking risperidone and were suffering from menstrual disturbances, galactorrhea, and/or sexual dysfunction were enrolled. Patients were switched from risperidone to olanzapine over a 2-week period, then treated with olanzapine for 8 additional weeks. The serum prolactin concentrations were examined every 2 weeks. The Positive and Negative Syndrome Scale (PANSS), Abnormal Involuntary Movement Scale (AIMS), Simpson-Angus Scale for Extrapyramidal Symptoms (SAS), and questions from the Dickson-Glazer Sexual Functioning Scale were administered to evaluate efficacy, extrapyramidal side effects, and sexual and reproductive functioning at baseline and the endpoint of 10 weeks. **Results:** Serum prolactin levels decreased significantly (p .01) following the switch from risperidone to olanzapine. Scores of PANSS, AIMS, and SAS at the endpoint were also significantly decreased (p .01) compared to those of baseline. Patients experienced improvements in menstrual functioning and perceptions of sexual side effects. **Conclusion:** Olanzapine reversed hyperprolactinemia in risperidone-treated female schizophrenic patients. This was associated with a decrease in amenorrhea, improved cycle regularity, and a decrease in sexual side effects that the women attributed to antipsychotic medication. This study suggests that switching to olanzapine is a safe and effective alternative method for patients with antipsychotic-induced hyperprolactinemia associated sexual and/or reproductive dysfunction. Long-term follow-up studies are warranted, with particular attention to the course of sexual and reproductive dysfunction.

**A PLACEBO-CONTROLLED, DOUBLE-BLIND TRIAL OF GINKGO BILOBA FOR ANTIDEPRESSANT-INDUCED SEXUAL DYSFUNCTION**Moon-Doo Kim<sup>1</sup>, Won-Myong Bahk<sup>2</sup>, Young-Joon Kwon<sup>3</sup>, Bo-Hyun Yoon<sup>4</sup>, Kwanghun Lee<sup>5</sup><sup>1</sup>Department of Psychiatry, Jeju National University School of Medicine, Jeju, South Korea<sup>2</sup>Department of Psychiatry, Yeouido St. Marys Hospital, College of Medicine, The Catholic University of Korea, Seoul, South Korea<sup>3</sup>Department of Psychiatry, Soonchunhyang University Cheonan Hospital, Soonchunhyang University, Cheonan, South Korea<sup>4</sup>Department of Psychiatry, Naju National Hospital, Naju, South Korea<sup>5</sup>Department of Psychiatry, College of Medicine, Dongguk University, Gyeongju, South Korea

The aim of this study was to examine the effect of Ginkgo biloba on antidepressant-induced sexual dysfunction. The Ginkgo biloba (n=19) and the placebo groups (n=18) were divided; each to be administered with Ginkgo biloba and placebo respectively for 2 months by means of a randomized placebo-controlled, double-blind study. The results of this 2 month trial were: (1) there was no statistical significant difference from the placebo at weeks 2, 4 and 8 after medication; (2) in comparison with baseline, both the Ginkgo biloba group and the placebo group showed improvement in some part of the sexual function, which is suggestive of the importance of the placebo effect in assessing sexual function. This study did not replicate a prior positive finding supporting the use of Ginkgo biloba for antidepressant, especially SSRI, induced sexual dysfunction.

**FACTORS ASSOCIATED WITH ANTENATAL DEPRESSION IN PREGNANT KOREAN FEMALES: THE EFFECT OF BIPOLARITY ON DEPRESSIVE SYMPTOMS**Moon-Doo Kim<sup>1</sup>, Young-Eun Jung<sup>1</sup>, Won-Myong Bahk<sup>2</sup>, Young-Joon Kwon<sup>3</sup>, Bo-Hyun Yoon<sup>4</sup>, Kwanghun Lee<sup>5</sup><sup>1</sup>Department of Psychiatry, Jeju National University School of Medicine, Jeju, South Korea<sup>2</sup>Department of Psychiatry, Yeouido St. Marys Hospital, College of Medicine, The Catholic University of Korea, Seoul, South Korea<sup>3</sup>Department of Psychiatry, Soonchunhyang University Cheonan Hospital, Soonchunhyang University, Cheonan, South Korea<sup>4</sup>Department of Psychiatry, Naju National Hospital, Naju, South Korea<sup>5</sup>Department of Psychiatry, College of Medicine, Dongguk University, Gyeongju, South Korea

**Background:** This cross-sectional study sought to identify factors associated with antenatal depression in pregnant Korean females, including sociodemographic parameters, social support, social conflict, and bipolarity. **Methods:** Eighty-four pregnant women were





recruited to complete questionnaires on sociodemographic factors, obstetric history, depressive symptoms, and bipolarity. Depressive symptoms were assessed using the Korean version of the Edinburgh Postnatal Depression Scale. Bipolarity was assessed using the Korean version of the Mood Disorder Questionnaire. **Results:** Nineteen participants (22.6%) had positive Mood Disorder Questionnaire scores, suggesting the presence of bipolarity, and were significantly more likely to score high on the Edinburgh Postnatal Depression Scale. Antenatal depression was associated with bad marital communication and marital dissatisfaction. **Conclusion:** These results suggest that spousal interactions play a significant role in antenatal depression, and pregnant women with bipolarity may be more depressed than those without bipolarity.

### OBSESITY AND ITS POTENTIAL EFFECTS ON ANTIDEPRESSANT TREATMENT OUTCOMES IN PATIENTS WITH DEPRESSIVE DISORDERS: A LITERATURE REVIEW

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Accumulating evidence regarding clinical, neurobiological, genetic, and environmental factors suggests a bidirectional link between obesity and depressive disorders. Although a few studies have investigated the link between obesity/excess body weight and the response to antidepressants in depressive disorders, the effect of weight on treatment response remains poorly understood. In this review, we summarized recent data regarding the relationship between the response to antidepressants and obesity/excess body weight in clinical studies of patients with depressive disorders. Although several studies indicated an association between obesity/excess body weight and poor antidepressant responses, it is difficult to draw definitive conclusions due to the variability of subject composition and methodological differences among studies. Especially, differences in sex, age and menopausal status, depressive symptom subtypes, and antidepressants administered may have caused inconsistencies in the results among studies. The relationship between obesity/excess body weight and antidepressant responses should be investigated further in high-powered studies addressing the differential effects on subject characteristics and treatment. Moreover, future research should focus on the roles of mediating factors, such as inflammatory markers and neurocognitive performance, which may alter the antidepressant treatment outcome in patients with comorbid obesity and depressive disorder.

### AUDIT OF THE OUTCOME OF POST DATE PREGNANCY AFTER INDUCTION OF LABOR

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**Introduction and background:** Pregnancy beyond 42 weeks carries increased neonatal morbidity and mortality. 5% pregnancies go beyond 42 weeks. Nice recommendation is to discuss about the induction of labour at 38 weeks and offer IOL after 41 weeks and aim to deliver by 42 weeks. **Aims:** To look at the pregnancy outcome at Sandwell and West Birmingham Hospital (SWBH) after induction of labour at gestational age of 41 weeks and 3 days, and looking at the maternal outcome in terms of mode of delivery and neonatal outcomes. **Methods:** My project is a retrospective study that was carried out by analysing the outcome of post-date pregnancy after IOL in 78 patients in Sandwell and West Birmingham Hospital from 01/01/2023 TO 30/06/2023. **Results and discussion:** Gestational age at IOL  $\geq 41+3$ . Total number of cases: 78. Methods used for IOL proppess 61(78%), ARM 13(17%), prostin 2(3%), Balloon 2(3%) 2 cases underwent 2 cycles of IOL and 76 (97%) had 1 cycle of IOL. Primp 42 cases ( 54%), Multip 36 cases ( 46%). NVD 43 (55%) Operative Vaginal deliveries 17(22%), cesarean section 18 (23%). NNU admission 6(8%) due to sepsis and meconium aspiration, SD 2(3%), PPH 9 (12%), perineal tears 2(3%). Birth weight 3000 gm 4 (5%) 3000-3999 gm 64 (82%) 4000-4499 gm 10 (13%). **Conclusion:** In conclusion, IOL of post-date pregnancy between 41 and 42 weeks is associated with fewer perinatal deaths, significantly fewer cesarean section, and fewer cases of meconium aspiration syndrome. Stretch and sweep can be offered at 40 and 41 weeks for primis and 41 weeks

for multips. Women should be counselled regarding increased neonatal morbidity and mortality.

### COMPARATIVE STUDY OF COMPLICATIONS FOLLOWING POST-PLACENTAL INTRA UTERINE CONTRACEPTIVE DEVICE INSERTION AFTER VAGINAL DELIVERY VERSUS CESAREAN SECTION

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**Problem Statement:** To compare the acceptance, continuation, satisfaction rates of post placental intra uterine copper device (PPIUCD) and the complications of insertion after vaginal delivery versus caesarean section. **Material and methods:** This was a prospective study done to compare the acceptance of post placental insertion of IUCD in women after she delivers either vaginally or by cesarean section. The women were followed up for a period of 6 months to assess for any immediate or delayed complications due to insertion. **Results:** Rate of acceptance of IUCD was significantly more in cesarean group than women with 28.9% compared to 20.48% in normal vaginal delivery (NVD) group which was statistically significant. Acceptance was more in women with age between 26-30 years. Most common reasons of acceptance in both groups were long acting nature and reversibility of IUCD and commonest reason for denial in both groups was fear of displacement and migration. Two groups were comparable for their complication rate with 34% and 33% in NVD group and cesarean group. Out of 100 women in each group 10% in NVD and 13% in caesareans had AUB, 13% in NVD and 8% in cesarean group had pain and discomfort due to IUCD. Twelve women in NVD group and four women in cesarean group had complete expulsion. More expulsions were in NVD group with statistically significant difference. Amongst two groups, 16% women in NVD group and 10% women in cesarean group had non-visibility of threads on speculum examination. There was no case of contraceptive failure by the end of 6 months. In NVD group 14% and in 15% in cesarean group got IUCD removal. The commonest reason for removal was pain and discomfort in NVD group and AUB and vaginal discharge in cesarean group. During follow up of 6 months no case with PID was observed in either group. Satisfaction rates were higher in cesarean group (82% versus 74%) compared to NVD but difference was not statistically significant. **Conclusion:** Insertion of post placental IUCD immediately following delivery is effective, safe, cheap, long term, reversible contraception following either normal delivery or cesarean section.

## MODERATED E-POSTER ABSTRACTS

### MODERATED E-POSTER SESSION 1 - ART/IVF/INFERTILITY

#### TREATMENT WITH MYO-INOSITOL TO D-CHIRO INSOSITOL 3.6:1 RATIO-BASED FOOF SUPPLEMENT IN WOMEN WITH HISTORY OF ASSISTED REPRODUCTIVE TECHNIQUES FAILURES: A SERIES OF CASE REPORTS

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**Problem statement:** Infertility is estimated to affect 15% of couples in reproductive age worldwide. In women, it can be caused by a complex range of abnormalities. Currently, there are many assisted reproduction techniques (ART) available, however they do not guarantee positive results. The administration of a Myo-inositol (MYO):D-chiro-inositol (DCI) 3.6:1 ratio has been proven to significantly increase pregnancy and live birth rates in randomized clinical trials. In this series of case reports, a specific MYO:DCI 3.6:1 ratio-based food supplement, enriched with antioxidants, vitamins, and minerals was assessed in improving fertility in women that had previously undergone failed ART. **Methods:** Here we present a series of case reports involving 5 patients who attended 5 different fertility clinics across Spain during 2022. The women attended the fertility





clinic due to experiencing infertility of 1-3 years of evolution. All the patients had previously undergone failed ART. Therefore, each was recommended another ART cycle with prior treatment using a food supplement containing: Caronositol® (MYO:DCI 3.6:1 ratio), Pomanox® P30 (Punica granatum extract), melatonin and the following vitamins and minerals: Quatrefolic® (5-methyltetrahydrofolate), group B vitamins, D3, E, zinc, selenium and iodine. Each women took 2 capsules daily for 1-3 months. **Results:** The women had an average age of 35 years, 4 of them had 2-3 previously failed in vitro fertilization (IVF), and 1 had 4 previously failed intrauterine inseminations. In all cases, pregnancy was achieved in a short period of time (1-3 months), after receiving supplementation with 3.6:1 MYO to DCI ratio-based food supplement and undergoing IVF. **Conclusion:** In this series of case reports we provide preliminary evidence that supplementation with a specific 3.6:1 MYO to DCI ratio, as well as antioxidants, vitamins, and minerals may contribute positively to female fertility in women undergoing IVF, with a history of primary or secondary infertility and previously failed ART.

#### COMPARISON OF CONTROLLED OVARIAN STIMULATION IN DIFFERENT PHASES OF MENSTRUAL CYCLE AMONG OOCYTE DONORS

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**Problem statement:** In the last decades, both demand and indications for oocyte donation (OD) have increased. Selection of the optimal type of stimulation is paramount importance to achieve the most favorable outcomes in a short time for the oocyte recipients. Controlled ovarian stimulation (COS) during In Vitro Fertilization (IVF) traditionally is started on the 2nd or 3rd day of menstrual cycle. Recent studies indicate that in the same menstrual cycle, there are several follicular recruitment waves. This has led to the hypothesis that COS may be started not only in the early follicular phase. It gives new opportunities to clinicians to utilize COS especially in oocyte donors (ODs). At this time, there are limited studies about the outcomes of COS in luteal phase. Therefore, the study aimed to assess whether luteal phase ovarian stimulation (LPOS) presents similar efficacy in terms of oocyte yield compared with conventional follicular phase ovarian stimulation (FPOS) in oocyte donors or not. **Methods:** 107 ODs participated in this prospective, randomized study. The study population was divided into two groups: Group I (n=56) with FPOS and Group II (n=51) with LPOS. All participants proceed COS with a short antagonist protocol. The main outcome was the total number and metaphase II (MII) oocytes obtained by follicular transvaginal aspiration. **Results:** There were no statistically significant differences in the number of received and MII oocytes between the LPOS and FPOS (25.5 vs 26.6 p=0.76), (20.9 vs 22.2 p=0.42) respectively. Duration of stimulation was similar also in both groups (11.3 vs 11.5 days, p=0.67). Similarly, there was no statistically significant difference in the total dose of gonadotropins (2752,8IU vs 2740,9IU p=0.95) and the pick of estradiol levels (4305,0pg/ml vs 4368,7pg/ml, p=0.92) respectively. **Conclusion:** The results of the present study demonstrate the equal effectiveness of COS in different phases of the menstrual cycle. Starting COS in the luteal phase may shorten the time of oocyte receiving without compromising of the number and quality. This allows clinicians to develop personalized approach as in ODs as well as in routine practice of IVF.

#### POST-THAW VIABILITY OF CANINE FOLLICLES CRYOPRESERVED WITH DIFFERENT METHODS

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There is an increased interest and practical potential in the application of ovarian preantral follicles (PAF). Follicle in vitro culture (FIVC) could provide access to high numbers of oocytes which can be matured and fertilized in vitro. Follicles can be cryopreserved (CP) before chemotherapy/radiotherapy to obtain oocytes without hormonal treatment. Moreover, CP of PAFs can be efficient in mammalian gene preservation, regardless of the age or reproductive phase. Beside the veterinary point of view, dogs are suitable translational models for a variety of biomedical research. However, there are no standardized methods for FIVC and CP of canine follicles. The aim of our study was to assess the effect of different cryopreservation methods and devices

on post-thaw IVC of canine preantral follicles. PAFs were isolated from canine ovaries applying with collagenase treatment and divided into 3 groups: fresh, cryotube cryopreservation (CT) and open pulled straw vitrification (OPS). Live cell rate of follicles and oocyte viability were analyzed immediately after isolation (fresh) or thawing (CT and OPS). Then, PAFs of each group were cultured in vitro for 10 days. Survival rate, area change (in  $\mu\text{m}^2$ ), estradiol production and hCG-induced ovulation rate were examined. Follicles of CT has lower live cell (58.7%) and oocyte survival rate (38.8%) than that of fresh ones (83.6% and 64%, respectively) and follicles of OPS group (80.3% and 79.3%, respectively). PAF survival rate during the IVC was also lower in CT (81.2%) than that of fresh (98.5%) and OPS (95.4%) groups. Fresh follicles showed continuously increasing area and estradiol production, while PAFs of OPS increased their size until Day5, and their estradiol production elevated from Day2-Day10. PAFs of CT stopped their growth after Day2 and their overall estradiol production hasn't changed between Day2 and Day10. HCG-induced ovulation rate were low in all of the groups (7%, 8.9% and 1.7% in fresh, CT and OPS, respectively). Our data show that OPS can be used to preserve canine isolated PAFs, however, refinement of the system is needed. In conclusion, to our knowledge, these are the first results on comparing different cryopreservation protocols on canine isolated preantral follicles.

#### MODERATED E-POSTER SESSION 2 - OTHER

##### PREVALENCE AND RISK FACTORS OF PERIPARTUM DEPRESSION AMONG WOMEN IN THE PRENATAL AND POSTNATAL PERIOD IN A TERTIARY HOSPITAL

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**Problem Statement:** Postpartum Depression is now recognized as "Major Depression, with Peripartum Onset" in the Diagnostic and Statistical Manual of Mental Disorders (DSM-V) after it was observed that fifty percent of these cases actually began antenatally. While postpartum depression is known to affect 10-20% of women globally, no further studies in the Philippines have been made to assess the prevalence of antenatal depression. Hence, this study was conducted to determine the prevalence and associated risk factors of Peripartum Depression among pregnant and postpartum women in a tertiary hospital in Davao City. **Methods:** This cross-sectional study was conducted among pregnant women in the second or third trimester and postpartum women who delivered within 2-6 weeks (N=138). They completed a sociodemographic questionnaire and the Edinburgh Postnatal Depression Scale (EPDS). **Results:** Out of the 138 participants included in the study, 24 women scored 12 or higher in the EPDS, indicating a higher probability of depression. None of the 24 participants scored at least 1 point in the number 10 EPDS question regarding suicidal ideation. The post-partum group had a significantly higher prevalence rate of scoring 12 or more in the EPDS at 23%, compared to the antepartum group with a prevalence rate of 12% (P=0.036). The significant risk factors associated with its development postpartum were being married for less than a year, having a planned pregnancy, and having a history of pregnancy loss. On the other hand, the study could not determine which among the several socio-demographic or clinical variables were significant risk factors for developing depression among the pregnant group.

**Conclusion:** The results supported the findings of previous studies worldwide. This points to an urgent need for healthcare providers to detect the incidence of depression among pregnant and postpartum women through screening during their prenatal and postpartum visits to carry out an early intervention.

##### MENSTRUAL CYCLE MANAGEMENT AND PERIOD TRACKER APPLICATION USAGE IN MILLENNIALS AND GENERATION Z-CASE OF SOUTH KOREA

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**Problem statement:** Menstruation has a significant impact on the daily life and health of women. Since many women have difficulties in daily life due to premenstrual syndrome and dysmenorrhea, it is important to identify, prepare for, and manage the menstrual cycle in advance. In 2013, period tracker app was released on the market, it proposed a new way to manage women's menstrual cycle. This study aims to identify the relationship between menstruation-related experiences and app use and find out status of period tracker app usage for the Millennials and GenZ. **Methods:** An explanatory sequential design mixed methods approach was used. The



quantitative data were collected by survey of 700 women in 20-39 and qualitative data was collected by focus group interview for 8 people (4 app users and 4 non-app users). Multinomial logistic regression model was used to assess which variable predicted the use of period tracker apps by survey participants. Generalized linear model was used to assess the influence of social factor and menstrual experience factors on cycle management level. **Results:** In the context of a logistic regression analysis aimed at identifying factors influencing the usage of period tracker apps, marriage, childbirth experience, number of premenstrual syndrome (PMS) symptoms, and number of dysmenorrhea symptoms demonstrated notable significance (as shown in Table 1). Women with childbirth experience exhibited an odds ratio of 0.495. Furthermore, the analysis revealed that the number of dysmenorrhea symptoms experienced by women and the level of cycle management both exhibited elevated odds ratios for using period tracker applications. Moreover, childbirth experience, period irregularity were negatively associated with cycle management level while education level has positive association. **Conclusion:** Period tracker applications are popular period management method in aged 20-39 women. 61.8% women in age 20-39 are using period tracker app in South Korea. We determine predictors affect to likelihood of period tracker applications and variables influences on cycle management level. This result makes better understanding of menstrual experience and period management in millennials and gen Z. Furthermore, we also deeply explore their behavior regarding period tracker applications. This study was supported by the Healthcare Management Research Fund of Yonsei University Graduate School of Public Health.

#### SWITCHING ANTIPSYCHOTICS TO BLONASERIN IN PATIENT WITH SCHIZOPHRENIA: AN OPEN-LABEL, PROSPECTIVE, MULTICENTER STUDY

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**Objective:** This study was performed to investigate the efficacy and tolerability of blonaserin in schizophrenic patients who were previously treated with other antipsychotics but, due to insufficient response, were switched to blonaserin. **Methods:** A total of 52 patients with schizophrenia who were unresponsive to treatment with antipsychotic monotherapy or combination therapy were recruited into this 12-week, open-label, prospective, multi-center study. Patients were switched to blonaserin from their existing antipsychotics over a maximum 2-week tapering-off period. Efficacy was primarily evaluated using the 18-item Brief Psychiatric Rating Scale (BPRS). Assessment was performed at baseline, and at weeks 1, 2, 4, 8, and 12. **Results:** Switching to blonaserin resulted in a significant decrease in the mean total score on the BPRS from baseline (56.8±9.4) to week 12 (42.1±13.8, p<0.001). The most common adverse events were extrapyramidal symptoms (n=12, 23.1%), insomnia (n=10, 19.2%), and emotional arousal (n=6, 11.5%). Overweight or obese patients who switched to blonaserin exhibited significant weight loss from 75.2±9.3kg at baseline to 73.5±9.2kg at week 12 (p=0.006). The total cholesterol (baseline, 236.1±47.6 mg/dl; endpoint [week 12], 209.28.0 md/dl; p=0.005) and prolactin levels (baseline, 80.0±85.2 ng/ml; endpoint [week 12] 63.2±88.9 ng/ml; p=0.003) were also significantly improved in patients with hypercholesterolemia or hyperprolactinemia. **Conclusion:** The results of the present study suggest the switching to blonaserin may be an effective strategy for schizophrenic patients unresponsive to other antipsychotic treatments.

#### MODERATED E-POSTER SESSION 3 - GYNECOLOGICAL ONCOLOGY & GYNECOLOGY

##### ITS HAIRSTORY: A RARE CASE OF OVARIAN STEROID CELL TUMOR (SCT) IN A YOUNG FILIPINO FEMALE: A CASE REPORT

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Hirsutism, excessive male-pattern hair growth is devastating for an adolescent female. Causes include benign and malignant conditions with different prognosis and treatment, hence, warranting thorough work-up. A 17-year-old nulligravid complained of hirsutism and amenorrhea. Born full term to a 30-year-old secundigravid with unremarkable appearance. History started when she noticed growth of coarse hair on chest, forearms, legs, upper lip and chin with no

constitutional symptoms. No prior consultations until parents grew anxious from the persistent amenorrhea and worsening hirsutism. Initially, managed as a case of primary amenorrhea with severe hirsutism considerations include Cushing syndrome, Polycystic ovarian syndrome, HAIR-AN Syndrome and late onset non-classical congenital adrenal hyperplasia. She is obese (BMI 37.3) with hair thinning in the vertex, and severe hirsutism on upper lip and chin. She has breast Tanner stage 5 and hirsutism with hyperpigmentation and multiple striae distensae on chest, axilla, abdomen and lower extremities. Pelvic examination revealed coarse and sparse pubic hair (Tanner Stage 5) with clitoromegaly. Transrectal ultrasound demonstrated an irregular heterogeneous solid mass at the right adnexa measuring 5.5 x 4.5 x 4.5 cm with cystic areas. On abdominal computed tomography scan, the same mass was described with normal adrenal glands. The assessment was ovarian new growth, right, probably malignant. She underwent unilateral salpingo-oophorectomy, frozen section showing stromal tumor component admixed with sex-cord component. Surgical team proceeded with complete staging. Intraoperatively, the right ovary was converted to a solid, well-circumscribed, yellow mass measuring 5.5 x 5.0 x 3.5 cm with no areas of hemorrhage or necrosis, surrounded by thin rim of ovarian parenchyma measuring 0.3 cm. Microscopically, it has lobules separated by thin fibrous septa. Tumor cells were granular eosinophilic, vacuolated with lipid rich cytoplasm. The final histopathologic diagnosis was ovarian pure stromal tumor, primary consideration is steroid cell tumor, not otherwise specified (NOS). Final diagnosis was steroid cell tumor stage 1A. No adjuvant therapy was given. Multiple subspecialties contributed to the holistic management of the case addressing the problem that is neither skin deep nor does end in removing the pathology. The successful outcome was attributed to timely diagnosis, good communication, and complete surgical management.

#### WORK RELATED MUSCULOSKELETAL DISORDERS AMONG SURGEONS PERFORMING MINIMALLY INVASIVE SURGERY IN SOUTHERN PHILIPPINES MEDICAL CENTER

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**Introduction:** Work-related musculoskeletal disorders are considered as a significant health especially among surgeons practicing minimally invasive surgery. **Objectives:** The study aims to determine the prevalence of work-related musculoskeletal disorders among laparoscopic surgeons in a tertiary hospital. **Methods:** A prospective cross-sectional study was conducted among surgeons practicing minimally invasive surgery in a tertiary hospital using the Nordic Musculoskeletal Disorder Questionnaire. **Results:** Twenty-one surgeons were included in the study with age range of 40 to 77 years old and a mean age of 49.5238 ±10.41930. Majority (47.6%) belonged to 46-61 years old category. A great number of the subjects were overweight at 61.9% and most of them used the glove size of 7.0 or 7.5 at 33.3% respectively. Most of the subjects belonged to the specialty of General Surgery at 61.9% while 19% were practicing Gynecology and Urology. Among the 21 subjects, 33.3% of them are practicing minimally invasive surgery for 11-15 years with 33.3% of were performing 41-100 surgeries annually. A large part of the participants had no existing musculoskeletal disorders at 66.7% while 9.6% of them reported lower back pain as their existing injury. For the past 12 months, it has been shown that the surgeons had trouble at any time in the different parts of the body in the following order: lower back 13/21 (61.9%), neck 12/21 (57.1%), in the shoulders 10/21 (47.6%), upper back 9/21 (42.9%), wrists/hands 9/21 (42.9%), knees 7/21 (33.3%), ankles/feet 3/21 (14.3%), elbows 2/21 (9.5%) and hips/thighs 1/21 (4.8%). **Conclusion:** It has been shown that majority of the subjects suffered from musculoskeletal disorders and the common areas involved are the lower back, neck and shoulders. Some of them were even prevented to perform normal activities like doing their job, house work or hobbies. **Keywords:** work related musculoskeletal disorders, minimally invasive surgeons, ergonomics

#### GENITAL HERPES ZOSTER – AN UNUSUAL BUT IMPORTANT CAUSE OF ACUTE NONTRAUMATIC VULVAR ULCERS

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**Problem statement:** Herpes zoster is an acute painful vesicular skin eruption with unilateral dermatomal involvement caused by the reactivation of varicella-zoster virus (VZV). Genital herpes zoster





(GHZ) represents around 2% of acute nontraumatic genital ulcers. Although herpes-simplex virus are the major cause of nontraumatic genital ulcers, VZV may also be the cause for this pathology, with impact in treatment and follow-up. **Methods:** Clinical case description and literature review. Verbal patient consent was taken. **Results:** A 69-years-old woman (IGIP, diabetic, with prior, in-remission, gastric adenocarcinoma, and no active sexual life for two years) was observed in the Emergency Service (ES) due to painful ulcers in the left inner labia and vulvar bleeding, with 3 days of evolution. Left vulvar ulcers were observed in the gynecological exam, with no other remarks. A lesion swab was taken for molecular biology and serologies were requested. Valaciclovir 1000mg 1id, fluconazol and cinchocaine were prescribed. The patient returned to the ES 24 hours later, due to worsening lesions and pain. Ulcers were present from the left minora and majora labia to the inner left intergluteal region; edema was present in labia minora bilaterally. The clinical diagnosis of genital herpes zoster (GHZ) was made, valaciclovir was adjusted to 3id and analgesia was escalated. The patient was unsure about a prior history of varicella, episodes of shingles and herpes and did not receive herpes-zoster vaccination. In a follow-up visit in clinic, 4 weeks later, the patient referred resolution of all symptoms, with full disappearance of the vulvar ulcers and persistence of a small number of consolidated perianal lesions. The lesion swab was positive for Varicella-Zoster, confirming the diagnosis of GHZ. Serologies were negative for HIV, hepatitis B and syphilis, and showed previous contact with cytomegalovirus and herpesvirus I. **Conclusion:** GHZ should be considered in the differential diagnosis of genital ulcers, as treatment protocol and advice towards recurrence, virus source and transmission will differ from the one given to patients with herpes-simplex virus infection.

#### HERBAL MEDICINE (TAOHONG SIWU TANG) FOR THE TREATMENT OF PRIMARY DYSMENORRHEA: A SYSTEMATIC REVIEW AND META-ANALYSIS

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**Background:** Tao-Hong Siwu Tang (TST) is a herbal medicine consisting of Angelicae gigantis, Persicae Semen, Ligustici Rhizoma, Carthami Flos, Rehmanniae Radix Preparata, and Paeoniae Radix Alba. It was first described in the (Golden Mirror of Medicine, 醫宗金鑑), and has been widely used for the treatment of menstrual dysfunctions, such as primary dysmenorrhea, menorrhagia, and amenorrhea in East Asia. Despite its wide use in clinical settings, experimental and clinical studies on TST are not sufficient. In addition, no systematic reviews have been performed to evaluate the efficacy of TST in primary dysmenorrhea. Therefore, we aimed to perform a systematic review on the efficacy and safety of TST in the treatment of primary dysmenorrhea. **Methods:** We searched four English databases (MEDLINE, EMBASE, Allied and Complementary Medicine Database, and Cochrane Central Register of Controlled Trials [CENTRAL, Cochrane Library]), three Chinese databases (China National Knowledge Infrastructure, Wanfang, and Chinese Science and Technology Periodical Database), two Korean databases and one Japanese database. All randomized controlled trials (RCTs) using TST or modified TST (MTST) were included. Three independent reviewers extracted the data, assessed the risk of bias according to the Cochrane criteria, and performed a meta-analysis. **Results:** A total of 85 possibly relevant articles were identified, and five trials met our inclusion criteria. The meta analysis showed a favorable effect of MTST compared to non-steroidal anti-inflammatory drugs (NSAIDs) (n = 486, risk ratio [RR] = 1.53, 95% confidence interval [95% CI] = 1.37-1.72, I<sup>2</sup> = 39%). Among the included trials, one RCT showed superior effects of MTST on primary dysmenorrhea recurrence rate compared to NSAIDs (n = 246, RR = 0.31, 95% CI = 0.15-0.63, P = 0.001). Another RCT revealed a beneficial impact of oral contraceptives (OCs) used in combination with TST compared to OCs alone (n = 60, RR = 1.35, 95% CI = 1.02-1.79, P = 0.04). **Conclusion:** This systematic review and meta-analysis provides moderate quality evidence for the superiority of MTST over NSAIDs as well as that of TST plus OCs over OCs in the treatment of primary dysmenorrhea.

#### MODERATED E-POSTER SESSION 4 - FETOMATERNAL MEDICINE

##### HIV INFECTION AND POSTPARTUM HAEMORRHAGE IN A LOW-MIDDLE INCOME SETTING: A RETROSPECTIVE CROSS-SECTIONAL STUDY IN DAR ES SALAAM, TANZANIA

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**Problem Statement:** Each year approximately 300,000 women die during pregnancy and childbirth. Maternal deaths are mostly preventable, with the majority (94%) occurring in lower-income regions like Sub-Saharan Africa (SSA). Similar trends are observed in the distribution of HIV infection, with the World Health Organisation (WHO) African region experiencing 67% of global HIV infections. Young women and girls (aged 15-24) in SSA are particularly affected, accounting for 61% of all young people living with HIV in the region. Postpartum haemorrhage (PPH) is the leading direct cause of maternal mortality, with HIV as the leading indirect cause. Existing literature is inconclusive on this association, this study will contribute to the evidence base by conducting a study in a high-risk Sub-Saharan African population. **Methods:** Design: A Retrospective cross-sectional study. Setting: Muhimbili National Hospital, Dar Es Salaam, Tanzania. A large public tertiary referral centre in a low-middle income, urban setting. **Participants:** This study included the medical records of all 1,105 deliveries at Muhimbili Hospital from 01/11/2021 to 31/01/2022. **Data Collection and Analysis:** Data was collected from a mixture of digital and physical medical records at Muhimbili National Hospital. PPH was diagnosed using the estimated blood loss. Anaemia has associations with both PPH and HIV, so haemoglobin levels were included for secondary analysis. Risk factors for PPH were also included in this study. STATA SE (version 16.1) was used for analysis of the data. **Results and Conclusions:** One thousand and ninety-eight records were included, the HIV prevalence within this population was 3.7% (n=41) and the prevalence of postpartum haemorrhage was 40.1% (n=449). There was no statistically significant difference in odds of postpartum haemorrhage between HIV positive and HIV negative groups. Anaemia prevalence was 48% (526), with a higher prevalence within the HIV positive group (58%) than HIV negative (48%) although this difference in odds was not significant at the 95% level. The results showed no evidence for a relationship between HIV infection and PPH. More studies with a larger sample of HIV positive patients would be advised, along with inclusion of factors for socio-economic status.

##### PREVALENCE OF HIP AND LGA DURING THE COVID-19 PANDEMIC

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**Problem Statement:** During the COVID-19 pandemic efforts were made to reduce the contact of pregnant women with hospital facilities in Belgium. This included scattered efforts to reformulate high-contact GD (Gestational Diabetes) screening with OGTT (Oral Glucose Tolerance Test), with suitable proxy-screening. Our hypothesis was that a proxy-screening would lower the prevalence of GD leading to missed GD diagnosis and a consequent higher prevalence of LGA (Large for Gestational Age) babies. **Methods:** We used the Belgian live-births registry, and we included all singleton live births. The registry classifies as "diabetes" both GD and pregestational diabetes, but it is known that pregestational diabetes accounts only to 3% of the total. The prevalence that we collected is therefore that of HIP (Hyperglycemia In Pregnancy). We performed month-by-month comparison of HIP prevalence and LGA prevalence at birth between 2019 (non-pandemic year, standard screening) and 2020 (pandemic year, proxy-screening). We calculated raw percentages and aOR (comparing 2019 and 2020) of HIP and LGA, with correction for maternal BMI, nationality and socioeconomic status. **Results:** In 2020 there was a higher prevalence of HIP, compared to 2019, in all months except April and May, even after correction for confounding factors. The two months of 2020 with the highest increase in prevalence were July (aOR 1.4; 1.26-1.56) and November (aOR 1.35; 1.21-1.51), in both cases the birthdates corresponded to a plausible GD screening date done during lockdown. No increase in the prevalence of LGA was observed between 2019 and 2020. **Conclusions:** Even if screened by proxy-screening, the prevalence of HIP increased in 2020 compared to 2019, but there was no increase in the prevalence of LGA. The increase of HIP in 2020 is likely to be due to an increase in





mild cases of GD, because of increased stress and sedentary lifestyle during lockdown. Likely missed cases due to proxy-screening did not impact the prevalence of LGA.

### PREVALENCE AND RISK FACTORS OF OCCULT BACTERIAL VAGINOSIS AMONG PREGNANT WOMEN IN A TERTIARY HOSPITAL IN DAVAO CITY

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**Problem statement:** What is the prevalence of occult Bacterial Vaginosis and its risk factors among pregnant women in a tertiary hospital in Davao City? **Methods:** A total of 70 asymptomatic pregnant women aged 18-40 years old who were seen at the Davao Doctors Hospital clinic were selected and screened for Bacterial Vaginosis using the Nugent Scoring System. Mean and standard deviation was used for the continuous data whereas frequency and percentage were used for the categorical data. Binary logistic regression analysis was used for determining the risk factors associated with Bacterial Vaginosis. Statistical Significance was set at P<0.05. **Results:** The prevalence of occult Bacterial Vaginosis was 11.4% among pregnant women. Factors such as a history of lower genital tract infection (Odds Ratio (OR)=11.635), increasing age (OR=1.096), older age of coitarche (OR=1.010), and the frequency of unprotected sex (OR=1.019) were all increased in this study but were not statistically significant. Multiple lifetime sexual partners (OR=1.971; P-value=0.048) was found to be significantly associated with the prevalence of Bacterial Vaginosis. **Conclusion:** The prevalence of occult Bacterial Vaginosis among pregnant women was at par with the multiple lifetime sexual partner as a risk factor.

### PLACENTAL GLUCOSE TRANSPORTER EXPRESSION IN PREGNANCIES WITH ALTERED FETAL GROWTH

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**Problem Statement:** During the critical period of fetal growth and development, glucose concentration in fetal circulation is principally dependent on maternal glucose levels, uteroplacental blood flow, placental glucose utilization, and placental glucose transporter (GLUT) activity. The correlation between how placental glucose transport function is affected by gestational diabetes and fetal growth restriction (FGR) remains poorly understood. We evaluated the expression of facilitated glucose transporter genes (GLUT 1, 3, 4, 8, 9, and 12) in the placentas of pregnant women with gestational diabetes mellitus (GDM) and FGR subtypes (early and late). **Methods:** Placentas were collected from 9 healthy controls, 14 early FGR women, 5 late FGR women, and 8 GDM women at University College Hospital with informed consent and ethical approval. 1 x 1 cm cubes of villous tissue were snap-frozen using liquid nitrogen and stored at -80°C. Following RNA extraction and reverse transcription, RT-qPCR was performed to determine GLUT and SNAT gene expression relative to endogenous controls: GAPDH (NM\_002046), and SDHA (NM\_001294332). Inter-group comparisons were performed using a two-way ANOVA test (numerical data) and Chi-square (categorical data). **Results:** Pregnancies with early FGR, late FGR, and GDM had lighter neonatal birthweight than the normal control. In early FGR placentas, the expression of GLUT1 (mean difference [95% CI] = 0.55, [0.18, 0.93]) and GLUT12 (mean difference [95% CI] = 0.99, [0.62, 1.37]) was downregulated. Placentas from late FGR pregnancy had the GLUT 1 expression lower than the control (mean difference [95% CI] = 0.54, [0.05, 1.01]). GDM placentas did not show differences in the GLUT genes from normal placentas. **Discussion:** Pregnancy with FGR mainly lowered the expression of the GLUT 1 gene. In early FGR, GLUT 12 gene was also affected. GDM is a less important determinant of human placental GLUT expression. However, the abundance of placental glucose transporter proteins was not measured in this study. The findings may help us understand how pregnancy conditions affect the placental glucose transport function to underlie abnormal fetal growth and neonatal birthweight.

### EFFECT OF PREMATURE PLACENTAL AGING IN MATERNAL AND FETAL OUTCOMES IN A TERTIARY HOSPITAL IN DAVAO CITY, PHILIPPINES, A PROSPECTIVE COHORT STUDY

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The placenta is essential to fetal well-being and growth. Placental calcification is a normal feature of maturation diagnosed by ultrasound using Grannum grading 0 to III. Grannum grade III is physiologic at term, however, presence prior to 37 weeks gestation is termed as premature placental aging. This prospective cohort study determined the relationship between premature placental aging and adverse maternal and fetal outcomes. Low risk obstetric patients were recruited and monthly ultrasound were performed beginning 28 weeks gestation. The patients were classified into 3 groups, group 1: the early preterm group with placental calcification prior to 32 weeks (n=0); group 2: the late preterm group with placental calcification found between 32 to 36 6/7 weeks (n=36); and group 3: the control group (n=68), no placental calcification seen before 37 weeks. Maternal outcomes evaluated were postpartum hemorrhage, gestational hypertension, placenta abruptio and maternal transfer to ICU. Fetal outcomes evaluated were preterm delivery, low birth weight, low APGAR score, meconium staining and neonatal death. There were no significant differences for maternal and fetal outcomes in both treatment and control groups. However, there is 2.401 times the chance of gestational hypertension (OR=2.401, 95% CI 0.126 to 45.728, P=0.560), 2.398 times the chance of placental abruptio (OR=2.398, 95% CI 0.278-20.704, P=0.427), 1.321 increased chance of induction of labor (OR=1.321, 95% CI 0.363 to 4.804, P=0.678) and 1.073 times chance of preterm birth (OR=1.073, 95% CI 0.126-2.381, P=0.423) in treatment group 2 compared to control groups. Grade III placenta and significant placental calcifications are typical of the late term and post term periods, and hence their identification prematurely raises concern for placental dysmaturity. Premature placental calcification should be considered as one of the reasons of underlying placental dysfunction and not merely a physiologic aging process. Preterm placental calcifications appears to be a risk factor for labor induction, abruptio placenta, gestational hypertension and preterm birth. Preterm placental calcifications did not appear to be associated with post partum hemorrhage, maternal transfer to ICU, low birth weight, meconium staining and neonatal death.

### 6Q22.31Q23.3 INTERSTITIAL DELETION: A RARE PRENATAL DIAGNOSIS

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**Problem statement:** Interstitial deletions in the proximal region of the long arm of chromosome 6 are a rare finding, and only a few cases were published. The severity of the condition and the signs and symptoms depend on the size and location of the deletion and which genes are involved. The abnormalities in the affected infants and children can include developmental delay, intellectual disability, behavioral problems, growth retardation, cardiac anomalies, dysmorphic features, upper limb malformations, and Prader-Willi-like features. **Methods:** A case report was performed through access to clinical records and exam reports of the patient. **Results:** A 29-year-old woman presented at our hospital to perform the routine first trimester scan and screening, which revealed a nuchal translucency above the 99th centile. After counselling, a chorionic villus sampling (CVS) was performed at 12 weeks + 4 days without complications. The Array Comparative Genomic Hybridization (aCGH) revealed a pathogenic interstitial deletion of the chromosome 6 at 6q22.31q23.3, involving the EYA4 gene. The follow up scan after the CVS, at 14 weeks + 3 days, demonstrated a reduced volume of amniotic fluid, evidence of retrognathism, and a fetal growth below the expected. The couple's request for medical termination of the pregnancy was accepted by the ethics committee. **Conclusion:** At prenatal level, chromosome abnormalities still constitute a challenge in genetic counselling, particularly due to its low incidence. In this case, the interstitial deletion of the chromosome 6 was located at 6q22.31q23.3. The bibliographic consultation carried out during the study identified an individual with a superimposable deletion, whose phenotype included developmental delay, craniosynostosis and other minor anomalies. Furthermore, the deletion identified in the case described in this abstract included the EYA4 gene, which is linked to type 10 autosomal dominant deafness.



**MOSAICISM TRISOMY 5: A RARE PRENATAL DIAGNOSIS**

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**Problem statement:** Chromosomal mosaicism is defined as the presence of two or more different cell lines in an organism that originates from the same embryo. Mosaic trisomy 5 is a rare chromosomal disorder, with very few cases reported in liveborns. The phenotype of these individuals is variable, depending on the size and location of the duplication and whether there is loss of material from the chromosome. The abnormalities in the affected infants and children can include hypotonia, macrocephaly, arachnodactyly, psychomotor impairment, cardiac abnormalities, and seizures. **Methods:** A case report was performed through access to clinical records and exam reports of the patient. **Results:** A healthy 37-year-old woman presented at our hospital to perform the routine first trimester scan and screening, which revealed a high risk for trisomy 13 (1:93). After counselling, a noninvasive prenatal testing (NIPT) was performed, and was positive for trisomy 5. An amniocentesis was performed, and the Array Comparative Genomic Hybridization (aCGH) confirmed the diagnosis – a mosaic trisomy 5. At 19 weeks of pregnancy, a fetal echocardiogram revealed a congenital heart disease with severe pulmonary artery stenosis with poor prognosis in the neonatal period. The couple's request for medical termination of the pregnancy was accepted by the ethics committee. **Conclusion:** At prenatal level, mosaicism constitutes a challenge in genetic counselling, particularly in the case of mosaic trisomy 5 due to its low incidence. In the case presented here, the mosaic trisomy 5 resulted in a congenital heart disease with poor prognosis in the neonatal period, leading the couple to request for medical termination of the pregnancy.

**METFORMIN VERSUS INSULIN IN THE MANAGEMENT OF GESTATIONAL DIABETES MELLITUS: A META-ANALYSIS**

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**Objective:** To determine the efficacy of metformin and insulin in the management of gestational diabetes mellitus. **Methods:** Randomized controlled trials were retrieved from databases. Studies included were limited to trials on metformin and insulin in the management of Gestational Diabetes Mellitus in singleton pregnancies. Four randomized controlled trials were analyzed in the study. The risk of bias was assessed using PRISMA Cochrane Collaboration's tool (Rob 2). Random effects meta-analysis was carried out to pool the data. All analyses were conducted in Review Manager 5.3.5 (2014). **Results:** Meta-analysis of four randomized controlled trials involving 807 participants (405 were treated with metformin and 402 were treated with insulin) shows that there was no significant difference between metformin and insulin in achieving glycemic control as to fasting blood sugar, postprandial blood glucose and HbA1c, MD -0.43 (95% CI -2.77 to 1.91; p = 0.72), MD -2.13 (95% CI -5.16 to 0.90, p = 0.17), MD -0.09 (95% CI -0.72 to 0.02, p = 0.10) respectively. There was a statistically significant 69% decreased risk of hypoglycemia in the metformin group (RR 0.31, 95% CI 0.20 to 0.49; p<0.001). There was no difference in terms of risk of preterm birth, hypertensive disorders, polyhydramnios and risk of cesarean delivery. There was statistically significant 34% reduction on the risk of neonatal hypoglycemia (RR 0.66, 95% CI 0.46 to 0.94; p=0.02) in the metformin group. Metformin has decreased the risk of newborns weighing more than 4000g, babies with birthweight 90th percentile by 27% (RR 0.73, 95% CI 0.28 to 1.90, p = 0.52) and 20% (RR 0.80, 95% CI 0.54 to 1.18, p = 0.26) respectively but these were not statistically significant. NICU admission, transient tachypnea, risk of any congenital anomaly were decreased in the metformin group but were not statistically significant. **Conclusion:** There was no significant difference between metformin and insulin in achieving glycemic control as to fasting blood sugar and postprandial blood glucose among patients with gestational diabetes mellitus. There was a statistically significant reduction in the risk of maternal and neonatal hypoglycemia in the use of metformin. **Keywords:** gestational diabetes mellitus, metformin, insulin, glycemic control

**THE USE OF VAGINAL CERCLAGE PLUS MICRONIZED PROGESTERONE IN PATIENTS DIAGNOSED WITH PREVIOUS HISTORY OF SPONTANEOUS PREGNANCY LOSS OR HISTORY OF PRIOR PRETERM BIRTH**

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**Problem Statement:** In our case series, we try to determine whether the combination of the two modalities, Progesterone plus Cerclage will improve pregnancy outcome. **Methods:** This is a case series of 5 patients who presented with history of prior preterm births or spontaneous abortion with average age of consultation at 12-19 weeks age of gestation. They underwent cervical length screening at 12-18 weeks age of gestation which revealed cervical insufficiency (1.5-2.4cm). After ultrasound, Micronized Progesterone 200mg per capsule twice daily intravaginally was started up to 36/7 weeks age of gestation. McDonalds Vaginal cerclage was done at 12-20 weeks age of gestation after informed consent under spinal anesthesia. Cefuroxime 1.5g IV was given as prophylactic antibiotics. Tocolysis was given (Isoxsuprine 10 ampules incorporated in 500cc D5W). Monitoring of cervical length above and below suture was done every 2-4 weeks to determine suture stability. Bed rest was advised. Release of suture was done at 36 6/7-37 weeks age of gestation in four cases. One patient had her suture released at 35 weeks because she had a history of a scarred uterus and went into labor. **Results:** Four patients delivered full term with good perinatal outcome. One patient delivered preterm at 35 weeks age of gestation because she went into labor. An emergency CS was done because she had a previous scarred uterus (prev.myomectomy). All the other four cases delivered via Cesarean Section for Obstetric Indications (One for previous Myomectomy, 1 for Dystocia and Two Repeat Cesarean Section.) There were no Maternal and Fetal Complications noted in all four cases. The preterm delivery had a maturity testing of 35 weeks, Apgar Score 8,9, Birthweight of 2013 gms and was discharged with the mother. **Conclusions:** Our case series concluded that the use of Vaginal Cerclage combined with Micronized Progesterone carried majority of pregnancies to term or near term with good perinatal outcome.

**A CASE REPORT – TORSION OF A PARAOVARIAN CYST IN THIRD TRIMESTER PREGNANCY**

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A 42-year-old multipara with a status post caesarean section (2006) presents acutely to the delivery room with severe pain, in the left mid-abdomen, which started the night before during 32+5 weeks gestation. After ruling out current infection, cervical insufficiency an an urological cause, with a condition after appendectomy, two differential diagnoses remained: uterine rupture and adnexal torsion. An all over abdominal ultrasound showed no abnormalities except for a two-centimetre, pale, Doppler-negative cyst on the left side next to the uterus. On previous gynaecological examinations, the adnexal region was unremarkable. As the complaints increase, the patient barely able to walk and no improvement under pain medication, an urgent caesarean section was performed at the 33rd week of pregnancy. Perioperative the sectio-scar and the uterus appear inconspicuous. In the area of the left ovary, a round, bluish-black structure of about 4 cm in size is visible, originating from the left mesosalpinx, with an inconspicuous left tube and left ovary. This round structure is twisted several times around an adhesion between the parietal peritoneum and the omentum. The cyst is detorqued and shows a distinct rim on a very narrow pedicle between necrotic and well perfused mesosalpinx tissue. In conclusion, we want to show that in the case of an acute abdomen during pregnancy, the adnexa should always be considered as well.

**ASSESSING THE INTERRATER RELIABILITY OF TRANSABDOMINAL CERVICAL LENGTH MEASUREMENT TO SCREEN FOR SHORT CERVIX IN A CANADIAN COHORT: A PILOT STUDY**

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**Problem statement:** Approximately 8% of Canadian pregnancies are complicated by preterm birth, accounting for one-third of infant mortality. Short cervical length is associated with higher risk for preterm birth. Despite international guidelines recommending universal endovaginal ultrasound (EVUS) to screen for short cervix, the time, resources, and expertise for EVUS limit international implementation. Current Canadian guidelines recommend a



transabdominal ultrasound (TAUS) in all pregnancies. Cervical length can be accessed via TAUS without changing probes or adding an invasive procedure. This study analyzes the feasibility for a universal short cervix screening using a two-step screening process with TAUS as first-line. Specifically, for phase I of this study, we aim to assess the interrater reliability of TAUS cervical length measurement to screen for short cervix in a Canadian cohort. **Methods:** EVUS and TAUS cervical length measurement were conducted by BC Women's Hospital sonographers in a virtual simulation using the CAE Vimedix Ultrasound Simulator. Each sonographer completed one TAUS and EVUS cervical measurement simulation, and independently obtained an optimal image to measure cervical length. Percentage difference from the mean was calculated to assess interrater reliability. **Results:** Fourteen sonographers were recruited this study. All sonographers measured EV and TA cervical length in the simulation model. Mean TA and EV cervical length measurements were within 4mm of each other (TA mean=39.3, TA SD=4.12; EV mean=42.97, EV SD=1.91). EV mean percentage difference from the mean was -9.33E-15 (SD = 4.44, range= 38.9mm, 46mm). TA percent difference from the mean was -1.29E-14 (SD = 10.49, range=33.5mm, 46.9mm). All TA measurements were within 20% of the mean, and all EV measurements were within 10% of the mean. TA measurements were within 15% of the mean if one outlier was removed (-14.76% to 13.99%). **Conclusion:** This study demonstrates a reasonable interrater percentage difference from the mean of 10% for EVUS measurements and 20% for TAUS measurements of cervical length. These results justify the advancement of this study to phase II, to assess the implementation of a two-step screening process for cervical length screening in a clinical population, with a TAUS measurement as a first step prior to EVUS, when necessary.

alloantibody transfer. As a result, nipocalimab warrants further evaluation in a global phase 3 study in HDFN.

**Disclosures:**

Leona E. Ling; Jocelyn H. Leu; Arpana Mirza; Edwin Lam; May Lee Tjoa; Shumyla Saeed-Khawaja; and Yosuke Komatsu: Employees of Janssen Research & Development, and may own stock/stock options in J&J. Masja de Haas; Eleonor Tiblad; Enrico Lopriore; Kenneth J. Moise Jr.: No conflict of interest  
Dick Oepkes: Principal investigator for trial of new drug for the treatment of HDFN and receives a consultative honorarium from Janssen Pharmaceuticals, Inc.

**NIPOCALIMAB PHARMACODYNAMICS IN A PHASE 2 STUDY IN PREGNANCIES AT RISK OF EARLY-ONSET SEVERE HEMOLYTIC DISEASE OF THE FETUS AND NEWBORN**

Leona E. Ling<sup>1</sup>, Jocelyn H. Leu<sup>2</sup>, Arpana Mirza<sup>2</sup>, Edwin Lam<sup>2</sup>, Masja de Haas<sup>3</sup>, May Lee Tjoa<sup>4</sup>, Shumyla Saeed-Khawaja<sup>1</sup>, Eleonor Tiblad<sup>5,6</sup>, Enrico Lopriore<sup>7</sup>, Dick Oepkes<sup>8</sup>, Kenneth J. Moise<sup>9,10</sup>, Yosuke Komatsu<sup>2,10</sup>

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**Problem statement:** To evaluate drug pharmacodynamics in an open-label phase 2 study evaluating nipocalimab, an anti-FcRn (neonatal Fc receptor) blocking antibody, for prevention of fetal anemia, intrauterine transfusions (IUTs), and poor outcomes in pregnancies at high risk of early onset severe hemolytic disease of the fetus and newborn (EOS HDFN). **Methods:** The UNITY study (Clinical trials.gov #NCT03842189) enrolled 14 Rhesus D (RhD) or Kell (K) alloimmunized singleton pregnancies with a prior obstetric history of HDFN onset at  $\leq 24$  weeks gestational age (GA). The analysis did not include one pregnancy due to an early elective abortion for an unrelated reason. Administration of weekly nipocalimab (30 or 45 mg/kg) was performed from 14 to 35 weeks GA with delivery targeted for 37 weeks GA. Pharmacodynamic markers, alloantibody titer, serum total immunoglobulin G (IgG), and FcRn occupancy were assessed every 2 weeks in mothers and in cord blood at delivery or IUTs. **Results:** Full FcRn occupancy, alloantibody decreases, and IgG lowering were observed within 2 weeks after the initiation of nipocalimab treatment. Decreases from baseline for IgG ranged from -80% to -85% and alloantibody titers ranged from 4- to 32-fold. FcRn occupancy was rapidly lost within 2-3 weeks after the last dose followed by rises in IgG and alloantibody titers. IgG and alloantibody titers from IUT cordocentesis (fetal) and in cord blood at delivery (newborns) were lower than concurrent maternal levels during full FcRn occupancy but were similar several weeks after dose cessation and loss of occupancy. **Conclusions:** Nipocalimab demonstrates rapid and reversible FcRn occupancy, lowering of maternal IgG alloantibodies and evidence for decreased placental IgG







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# COGI Laser Course

November 23<sup>rd</sup> 2023

14:00 - 17:00

Vienna, Austria

Hilton Vienna Park, Am Stadtpark 1

The 31<sup>st</sup> World Congress on Controversies  
in Obstetrics, Gynecology & Infertility

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## Vaginal Erbium and Neodymium Lasers for Women's Health

### Course Program:

0. Introduction by Program Coordinator – **5 min** (Speaker: Mr. Zdenko Vižintin)
01. Overview of Laser Technology for Gynecology – **15 min** (Speaker: Mr. Zdenko Vižintin)  
**PART I – Laser for Pelvic Floor Disorders**
02. Non-ablative Erbium Laser for SUI and POP – **15 min** (Speaker: Dr. Aleksandra Novakov-Mikić)
03. Non-ablative Erbium Laser for GSM - Overview of Clinical Evidence for Efficacy and Safety  
**15 min** (Speaker: Dr. Neža Koron)
04. **Q&A of Part I – 8 min** (Moderators: Dr. Aleksandra Novakov-Mikić, Mr. Zdenko Vižintin)  
**PART II – Reports from Experienced Users**
05. Non-ablative Er:YAG Laser for Vulvo-vaginal Indications – **15 min** (Speaker: Dr. Liora Bunzl)
06. Use of Lasers in Everyday Gynecology Practice – **15 min** (Speaker: Dr. Mihaela Vasilescu)
07. **Q&A of Part II – 8 min** (Moderators: Dr. Liora Bunzl, Mr. Zdenko Vižintin)  
**PART III – More Laser Applications for Women's Health**
08. Nd:YAG Laser in Gynecology – **15 min** (Speaker: Dr. Neža Koron)
09. Laser Removal of Cervical Lesions – **15 min** (Speaker: Dr. Mihaela Vasilescu)
10. Other Laser Applications in Gynecology – **15 min** (Speaker: Mr. Zdenko Vižintin)
11. A Comprehensive Approach to Multiple Gynecological Problems – **15 min**  
(Speaker: Dr. Aleksandra Novakov-Mikić)
12. **Q&A of Part III – 8 min** (Moderators: Dr. Mihaela Vasilescu, Mr. Zdenko Vižintin)  
**PART IV - Test**
13. End-of-Course Test – **10 min**

### SHORT COURSE DESCRIPTION:

Course participants will learn the basic principles of using lasers in a variety of non-surgical and surgical procedures within the field of minimally invasive gynecology.


The entire course constitutes twelve topics divided into four parts. In Part I the use of FotonaSmooth<sup>®</sup> Erbium laser systems for Pelvic Floor Disorders will be discussed. The second part is dedicated to reports from experienced users, while in Part III experts will present additional new innovative applications as well as the range of many possible laser treatments. In the last part (IV) participants will complete an End-of-Course Test.

Upon completing the End-of-Course Test, participants will receive a Course Certificate.




# Industry Symposia



THURSDAY, NOVEMBER 23

17:10-18:10	HALL A (Grand Klimt Hall 2 & 3)
<b>WHAT IS THE ROLE FOR REAL WORLD STUDIES TO GUIDE CLINICAL PRACTICE IN ART?</b> <i>Supported by Gedeon Richter</i>	
<i>Supported by</i>  <b>GEDEON RICHTER</b>	
Chairperson	<b>Michael Schenk, Austria</b>
17:10-17:14	Introduction and welcome <b>Michael Schenk, Austria</b>
17:14-17:31	Real world evidence on the effectiveness of a biosimilar rFSH alfa used in Germany and Austria for ART <b>Thilo Schill, Germany</b>
17:31-17:48	The continuum of ovarian response leading to BIRTH, a real-world study of ART in Spain <b>Gorka Barrenetxea, Spain</b>
17:48-18:05	A real-world study of ART in France (REOLA) comparing a biosimilar rFSH against the originator according to rFSH starting dose <b>Paul Barrière, France</b>
18:05-18:10	Concluding remarks <b>Michael Schenk, Austria</b>





FRIDAY, NOVEMBER 24

12:20-13:20 HALL A (Grand Klimt Hall 2 & 3)	
<b>LUTEAL PHASE SUPPORT</b>	
<p>Supported by</p>  <p>Caring Innovation</p>	
Capsule	Luteal phase support is not standardized, can we agree on progesterone support
Chairpersons	<b>Zion Ben Rafael</b> , <i>Israel</i> <b>Frank Broekmans</b> , <i>Netherlands</i>
12:20-12:40	Progesterone levels and supplementation in programmed cycles <b>Paul Pirtea</b> , <i>France</i>
12:40-13:00	Route of administration and type of progesterone - does it matter? <b>Dominique De Ziegler</b> , <i>France</i>
13:00-13:20	Endometrial receptivity <b>Edgardo Somiglianna</b> , <i>Italy</i>

12:20-13:20 HALL B (Grand Klimt Hall 1) Overflow HALL E (Park Suite 1)	
<b>LONG RANGE EFFECTS OF REPRODUCTION - IS IT ALL IN THE MITOCHONDRIA?</b>	
<i>*Topics defined by the scientific committee of COGI</i>	
<p>Supported by an educational grant</p>  	
Capsule	Our work already starts by emphasizing the importance of “preparing for pregnancy.” There is a growing body of evidence indicating how optimizing the preconception phase may impact specific patient characteristics and thus influence the health and well-being of future generations. In this session we’ll explore some fascinating aspects of long range effects of reproduction. <i>*Topics defined by the scientific committee of COGI</i>
Chairpersons	<b>Bart Fauser</b> , <i>Netherlands</i> <b>Anja Pinborg</b> , <i>Denmark</i>
12:20-12:40	Mitochondria function and oocyte quality <b>Johannes Ott</b> , <i>Austria</i>
12:40-13:00	Mitochondria, ROS, and sperm fragmentation <b>Martin Imhof</b> , <i>Austria</i>
13:00-13:20	Enhancing chances for natural conception <b>Ana Mitrovic Jovanovic</b> , <i>Serbia</i>




12:20-13:20 HALL C (Grand Park Hall 2)	
<b>PRESURGICAL STAGING OF DEEP ENDOMETRIOSIS USING ULTRASOUND - THE SURGEON'S PERSPECTIVE AND THE SONOGRAPHERS VIEW</b>	
Supported by  GE HealthCare	
12:20-13:20	Presurgical Staging of Deep Endometriosis using Ultrasound - the Surgeon's Perspective and the Sonographers View <b>Gernot Hudelist, Austria</b>

12:20-13:20 HALL D (Grand Park Hall 3)	
<b>HEMOLYTIC DISEASE OF THE FETUS AND NEWBORN (HDFN): WHAT IS NEW?</b>	
Supported by 	
Capsule	Three renowned experts – Roland Devlieger, Asma Khalil, and Ulrich Sachs – will explore the profound impact of HDFN, its current management, and the unmet needs, while also shedding light on the patient's experience and perspective. During this insightful program, the speakers will consider recent advances in treatment strategies and will engage in an interactive panel discussion on the current challenges and future directions in HDFN care.
Learning objectives	After this symposium, participants should be able to: Explain the importance of HDFN awareness Reflect on current management strategies and unmet needs in HDFN Describe emerging data on the development of novel treatment strategies for HDFN
Scientific committee	<b>Roland Devlieger, Belgium</b> <b>Asma Khalil, UK</b>
12:20-12:23	Welcome and introduction <b>Ulrich Sachs, Germany</b>
12:23-12:38	What is HDFN? <b>Asma Khalil, UK</b>
12:38-12:48	How does HDFN impact patients? <b>All faculty</b>
12:48-13:03	What are the new emerging therapies in HDFN? <b>Roland Devlieger, Belgium</b>
13:03-13:18	<b>Panel discussion:</b> Current challenges and future directions in HDFN care <b>Q&amp;A</b> <b>All faculty</b>
13:18-13:20	Summary and close <b>Ulrich Sachs, Germany</b>





13:30-14:30 HALL A (Grand Klimt Hall 2 &3) – Live stream to HALL D (Grand Park Hall 3)	
<b>BELOW THE BELT</b>	
<p>Supported by</p>  <b>GEDEON RICHTER</b>	
Capsule	Through the personal & inspiring stories of four patients urgently searching for answers to mysterious symptoms, BELOW THE BELT shines a light on widespread issues that disproportionately affect women. Executive Produced by Hillary Clinton and Rosario Dawson, the film is a tribute to the strength of women and a stirring message for better care. This session will look at the issues the film raises - menstrual taboos, gender bias, racial bias, informed consent and barriers to quality healthcare through the lens of a single condition that affects 200 million people: Endometriosis.
Chairpersons	<b>Shannon Cohn</b> , USA ( <i>virtual</i> ) <b>Vilma Durante</b> , Switzerland <b>Bart Fauser</b> , Netherlands
13:30-13:35	Introduction and video on Gedeon Richter <b>Vilma Durante</b> , Switzerland
13:35-13:40	Introduction of Below the Belt <b>Shannon Cohn</b> , USA ( <i>virtual</i> )
13:40-14:25	Screening of Below the Belt
14:25-14:30	Concluding comments <b>Bart Fauser</b> , Netherlands



**WHAT IS THE ROLE FOR REAL WORLD STUDIES TO GUIDE CLINICAL PRACTICE IN ART?**

**REAL WORLD EVIDENCE ON THE EFFECTIVENESS OF A BIOSIMILAR RFSH ALFA USED IN GERMANY AND AUSTRIA FOR ART**

Thilo Schill, Germany

Real-world studies can contribute to the body of scientific evidence to help guide clinical practice. This presentation compares real world studies to randomised controlled trials (RCTs), for instance highlighting that the strict selection of patients entering RCTs means that they are not representative of normal clinical practice<sup>1</sup>. While acknowledging the value of RCTs and meta-analyses, the presentation draws attention to important caveats that need to be considered when applying such studies to guide clinical practice. The results of a large real-world study in Germany and Austria of a biosimilar rFSH alfa (Bemfola®, Gedeon Richter Plc, Budapest, Hungary) used in ART are presented<sup>2</sup>. These results are compared to the national ART data for Germany illustrating the effectiveness and safety of a biosimilar rFSH are comparable to other FSH treatment options.

**References**

1. Hershkop E, et al *Reprod Biomed Online*. 2017;34(3):274–279. <https://doi.org/10.1016/j.rbmo.2016.11.010>
2. Griesinger G, et al. *J Reprod Infertil*. 2021;22(2):116–124. <https://doi.org/10.18502/jri.v22i2.5798>

**THE CONTINUUM OF OVARIAN RESPONSE LEADING TO BIRTH, A REAL-WORLD STUDY OF ART IN SPAIN**

Gorka Barrenetxea, Spain

Real-world studies provide the opportunity to assess a drug across a wide range of patients treated in diverse ways in actual clinical practice. This presentation focuses on the real-world study, BIRTH, comparing a biosimilar rFSH alfa (Bemfola®, Gedeon Richter Plc, Budapest, Hungary) used in Spain for four distinct populations: poor responders according to Bologna criteria, suboptimal responders, normal responders and oocyte donors<sup>1</sup>. The number of oocytes and pregnancy rates varied by group, but the outcomes achieved with the rFSH alfa biosimilar were comparable with the nationally reported results in Spain<sup>1</sup>. The BIRTH study further showed that combination protocols incorporating LH or LH activity are commonly used in Spain, although no outcome parameter improved compared to monotherapy with rFSH<sup>1</sup>.

**Reference**

1. Ferrando M, et al. *Fertil Res Pract*. 2020;6:13. <https://doi.org/10.1186/s40738-020-00081-4>

**A REAL-WORLD STUDY OF ART IN FRANCE (REOLA) COMPARING A BIOSIMILAR RFSH AGAINST THE ORIGINATOR ACCORDING TO RFSH Starting Dose**

Paul Barrière, France

Biosimilar products could have a positive impact on public healthcare funding. This presentation presents the case of ART in France based on the real-world study, REOLA, comparing a biosimilar rFSH alfa (Bemfola®, Gedeon Richter Plc, Budapest, Hungary) with the originator rFSH alfa grouped according to rFSH starting dose<sup>1</sup>. The challenges of analysing real-world data are considered. It is noted for the REOLA study combining all groups the overall weighted averages of the cumulative live-birth rates for biosimilar vs originator were 21.24% vs 20.91% respectively consistent with the European Medicines Agency (EMA) and Heads of Medicines Agencies (HMA) joint statement that in the EU biosimilars are interchangeable with their respective originators<sup>2,3</sup>. It will be seen that the rFSH alfa biosimilar is a cost-effective option for women undergoing ART in France<sup>4</sup>.

**References**

1. Barrière P, et al. *J Gynecol Obstet Hum Reprod*. 2023;52:102510 <https://doi.org/10.1016/j.jogoh.2022.102510>
2. Barrière P, et al. *J Gynecol Obstet Hum Reprod*. 2023;52: 102644 <https://doi.org/10.1016/j.jogoh.2023.102644>
3. EMA/HMA joint statement 21 April 2023 [https://www.ema.europa.eu/en/documents/public-statement/statement-scientific-rationale-supporting-interchangeability-biosimilar-medicines-eu\\_en.pdf](https://www.ema.europa.eu/en/documents/public-statement/statement-scientific-rationale-supporting-interchangeability-biosimilar-medicines-eu_en.pdf)
4. Lehmann M et al, *Hum Reprod*, 2023;38:Sup dead093.805, <https://doi.org/10.1093/humrep/dead093.805>

**LUTEAL PHASE SUPPORT**

**ROUTES AND TYPE OF ADMINISTRATION OF PROGESTERONE: DOES IT MATTER?**

Dominique de Ziegler

Dept of Ob-Gyn and Reproductive Medicine (UVSQ), Hopital Foch, Paris France

**Introduction:** Several routes of administration have been tested for progesterone. Only two are practically efficient, injectable and vaginal, while the alternate routes – notably, oral – are neither practical nor effective in reproductive medicine. **Fresh and frozen embryo transfers:** In case of fresh embryo transfers, progesterone supplement is solely needed during the luteal phase, until the positive pregnancy test. Moreover, the replacement is only partial, as some progesterone is produced by the corpus luteum. Conversely, in FET scheduled in HRT cycles, progesterone supply must match luteal phase production and the increase seen in early pregnancy. No progesterone product has been formally tested in FET, however. **A New subcutaneous progesterone option:** Originally, only oil-based solutions of progesterone were available because of the high hydrophobic properties of progesterone. Recently, however, a new self-injectable subcutaneous progesterone preparation has been developed, Prolutex® (1). This has been made possible by encapsulating progesterone in a starch residue – cyclodextrine – long used in the pharmaceutical and food industry to enhance the polarity of various substances. Self-injectable subcutaneous progesterone – Prolutex® – has been proven effective for luteal phase support for fresh ART, at the dose of one injection (25mg) per day (2). In FET conducted in E2 and progesterone cycles – HRT approach, subcutaneous progesterone (Prolutex®) at the dose of 25mg BID was shown to be equivalent to i.m. progesterone 50mg/day (3). **Multiple unorthodox protocols:** Recently, certain reports underscored that FET conducted in HRT cycles were associated with a slight increase in hypertensive disorders of pregnancy (4). Since then, several alternative options have been discussed. Natural cycle FETs suffer, however, from lesser flexibility. At the last 2023 ESHRE meeting, new options have been proposed for timing FETs in simplified modified natural cycles, including in abstracts #042, and #026. **Trust proven options:** In spite of the tempting interest for these briefly tested new protocols, we recommend for the time being to not jump on the band wagon. To this date, the only approach – the golden approach – is the HRT approach. The latter indeed, has been proven to provide perfect receptivity with a risk of RIF ≤5%, as published in the seminal “Lugano Paper”, including in women with endometriosis and adenomyosis (5). Hence until more is known, our recommendation is to stay put before these new – not fully proven – modified natural cycles options. On the contrary, we support to stick with the proven HRT strategy for FETs. Today, one of the common practice found in the best performing ART clinic in the US is the use of HRT – E2 and i.m. progesterone – for timing FETs (6). Later data will have to be followed however (5).

**References**

1. de Ziegler D, Sator M, Binelli D, Leuratti C, Cometti B, Bourgain C, et al. A randomized trial comparing the endometrial effects of daily subcutaneous administration of 25 mg and 50 mg progesterone in aqueous preparation. *Fertil Steril*. 2013;100(3):860-6.
2. Lockwood G, Cometti B, Bogstad J, Erb K, De Geyter C, Urbancsek J, et al. A randomized controlled trial comparing the efficacy and safety of two HMG preparations gaining their LH bioactivity from different HCG sources. *Reprod Biomed Online*. 2017;35(1):17-27.
3. Boynukalin FK, Abali R, Gultomruk M, Demir B, Yarkiner Z, Karlikaya G, et al. Subcutaneous progesterone administration provides a similar ongoing pregnancy rate compared with intramuscular progesterone administration in hormone replacement therapy frozen embryo transfer cycles. *F S Rep*. 2023;4(2):165-72.
4. Zaat TR, Kostova EB, Korsen P, Showell MG, Mol F, van Wely M. Obstetric and neonatal outcomes after natural versus artificial cycle frozen embryo transfer and the role of luteal phase support: a systematic review and meta-analysis. *Hum Reprod Update*. 2023;29(5):634-54.
5. Pirtea P, Cedars MI, Devine K, Ata B, Fransiak J, Racowsky C, et al. Recurrent implantation failure: reality or a statistical mirage?: Consensus statement from the July 1, 2022 Lugano Workshop on recurrent implantation failure. *Fertil Steril*. 2023;120(1):45-59.
6. Tanguay M, Cometti B, Boudreault S. Comparative Bioavailability of Two Daily Subcutaneous Doses Versus a Single Dose of Intramuscular and Vaginal Progesterone Formulations in Healthy Postmenopausal Females. *Clin Pharmacol Drug Dev*. 2023.





## LONG RANGE EFFECTS OF REPRODUCTION - IS IT ALL IN THE MITOCHONDRIA?

\*Topics defined by the scientific committee of COGI

### MITOCHONDRIAL FUNCTION AND OOCYTE QUALITY

Johannes Ott, Austria

Ovarian function and longevity are associated with several aspects of general health in women. These include cardiovascular health, bone health and cognitive function. However, the main consequence of ovarian ageing is diminished ovarian reserve and, in consequence, infertility. Several hypotheses about the pathophysiological mechanisms leading to ovarian ageing have been proposed, namely the free radical theory, apoptotic processes, shortening of telomeres, and mitochondrial dysfunction. Radical oxygen species are formed as by-products of various metabolic processes and exert diverse negative effects on oocyte quality and function. One important source is mitochondrial dysfunction. It has been shown that several micronutrients may positively affect these systems and also lead to increased live birth rates in women with poor ovarian reserve. An overview about pathomechanisms and possible treatment options is provided in this lecture.

### MITOCHONDRIA, ROS, AND SPERM FRAGMENTATION

Martin Imhof, Austria

In recent years, there has been a notable surge in research focused on male factor infertility. A recurring challenge is the frequent absence of identifiable causes for fertility issues and normal semen analysis, often referred to as idiopathic male factor infertility. Thereby, DNA fragmentation index (DFI) has emerged as a crucial and additional parameter for evaluating sperm quality. Despite fragmented sperm's ability to fertilize oocytes, elevated DFIs have been linked to recurrent miscarriages and ART failures. DNA fragmentation tends to rise in environments with elevated levels of free radicals, fostering oxidative stress (OS) within testicular cells and tissues. Increased OS has been associated with poor lifestyle, age, smoking, and certain environmental exposures. Given the incapacity of spermatozoa to repair their own DNA, there is growing interest in exploring antioxidant regimens as potential therapies to mitigate DNA fragmentation risk and enhance sperm quality. Micronutrient supplements with antioxidative capacities have been shown to be more effective than lifestyle changes alone in reducing DFI, and may ultimately contribute to improved pregnancy rates. This underscores the importance of incorporating DNA fragmentation testing as a diagnostic tool and investigate therapeutic options in couples experiencing unexplained infertility and recurring pregnancy losses.

### ENHANCING CHANCES FOR NATURAL CONCEPTION

Ana Mitrovic Jovanovic, Serbia

Assisted reproductive technologies (ART) have experienced significant advancements and increasing popularity in recent years. Nevertheless, enhancing natural conception rates remains a crucial consideration to mitigate the need for invasive and costly fertility interventions. In this retrospective analysis, we assessed the impact of a partner treatment involving specifically formulated micronutrient supplements with antioxidative components in 119 couples awaiting in infertility treatment at a Serbian and Viennese fertility clinic. Following initiation of micronutrient supplementation, 66.4% (n=79/119) of couples achieved natural conception within six months. Remarkably, the natural pregnancy rate was comparably high at 64.7% (n=44/68) among couples categorized as infertile, thus experiencing an unfulfilled desire to have children for at least 12 months. While previous research has predominantly emphasized the beneficial effects of micronutrient supplementation on individual male and female fertility factors, these findings highlight its impact on natural pregnancy rates. Such formulas may warrant consideration as part of the "prepare for pregnancy" concept for couples awaiting fertility treatments, contributing to their prospects of achieving natural conception.



## PRESURGICAL STAGING OF DEEP ENDOMETRIOSIS USING ULTRASOUND - THE SURGEON'S PERSPECTIVE AND THE SONOGRAPHERS VIEW

Gernot Hudelist, Austria

Accurate non-invasive detection and description of severe endometriosis is essential for planning adequate surgical but also non-surgical treatment strategies. Ultrasound is the first line tool to be used to evaluate patients with suspected deep endometriosis. This industry sponsored symposium will focus on the potential of ultrasound to guide surgical treatment and associated risks.



## HEMOLYTIC DISEASE OF THE FETUS AND NEWBORN (HDFN): WHAT IS NEW?

### WHAT IS HDFN?

Asma Khalil, UK

Hemolytic disease of the fetus and newborn (HDFN) is an autoimmune disease characterized by red blood cell (RBC) antigen incompatibility between the mother and the fetus. This can be driven by a variety of RBC antigens such as Rhesus (Rh) D (the most common), Rhc, RhC, RhE, Rhe, ABO, and less commonly Kell, Kidd, Duffy, MNS, and Rhs. Upon exposure to fetal RBCs, the mother's immune system produces IgG-class antibodies in a process called alloimmunization. These antibodies cross the placenta and destroy fetal RBCs expressing the involved antigen. This can lead to fetal anemia, an increased risk of preterm birth or stillbirth, and hydrops fetalis (fluid accumulation in fetal extravascular compartments). HDFN affects up to 1/300 live births; the burden of disease is high in developing countries and regions such as Sub-Saharan Africa and South Asia. Diagnosis and treatment of this disease has evolved since the mid-20th century, involving procedures such as Doppler sonography, intrauterine transfusions, immunoprophylaxis, and phototherapy. The management of HDFN at all stages of pregnancy and the post-partum period involves frequent monitoring of anemia, with timely intervention being crucial to prevent complications and fetal death. Prof. Asma Khalil will give an account of her experience managing HDFN in the UK and discuss differences across countries.

### HOW DOES HDFN IMPACT PATIENTS?

Roland Devlieger, Belgium

Asma Khalil, UK

Ulrich Sachs, Germany

In this session, a video recording of a patient testimonial will set the stage for a discussion among the expert faculty, shining a light on the patient's perspective and experience with hemolytic disease of the fetus and newborn (HDFN) and focusing on the importance of disease awareness, and patient and physician education in disease management. The patient will recall the experience of having her pregnancy affected by HDFN and the story of her family beyond this pregnancy. This testimonial indicates the magnitude of the financial, logistical, and emotional burden and the expert faculty will discuss the management of HDFN in the context of this experience.





## WHAT ARE THE NEW EMERGING THERAPIES IN HDFN?

**Roland Devlieger** *Belgium*

The neonatal Fc receptor (FcRn) is responsible for the transfer of immunoglobulins (Ig) from the mother to the fetus across the placental interface. This is an important aspect of normal fetal immunity but in diseases such as HDFN, this same mechanism leads to the transfer of maternal antibodies and the destruction of RBCs, in a process called "alloimmunization". A novel class of immunotherapy agents targeting the FcRn is being developed, aiming to treat not only HDFN but other IgG-driven autoimmune diseases. In this session, Prof. Roland Devlieger will discuss ongoing and future clinical trials testing anti-FcRn therapy in patients at risk for HDFN.

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## PANEL DISCUSSION: CURRENT AND FUTURE CHALLENGES IN HDFN CARE

### Q&A

**Ulrich Sachs**, *Germany (Moderator)*

**Roland Devlieger** *Belgium*

**Asma Khalil**, *UK*

The expert faculty (Prof. Asma Khalil, Prof. Roland Devlieger, and Prof. Ulrich Sachs) will discuss current and future challenges in the management of hemolytic disease of the fetus and newborn (HDFN). They will focus on questions such as "What are the main gaps in the current understanding of HDFN?", "How to increase disease awareness effectively?", and "How might HDFN care evolve in the future?". The audience will be encouraged to participate and ask questions.

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[www.karlstorz.com](http://www.karlstorz.com)

**KARL STORZ** a family-owned company founded in Tuttlingen (Germany) in 1945, is a globally recognized market leader and solution provider in endoscopy for human and veterinary medicine. With its innovative products, services, and integrated solutions, KARL STORZ has stood for reliability, quality, and availability for over 75 years. The company develops, manufactures, and distributes its products with a focus on functional design, precise craftsmanship, and continuous progress. From its headquarters in Tuttlingen, KARL STORZ has grown from a two-person company into a global corporation that is now represented in over 40 countries through more than 50 subsidiaries.



[lenuspharma.com](http://lenuspharma.com)

[profertil.eu](http://profertil.eu)

[profertil-female.eu](http://profertil-female.eu)

[profertil-inositol.eu](http://profertil-inositol.eu)

Lenus Pharma is an innovative Austrian company specialized in evidence-based products for fertility, distributed in over 70 countries worldwide.

**PROFERTIL® #1 PROVEN EFFICACY IN FERTILITY**

- PROFERTIL® is the world leading patented and 8-fold clinically proven formula for the management of impaired sperm quality. It shows synergistic effects to significantly improve male fertility.
- PROFERTIL® female restores female fertility: Three clinical studies demonstrated that the chances for conception are improved - especially for women 35+.
- PROFERTIL® inositol is the newest member of the product family addressing the need of an adequate formulation for women with PCOS. The stick can be taken without water.



[www.nvwalife.com/EN](http://www.nvwalife.com/EN)

**Guangzhou Nyuwa Life Technology Co., Ltd.** is a world-leading innovative company with genome epigenetics research and medical transformation platform. Nyuwa Life aims for providing leading medical testing services for IVF hospitals, reproductive centers and partner organizations. With exclusive epigenetic technologies applied in reproductive medicine field, Nyuwa Life will be able to exterminate infertility and birth defect, and contribute to human's health and reproduction in the near future.



[www.organon.com/germany](http://www.organon.com/germany)

**Organon** is a global leader in women's health committed to delivering innovation, improving access, and expanding choice by finding and advancing potential solutions that help address critical gaps in women's health. Our vision is to create a better and healthier every day for every woman around the world. We are committed to listening to the needs of women as we believe health begins when we hear her.



[info@pantarheibio.com](mailto:info@pantarheibio.com), [www.pantarheibio.com](http://www.pantarheibio.com)

[info@pantarheioncology.nl](mailto:info@pantarheioncology.nl), [www.pantarheioncology.nl](http://www.pantarheioncology.nl)

**Pantarhei Bioscience and Pantarhei Oncology**

**Pantarhei Bioscience (PRB) and Pantarhei Oncology (PRO)**

Focus on innovative drug development in respectively Woman's Health (WH) and Reproductive Endocrine Oncology (REO) based on the ability to identify, confirm and patent protect novel targets and medical uses of existing hormones, biologicals, drugs and combinations thereof with a focus on clinical development and human safety. Pantarhei adheres to the highest scientific standards for preclinical and clinical drug development and aims at publication of results in peer-reviewed journals.

Major projects in the current Pantarhei pipelines include (i) Androgen Restored Contraception (ARC) to prevent the consequences of the loss of testosterone caused by combined oral contraceptives (COCs) by adding dehydroepiandrosterone (DHEA) to COCs, (ii) the natural fetal estrogen Estretol (E4) for the (co)-treatment of advanced breast and prostate cancer and (iii) the use of the Zona Pellucida 3 Cancer (ZP3C) antigen for immunotherapy of ZP3C expressing tumours including ovarian, prostate, breast, colon and non-small-cell lung cancers (NSCLC).



[www.preischool.com](http://www.preischool.com)

**Permanent International and European School in Perinatal, Neonatal and Reproductive Medicine.**

Founded in Florence (Italy) in 2012, the School, inspired by the values of scientific culture, ethics and bioethics of life sciences, pursues the aim of promoting and enhancing the fundamental ideals of maternal infant medicine in its entire course: reproductive, periconceptual, maternal and child health periods. The School run courses of reproductive, perinatal and neonatal medicine and related disciplines, training programs, national and international conferences, congresses, debates, and any other event or action consistent with its objectives.



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