



The 30<sup>th</sup> World Congress on  
Controversies in Obstetrics,  
Gynecology & Infertility (COGI)  
*All About Women's Health*



In partnership with Reproductive BioMedicine Online (RBMO)

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**November 24-26, 2022**  
**Amsterdam, The Netherlands**

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*Congress Program & Abstracts*



[www.cogi-congress.org](http://www.cogi-congress.org)

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# Timetable

## THURSDAY, NOVEMBER 24, 2022

	HALL A	HALL B
13:00-13:45	THE BEST OF RBMO 2021-2022	14:00-17:00 LASER COURSE Attendance by pre-registration only See pages 150 & 151
13:45-15:00	SCIENTIFIC MISCONDUCT, WHERE ARE WE TODAY	
15:00-16:05	FEMALE HEALTHY AGING	
16:05-16:20	Short break	
16:20-17:40	PRECONCEPTIONAL (EPI)GENETICS, ETHICS AND LIFESTYLE CARE IN PERSONALIZED MEDICINE	
17:40-18:40	INDUSTRY SESSION See page 152	
18:40-19:40	OPENING SESSION: NOBEL PRIZE LAUREATE ROBERT G. EDWARDS ANNUAL LECTURE BEST ABSTRACT AWARDS ANNOUNCEMENT 	
19:40	NETWORKING RECEPTION	

## FRIDAY, NOVEMBER 25, 2022

	HALL A INFERTILITY/ ART/IVF I	HALL B GYNECOLOGY	HALL C FETOMATERNAL MEDICINE	HALL D INFERTILITY/ ART/IVF II	HALL E ORAL PRESENTATIONS & MODERATED E-POSTERS
08:30-10:00	PCOS	DILEMMAS IN BENIGN GYNAECOLOGY	PROGESTERONE & PROTECTION OF PREGNANCY - A PREIS SCHOOL ACADEMY SESSION	MALE INFERTILITY LAB WORK	Oral Presentations 1: INFERTILITY/ART/IVF
10:00-10:20	Coffee break, visit the exhibition and e-poster viewing				
10:20-11:50	PGT-A/PGS	POI AND MENOPAUSE	HOT CONTROVERSIES	DIAGNOSIS AND TREATMENT OF ENDOMETRIOSIS	Oral Presentations 2: GYNECOLOGY
11:50-12:00	Break				
12:00-13:30	EDUCATIONAL GRANT SUPPORTED SESSION See page 153	UTERINE MALFORMATION	HYPERTENSIVE DISORDERS	FEMTECH AND FERTILITY: ARE WOMEN TAKING BACK CONTROL?	Oral Presentations 3: FETOMATERNAL MEDICINE
13:30-14:30	Lunch break, visit the exhibition and moderated e-posters				13:40-14:04 Moderated e-posters
14:30-16:30	EMBRYO TRANSFER (ET)	MENOPAUSE	AN ARTIFICIAL WOMB FOR EXTREMELY PRETERM INFANTS & MATERNAL VACCINATION	LABORATORY TECHNIQUES	Oral Presentations 4: INFERTILITY/ART/IVF, DIAGNOSTIC PROCEDURES, OTHER
16:30-16:50	Coffee break, visit the exhibition and e-poster viewing				
16:50-18:20	ADD-ONS	HRT	GDM AND PRE-GDM	FET (FROZEN EMBRYO TRANSFER) – TURKISH SOCIETY OF REPRODUCTIVE MEDICINE SESSION	Oral Presentations 5: GYNECOLOGICAL ONCOLOGY, GYNECOLOGY

## SATURDAY, NOVEMBER 26, 2022

	HALL A INFERTILITY/ ART/IVF I	HALL B GYNECOLOGY	HALL C FETOMATERNAL MEDICINE	HALL E ORAL PRESENTATIONS & MODERATED E-POSTERS
08:30-10:00	OVARIAN STIMULATION	MANAGEMENT OF VULVOVAGINAL SYMPTOMS	INTRAPARTUM CARE	Oral Presentations 6: FETOMATERNAL MEDICINE
10:00-10:20	Coffee break, visit the exhibition and moderated e-posters			
10:20-11:50	10:20-12:00 HITECH IVF	HPV	ROUND TABLE DISCUSSION	Oral Presentations 7: FETOMATERNAL MEDICINE
11:50-12:00		Break		
12:00-13:30	FERTILITY PRESERVATION	FERTILITY SPARING OPTIONS IN GYNECOLOGIC ONCOLOGY	OBESITY	Oral Presentations 8: GYNECOLOGY
13:30-14:30	Lunch break, visit the exhibition and moderated e-posters			
14:30-16:30	ENDOMETRIOSIS AND INFERTILITY	SLS – SOCIETY OF LAPAROSCOPIC & ROBOTIC SURGEONS	CONTROVERSIAL ISSUES & PRETERM DELIVERY	Oral Presentations 9: GYNECOLOGY/HPV/OTHER
16:30-16:50	Coffee break, visit the exhibition and e-poster viewing			
16:50-18:20			LABOR AND DELIVERY	Oral Presentations 10: OTHER



## Words of Welcome from COGI Chairpersons

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**Dear Colleagues,**

**COGI and RBMO** are delighted to welcome you to the **30<sup>th</sup> World Congress on Controversies in Obstetrics, Gynecology and Infertility.**

COGI usually attracts over 1,600 participants from over 100 countries and during the corona pandemic in 2021 over 1,000 have joined the hybrid event onsite and online.

Following this success, COGI looks forward to welcoming world-renowned leaders in the field of Ob/Gyn and infertility, to review advances, breakthroughs, and controversies. The timetable will comprise of round table discussions, debates, and lectures. Program highlights will include the “Robert G. Edwards Nobel Prize Laureate” lecture, and cutting edge lectures by leading experts “who think differently”. We will work tirelessly to develop and offer an inspiring scientific program, sessions on genetics, women’s health, PCOS, POI, prenatal diagnosis, pregnancy support, age-related risks, nutrition, the epidemic of multiple pregnancies, menopause, and more. The program will allow for exciting and interactive speaker-audience discussions within every session.

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 Amsterdam!

Sincerely,

**COGI Congress Co-Chairpersons**



**Zion Ben Rafael**  
*Israel*



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



**Rene Frydman**  
*France*



**Joop Laven**  
*The Netherlands*



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# General Information

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## VENUE

### Postillion Hotel & Convention Centre Amsterdam

Paul van Vlissingenstraat 9-11  
1096 BK Amsterdam  
The Netherlands

## LANGUAGE

The official language of the congress is English.

## COGI CONGRESS HOURS

Thursday, November 24	13:00-19:40
Friday, November 25	08:30-18:20
Saturday, November 26	08:30-18:20

## 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 24	19:30-20:30 (Networking reception 19:40-20:30)
Friday, November 25	09:30-16:30
Saturday, November 26	09:30-16:30

## POSTERS

All the posters are presented in electronic format. The e-posters are situated in the foyer and online.

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

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

## CME ACCREDITATION

The 30<sup>th</sup> COGI Congress has been accredited by the European Accreditation Council for Continued Medical Education (EACCME<sup>®</sup>) for a maximum of 19 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.

## 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 30<sup>th</sup> COGI Congress.

## RECORDING POLICY

Recording (photographic, video and audio) of the session is strictly prohibited.

## 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**



# *Scientific Program*

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## THURSDAY, NOVEMBER 24

<b>13:00-13:45</b>	<b>THE BEST OF RBMO 2021-2022</b>	<b>HALL A</b>
<b>Capsule</b>	The two best papers published in RBMO in 2021 are presented in this session.	
<b>Chairpersons</b>	<b>Bart Fauser</b> , <i>Netherlands</i> <b>Zion Ben Rafael</b> , <i>Israel</i>	
13:00-13:05	Welcome <b>Bart Fauser</b> , <i>Netherlands</i>	
13:05-13:25	Effect of probiotics on the relative abundance of vaginal <i>Ureaplasma parvum</i> in women suffering from unexplained infertility <b>Michael Schenk</b> , <i>Austria</i>	
13:25-13:45	Do fertility tracking apps offer women useful information about their fertile window? <b>Joyce Harper</b> , <i>UK</i>	

<b>13:45-15:00</b>	<b>SCIENTIFIC MISCONDUCT, WHERE ARE WE TODAY</b>	<b>HALL A</b>
<b>Capsule</b>	Whose job is it to identify fake publications?	
<b>Chairpersons</b>	<b>Cornelis B. Lambalk</b> , <i>Netherlands</i> <b>Zion Ben Rafael</b> , <i>Israel</i>	
13:45-14:00	Overall perspective <b>Lex Bouter</b> , <i>Netherlands</i>	
14:00-14:20	The publisher perspective <b>Sarah Jenkins</b> , <i>UK</i>	
14:20-14:40	The chief editor perspective <b>Bart Fauser</b> , <i>Netherlands</i>	
14:40-15:00	Current status in reproductive medicine <b>Ben Mol</b> , <i>Australia</i>	

<b>15:00-16:05</b>	<b>FEMALE HEALTHY AGING</b>	<b>HALL A</b>
<b>Capsule</b>	With the ongoing trend towards increasing longevity, the determinant of healthy aging generates increasing attention. Distinct gender differences are present, resulting in women living longer in suboptimal health. How important are steroids, menopause, and chronic reproductive dysfunction in this context? These issues will be addressed in great detail by 4 expert speakers.	
<b>Chairpersons</b>	<b>Bart Fauser</b> , <i>Netherlands</i> <b>Zion Ben Rafael</b> , <i>Israel</i>	
15:00-15:05	Introduction <b>Bart Fauser</b> , <i>Netherlands</i>	
15:05-15:20	Menopause and its implications <b>Dorenda van Dijken</b> , <i>Netherlands</i>	
15:20-15:35	Wellbeing and sexual health <b>Alessandra Graziottin</b> , <i>Italy</i>	
15:35-15:50	Gender differences in cardiovascular health <b>Angela Maas</b> , <i>Netherlands</i>	
15:50-16:05	PCOS after menopause - morbidity and hormonal changes <b>Mats Brännström</b> , <i>Sweden</i>	

**16:05-16:20 Break**





<b>16:20-17:40</b>	<b>PRECONCEPTIONAL (EPI)GENETICS, ETHICS AND LIFESTYLE CARE IN PERSONALIZED MEDICINE</b>	<b>HALL A</b>
<b>Capsule</b>	Personalized medicine requires an understanding of periconceptual needs.	
<b>Chairpersons</b>	<b>Bart Fauser</b> , <i>Netherlands</i> <b>Angela Maas</b> , <i>Netherlands</i>	
16:20-16:40	Periconception (epi)genetics <b>Kevin Sinclair</b> , <i>UK</i>	
16:40-17:00	Lifestyle, ethics and equity <b>Hafez Ismaili M'hamdi</b> , <i>Netherlands</i>	
17:00-17:20	Periconception lifestyle care and personalized medicine <b>Régine Steegers-Theunissen</b> , <i>Netherlands</i>	
17:20-17:40	Implications of COVID-19 on fertility in women and men <b>Scott Nelson</b> , <i>UK</i>	

<b>17:40-18:40</b>	<b>INDUSTRY SUPPORTED SESSION</b> <i>See page 152</i>	<b>HALL A</b>
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<b>18:40- 19:40</b>	<b>OPENING SESSION: NOBEL PRIZE LAUREATE ROBERT G. EDWARDS ANNUAL LECTURE</b>	<b>HALL A</b>
<b>Chairpersons</b>	<b>Zion Ben Rafael</b> , <i>Israel</i> <b>Bart Fauser</b> , <i>Netherlands</i> <b>Rene Frydman</b> , <i>France</i> <b>Joop Laven</b> , <i>Netherlands</i>	
18:40-19:30	Nobel prize laureate Robert G. Edwards annual lecture Uterine transplantation – the first treatment for absolute uterine factor infertility <b>Mats Brännström</b> , <i>Sweden</i>	
19:30-19:40	Best Abstract Awards	

<b>NETWORK RECEPTION</b>		
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## THURSDAY, NOVEMBER 24

<b>14:00-17:00</b>	<b>LASER COURSE</b> <i>See pages: 150 &amp; 151</i>	<b>HALL B</b>
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## FRIDAY, NOVEMBER 25

### ART/IVF/INFERTILITY

08:30-10:00	PCOS	HALL A
<b>Capsule</b>	Many aspects of the most common endocrinopathy remain enigmatic.	
<b>Chairpersons</b>	<b>Bart Fauser</b> , <i>Netherlands</i> <b>Scott Nelson</b> , <i>UK</i>	
08:30-08:55	Reproductive fitness in women with PCOS <b>Joop Laven</b> , <i>Netherlands</i>	
08:55-09:15	Understanding PCOS: Diagnosis and treatment <b>Carlo Alviggi</b> , <i>Italy</i>	
09:15-09:35	The endometrium in polycystic ovary syndrome <b>Johannes Ott</b> , <i>Austria</i>	
09:35-10:00	Health in offspring of mothers with PCOS <b>Roger Hart</b> , <i>Australia</i>	

### 10:00-10:20 Coffee break, visit the exhibition and e-poster viewing

10:20-11:50	PGT-A/PGS	HALL A
<b>Capsule</b>	PGT-A is a procedure limited by the biology of the preimplantation embryos?	
<b>Chairpersons</b>	<b>Cornelis B. Lambalk</b> , <i>Netherlands</i> <b>Ernesto Bosch</b> , <i>Spain</i>	
10:20-10:45	PGT-A: Benefit or risk? <b>Sebastian Mastenbroek</b> , <i>Netherlands</i>	
10:45-11:05	The ESHRE PGT consortium <b>Edith Coonen</b> , <i>Netherlands</i>	
11:05-11:30	Why PGT-A cannot work and should be restricted to experimental protocols <b>Norbert Gleicher</b> , <i>USA</i>	
11:30-11:50	ART has a selection problem: More treatments, more money spent, less babies <b>Rita Vassena</b> , <i>Spain</i>	

### 11:50-12:00 Break

12:00-13:00	<b>SESSION SUPPORTED BY AN EDUCATIONAL GRANT</b> <i>See page 153</i>	HALL A
13:00-13:30	<b>ORAL PRESENTATIONS</b>	HALL A
<b>Chairperson</b>	<b>Zion Ben Rafael</b> , <i>Israel</i>	
13:00-13:07	Oocyte activation by piezoelectric activation versus calcium ionophore treatment <b>Birol Aydin</b> , <i>Ukraine</i>	
13:07-13:14	Endocrine stimulation for men with non-obstructive azoospermia prior to micro-tese – can hormonal response predict sperm retrieval? <b>Shlomi Barak</b> , <i>Israel</i>	
13:14-13:21	Human ovarian ageing is characterized by oxidative damage and mitochondrial dysfunction <b>Myrthe Smits</b> , <i>Netherlands</i>	



13:21-13:28	Intrauterine peripheral blood mononuclear cells doubles clinical pregnancy rate in women with recurrent implantation failure: An effect obscured by non-randomized controlled trials – a meta-analysis (Part II) <b>Ezri Chow, Australia</b>
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### 13:30-14:30 Lunch break, visit the exhibition and moderated e-posters

14:30-16:30	EMBRYO TRANSFER (ET)	HALL A
<b>Capsule</b>	ET and Luteal support are not as simple as they seem to be.	
<b>Chairpersons</b>	<b>Ben Cohlen, Netherlands</b> <b>Ben Mol, Australia</b>	
14:30-15:05 14:30 14:40 14:50	<u>Debate: Is HRT the 1st choice to prepare the endometrium for FET?</u> Yes: <b>Bülent Urman, Turkey</b> No: <b>Scott Nelson, UK</b> Discussion	
15:05-15:40 15:05 15:15 15:25	<u>Debate: Evaluation of the endometrium - should we measure progesterone on the day of a frozen embryo transfer</u> Yes: <b>Gijs Tecklenburg, Netherlands</b> No: <b>Annalisa Racca, Spain</b> Discussion	
15:40-15:47	No methylome differences observed In ART children born after embryo culture in different culture media <b>Rebekka Koeck, Netherlands</b>	
15:47-15:54	Does progesterone level influence clinical pregnancy rate after fresh embryo transfer in IVF/ICSI cycles? <b>Rita Nunes, Portugal (virtual)</b>	
15:54-16:30 15:54 16:04 16:14	<u>Debate: Single embryo transfer should be the choice in all cases</u> <b>Yes:</b> Prevention of multiple pregnancy is the goal - <b>Cornelis B. Lambalk, Netherlands</b> <b>No:</b> The myths behind elective single embryo transfer – <b>Norbert Gleicher, USA</b> Discussion	

### 16:30-16:50 Coffee break, visit the exhibition and e-poster viewing

16:50-18:20	ADD-ONS	HALL A
<b>Capsule</b>	Over 70% of IVF patients in the UK and Australia are offered one or more types of Add-Ons. Is it justified?	
<b>Chairpersons</b>	<b>Zion Ben Rafael, Israel</b> <b>Rene Frydman, France</b> <b>Mattheos Fraidakis, Greece</b>	
16:50-17:15	Is endometrial scratching effective? <b>Ben Mol, Australia</b>	
17:15-17:35	Should we keep doing assisted hatching? <b>Ben Cohlen, Netherlands</b>	
17:35-18:00	ERA test - what proof do we have? <b>Max Ezzati, USA</b>	
18:00-18:20	Why add-ons to IVF, likely, are the principal cause for declining IVF live birth rates all over the world <b>Norbert Gleicher, USA</b>	



## SATURDAY, NOVEMBER 26

### ART/IVF/INFERTILITY

08:30-10:00	OVARIAN STIMULATION	HALL A
<b>Capsule</b>	What can be done to improve ovarian stimulation?	
<b>Chairpersons</b>	<b>Rene Frydman</b> , <i>France</i> <b>Zion Ben Rafael</b> , <i>Israel</i>	
08:30-09:00	<b>Debate: Ovarian stimulation, mild or wild or in between</b>	
08:30	Mild and Safe? <b>Frank Broekmans</b> , <i>Netherlands</i>	
08:40	Personalized: <b>Ernesto Bosch</b> , <i>Spain</i>	
08:50	Discussion	
09:00-09:15	What is the optimal number of oocytes we should aim for with ovarian stimulation? <b>Bart Fauser</b> , <i>Netherlands</i>	
09:15-09:35	The type of gonadotrophin for stimulation: Does it matter? <b>Ernesto Bosch</b> , <i>Spain</i>	
09:35-10:00	Stimulation strategies for DOR <b>Carlo Alviggi</b> , <i>Italy</i>	

### 10:00-10:20 Coffee break, visit the exhibition and e-poster viewing

10:20-12:00	HITECH IVF	HALL A
<b>Capsule</b>	These procedures need more proof before using it routinely in the clinic.	
<b>Chairpersons</b>	<b>Rene Frydman</b> , <i>France</i> <b>Catherine Racowsky</b> , <i>France (virtual)</i>	
10:20-10:45	IVM at time of OTC (Ovarian tissue cryopreservation) <b>Claus Yding Andersen</b> , <i>Denmark</i>	
10:45-11:05	Nuclear transplantation for patients with recurrent IVF failure <b>Jacques Cohen</b> , <i>USA</i>	
11:05-11:30	Rejuvenating the ovary by stem cell therapy <b>Nuria Pellicer</b> , <i>Spain (virtual)</i>	
11:30-12:00	ORAL PRESENTATIONS	HALL A
11:30-11:37	Improvement of pregnancy rates in a surrogate motherhood program after enhancement of the Leydig cellular secretory function of the male partner <b>Ioannis Giakoumakis</b> , <i>Greece</i>	
11:37-11:44	Intrauterine autologous platelet-rich plasma infusion doubles clinical pregnancy rate in women with recurrent implantation failure: An effect obscured by non-randomized controlled trials – a meta-analysis (Part I) <b>Ezri Chow</b> , <i>Australia</i>	
11:44-11:51	The determinants of unexpected poor ovarian response in young infertile women (Poseidon Group-1) <b>Ruya Tez</b> , <i>Turkey</i>	
11:51-11:58	Metabolic and angiogenic recovery of human slow frozen-thawed ovarian tissue <b>Rebekka Einenkel</b> , <i>Germany</i>	

### 11:50-12:00 Break



12:00-13:30	FERTILITY PRESERVATION	HALL A
<b>Capsule</b>	Fertility preservation use is growing and so are the doubts surrounding these procedures	
<b>Chairpersons</b>	<b>Claus Yding Andersen, Denmark</b> <b>Norbert Gleicher, USA</b>	
12:00-12:35	<u>Debate: Should we move from fertility preservation to oocytes donation for young women with cancer? When?</u>	
12:00	Preservation of fertility: <b>Catherine Racowsky, France (virtual)</b>	
12:10	Prefer egg donation: <b>Edgardo Somigliana, Italy</b>	
12:20	Discussion	
12:35-12:55	Fertility preservation in oncological patients <b>Jacques Donnez, Belgium</b>	
12:55-13:30	<u>Debate: Asherman syndrome surgery or stem cells?</u>	
12:55	Surgery: You don't need stem cells; you need good surgeons - <b>Miriam Hanstede, Netherlands (virtual)</b>	
13:05	Stem cells: Treat endometrial atrophy through tissue engineering - <b>Nuria Pellicier, Spain (virtual)</b>	
13:15	Discussion	

### 13:30-14:30 Lunch break, visit the exhibition and moderated e-posters

14:30-16:30	ENDOMETRIOSIS AND INFERTILITY	HALL A
<b>Capsule</b>	The challenge is to select the best treatment	
<b>Chairpersons</b>	<b>Norbert Gleicher, USA</b> <b>Jacques Donnez, Belgium</b>	
14:30-14:50	Endometriosis: Does it impact oocyte quality <b>Catherine Racowsky, France (virtual)</b>	
14:50-15:10	Endometriosis - surgery vs conventional ART for infertility <b>Edgardo Somigliana, Italy</b>	
15:10-15:45	<u>Debate: Long term risk of cancer in endometrioma: Immediate surgery, delayed surgery or never surgery?</u>	
15:10	Delayed surgery: <b>Jacques Donnez, Belgium</b>	
15:20	Immediate surgery: <b>Hans Nijman, Netherlands</b>	
15:30	Discussion	
15:45-16:05	Fertility preservation in endometriosis: When should it be offered <b>Edgardo Somigliana, Italy</b>	
16:05-16:30	Oral GnRH Antagonist for treatment of endometriosis <b>Nicholas Leyland, Canada (virtual)</b>	

### 16:30-16:50 Coffee break, visit the exhibition and e-poster viewing



## FRIDAY, NOVEMBER 25

### GYNECOLOGY

08:30-10:00	DILEMMAS IN BENIGN GYNAECOLOGY	HALL B
<b>Capsule</b>	Dilemmas in daily care, which you must deal with. Concerning adnexal masses and heavy menstrual bleeding.	
<b>Chairpersons</b>	<b>Justin Clark</b> , <i>UK</i> <b>Peggy Geomini</b> , <i>Netherlands</i>	
08:30-08:45	What is the best referral policy for patients with an adnexal mass? <b>Peggy Geomini</b> , <i>Netherlands</i>	
08:45-09:15	Differentiating benign from malignant cyst >> how to recognize less common types of benign adnexal masses (struma ovarii/ Brenner tumor/ Sertoli Leydig cell) <b>Jeroen Kaijser</b> , <i>Netherlands</i>	
09:15-09:30	Treatment options in case of HMB with intramural fibroids? <b>Tessel Cooijmans</b> , <i>Netherlands</i>	
09:30-09:45	Is TLH really superior to abdominal hysterectomy? <b>Justin Clark</b> , <i>UK</i>	
09:45-10:00	Endometrial ablation under local anesthetics - is it feasible? <b>Sergio Haimovich</b> , <i>Israel</i>	

#### 10:00-10:20 Coffee break, visit the exhibition and e-poster viewing

10:20-11:50	POI AND MENOPAUSE	HALL B
<b>Capsule</b>	Is genetics a routine tool for predicting menopause, understanding POI and personalized clinical practice?	
<b>Chairpersons</b>	<b>Micheline Misrahi</b> , <i>France</i> <b>Nick Panay</b> , <i>UK</i>	
10:20-10:40	New POI registry for a new era of global collaboration <b>Nick Panay</b> , <i>UK</i>	
10:40-11:05	Over-view of genes involved in POI and physiological menopause. National genomics projects <b>Micheline Misrahi</b> , <i>France</i>	
11:05-11:25	Shared mechanism and genetics between the age of physiological menopause, early menopause and POI <b>Yvonne Louwers</b> , <i>Netherlands</i>	
11:25-11:50	Is there an association between menstrual cycle length and ovarian reserve biomarkers during the reproductive life? <b>Bart Fauser</b> , <i>Netherlands</i>	

#### 11:50-12:00 Break

12:00-13:30	UTERINE MALFORMATION	HALL B
<b>Capsule</b>	No agreement exists on the preferred current treatment of uterine malformation.	
<b>Chairpersons</b>	<b>Pierluigi Benedetti Panici</b> , <i>Italy</i> <b>Peggy Geomini</b> , <i>Netherlands</i>	
12:00-12:15	T-Shaped, Y-Shaped, Dysmorphic – a real reproductive problem or a new trend <b>Sergio Haimovich</b> , <i>Israel</i>	



12:15-12:45 12:15 12:25 12:35	<u>Debate:</u> <b>Dysmorphic uterus, is it a real infertility problem? Is the solution surgical?</b> Pro: <b>Sergio Haimovich, Israel</b> It is a real infertility problem, but the solution is not surgical: <b>Ben Mol, Australia</b> Discussion
12:45-13:15 12:45 12:55 13:05	<u>Debate:</u> <b>Uterine septum in infertility: To treat or not to treat?</b> Pro: <b>Jacques Donnez, Belgium</b> Con: <b>Justin Clark, UK</b> Discussion
13:15-13:30	Endometrial ablation under local anesthetics - is it feasible? <b>Sergio Haimovich, Israel</b>

### 13:30-14:30 Lunch break, visit the exhibition and moderated e-posters

14:30-16:30	MENOPAUSE	HALL B
<b>Capsule</b>	The suggestion to treat menopause with ovarian tissue reimplantation is highly controversial.	
<b>Chairpersons</b>	<b>Justin Clark, UK</b> <b>Dorenda van Dijken, Netherlands</b>	
14:30-14:50	Endocrine disruptors in fertility <b>Christian Egarter, Austria</b>	
14:50-15:20 14:50 15:00 15:10	<u>Debate:</u> <b>Should ovarian tissue reimplantation be considered for all women to postpone menopause</b> Yes: <b>Jacques Donnez, Belgium</b> No: <b>Mark Brincat, Malta</b> Discussion	
15:20-15:35	Postmenopausal hormone treatment and the risk for malignancies <b>Johannes Ott, Austria</b>	
15:35-16:00	Can AMH predict menopause <b>Frank Broekmans, Netherlands</b>	
16:00-16:30	Progesterone from ovulatory menstrual cycles is a major cause of breast cancer <b>Herjan Coelingh Bennink, Netherlands</b>	

### 16:30-16:50 Coffee break, visit the exhibition and e-poster viewing

16:50-18:20	HRT	HALL B
<b>Capsule</b>	The use of androgens and the length of HRT treatment are unsolved.	
<b>Chairpersons</b>	<b>Christian Egarter, Austria</b> <b>Nick Panay, UK</b>	
16:50-17:25 16:50 17:00 17:10	<u>Debate:</u> <b>Should androgens be routinely added to menopause treatment</b> Yes: <b>Alessandra Graziottin, Italy</b> No: <b>Dorenda van Dijken, Netherlands</b> Discussion	
17:25-18:00 17:25 17:35 17:45	<u>Debate:</u> <b>Hormone therapy started in premature or early menopause, should be continued for life to prevent chronic diseases</b> For: <b>Nick Panay, UK</b> Against: <b>Mark Brincat, Malta</b> Discussion	
18:00-18:20	Postmenopausal hormone treatment and the bone <b>Johannes Ott, Austria</b>	



## SATURDAY, NOVEMBER 26

### GYNECOLOGY

08:30-10:00	MANAGEMENT OF VULVOVAGINAL SYMPTOMS	HALL B
<b>Capsule</b>	Genitourinary syndrome of menopause (GSM) formerly "atrophic vaginitis" includes genital symptoms of dryness, burning, and irritation, sexual symptoms of lack of lubrication, discomfort, pain, impaired function and urinary symptoms of urgency, dysuria and recurrent urinary tract infections. What is the best treatment?	
<b>Chairpersons</b>	<b>Johannes Ott</b> , <i>Austria</i> <b>Mark Brincat</b> , <i>Malta</i>	
08:30-08:50	Anatomical and physiological changes of the vulvovaginal tract during peri-menopause <b>Alessandra Graziottin</b> , <i>Italy</i>	
08:50-09:35	<b>Debate: Laser treatment is the first-line choice for Genitourinary Syndrome of Menopause (GSM)?</b>	
08:50	Yes: <b>Zdenko Vizintin</b> , <i>Slovenia</i>	
09:05	No: <b>Dorenda van Dijken</b> , <i>Netherlands</i>	
09:20	Discussion	
09:35-10:00	Sexual pain disorders, vestibulodynia and recurrent cystitis: The evil trio <b>Alessandra Graziottin</b> , <i>Italy</i>	

#### 10:00-10:20 Coffee break, visit the exhibition and e-poster viewing

10:20-11:50	HPV	HALL B
<b>Capsule</b>	Special situations related to HPV vaccination	
<b>Chairpersons</b>	<b>Ward Hofhuis</b> , <i>Netherlands</i> <b>Diede Loopik</b> , <i>Netherlands</i>	
10:20-10:40	HPV vaccination after treatment of CIN <b>Ruud Bekkers</b> , <i>Netherlands</i>	
10:40-11:10	<b>Debate: Should girls and boys both be vaccinated for HPV?</b>	
10:40	Yes: <b>Ralf van de Laar</b> , <i>Netherlands</i>	
10:50	No: <b>Marian Mourits</b> , <i>Netherlands</i>	
11:00	Discussion	
11:10-11:30	The long-term risk of HPV-related disease after CIN3 treatment <b>Diede Loopik</b> , <i>Netherlands</i>	
11:30-11:50	Treatment of HSIL with Imiquimod <b>Meike van de Sande</b> , <i>Netherlands</i>	

#### 11:50-12:00 Break

12:00-13:30	FERTILITY SPARING OPTIONS IN GYNECOLOGIC ONCOLOGY	HALL B
<b>Capsule</b>	Cancer patients should be informed of options for fertility preservation and future reproduction prior to cancer treatment (ASRM). However, gynecologists should be more aware of the current options and results.	
<b>Chairpersons</b>	<b>Pierluigi Benedetti Panici</b> , <i>Italy</i> <b>Heleen van Beekhuizen</b> , <i>Netherlands</i>	





12:00-12:20	Fertility-sparing management in recurrent gynecological cancer <b>Pierluigi Benedetti Panici, Italy</b>
12:20-12:45	Fertility-sparing management in young endometrial cancer patients <b>Heleen van Beekhuizen, Netherlands</b>
12:45-13:05	Fertility-sparing surgery in early-stage cervical cancer <b>Petra Zusterzeel, Netherlands</b>
13:05-13:30	New paradigm of ovarian cancer: More than meets the eye <b>Marian Mourits, Netherlands</b>

### 13:30-14:30 Lunch break, visit the exhibition and moderated e-posters

<b>14:30-16:00</b>	<b>SLS - SOCIETY OF LAPAROSCOPIC &amp; ROBOTIC SURGEONS</b>	<b>HALL B</b>
<b>Chairperson</b>	<b>Jessica Ybanez Morano, USA</b>	
14:30-14:55	Cryo endometrial ablation - another alternative <b>Jessica Ybanez Morano, USA</b>	
14:55-15:15	The future of Minimally invasive surgery for the fertility patient <b>Mona Orady, USA (virtual)</b>	
15:15-15:40	Laparoscopic gynecologic surgery under regional neuraxial anaesthesia: the beginning of a new era? <b>Stefano Landi, Italy</b>	
15:40-16:00	Parametrial endometriosis <b>Thiers Soares, Brazil (virtual)</b>	
<b>16:00-16:30</b>	<b>ORAL PRESENTATIONS</b>	<b>HALL B</b>
16:00-16:07	An old topic revisited. Diagnostic hysteroscopy prior to the first IVF cycle. Systematic review and updated meta-analysis <b>Maria Carrera, Spain</b>	
16:07-16:14	A comparison between vaginal notes hysterectomy versus vaginal hysterectomy: Retrospective cohort study <b>Ashley Thakur, USA</b>	
16:14-16:21	Outcome of fertility, pregnancy and neonatal of patient with adenomyosis <b>Surya Udayana Gusti Ngurah Bagus, Indonesia (virtual)</b>	
16:21-16:28	New surgical approach for the treatment of posterior fourchette fissure: The double Z-plasty with V-Y advancement (Jumping Man Flap) <b>Ana Rosa Araujo Andrade, Portugal (virtual)</b>	

### 16:30-16:50 Coffee break, visit the exhibition and e-poster viewing



## FRIDAY, NOVEMBER 25

### FETOMATERNAL MEDICINE

08:30-10:00	PROGESTERONE & PROTECTION OF PREGNANCY - A PREIS SCHOOL ACADEMY SESSION	HALL C
<b>Capsule</b>	Progesterone (and not progestins) has shown multifaceted roles in pregnancy and recent RCTS and metanalysis have confirmed a role of micronised progesterone in appropriate dosage and timing to prevent recurrent miscarriage and preterm birth and manage threatened miscarriage.	
<b>Chairperson</b>	<b>Zion Ben Rafael</b> , <i>Israel</i>	
08:30-08:35	Introduction <b>Zion Ben Rafael</b> , <i>Israel</i>	
08:35-08:50	A narrative story of progesterone and progestins <b>Paul Piette</b> , <i>Belgium</i>	
08:50-09:15	Sporadic and recurrent miscarriage: Preventive tools <b>Adam Devall</b> , <i>UK</i>	
09:15-09:35	Preterm birth: Prediction and prevention <b>Gerard Visser</b> , <i>Netherlands</i>	
09:35-09:55	Q & A	
09:55-10:00	Conclusion	

#### 10:00-10:20 Coffee break, visit the exhibition and e-poster viewing

10:20-11:50	HOT CONTROVERSIES	HALL C
<b>Capsule</b>	Innovations in obstetrics	
<b>Chairpersons</b>	<b>Basky Thilaganathan</b> , <i>UK</i> <b>Amir Aviram</b> , <i>Canada</i>	
10:20-10:50	<b>Debate: cfDNA testing</b>	
10:20	For Universal cfDNA testing by genome wide approach: <b>Mireille Bekker</b> , <i>Netherlands</i>	
10:30	Against genome wide cfDNA testing: <b>Tina Buchholz</b> , <i>Germany</i>	
10:40	Discussion	
10:50-11:05	Stem cells in obstetrics and gynecology <b>Wolfgang Holzgreve</b> , <i>Germany</i>	
11:05-11:20	Fetal surgery: Learning curve <b>Luc Joyeux</b> , <i>Belgium (virtual)</i>	
11:20-11:35	TTTS +/- sFGR: Long-term effects <b>Jeanine van Klink</b> , <i>Netherlands</i>	
11:35-11:50	Treatment of Rh disease <b>Joanne Verweij</b> , <i>Netherlands</i>	

#### 11:50-12:00 Break

12:00-13:30	HYPERTENSIVE DISORDERS	HALL C
<b>Capsule</b>	Hypertensive disorders are associated with underlying placental and maternal changes, and are associated with endothelial dysfunction and vasospasm, leading to placental insufficiency and serious consequences for the mother and infant.	
<b>Chairpersons</b>	<b>Arie Franx</b> , <i>Netherlands</i> <b>Gerard Visser</b> , <i>Netherlands</i>	



12:00-12:20	What is new and controversial in hypertension in pregnancy? <b>Asma Khalil, UK</b>
12:20-12:45	The SNAP-HT trial: Optimal postpartum BP control <b>Paul Leeson, UK</b>
12:45-13:05	Does birth cure preeclampsia? <b>Basky Thilaganathan, UK</b>
13:05-13:30	New treatments to prevent complications <b>Emmanuel Attali, Israel</b>

### 13:30-14:30 Lunch break, visit the exhibition and moderated e-posters

<b>14:30-15:30</b>	<b>AN ARTIFICIAL WOMB FOR EXTREMELY PRETERM INFANTS</b>	<b>HALL C</b>
<b>Capsule</b>	Is it possible and is it ethical to maintain alive an extremely premature baby?	
<b>Chairpersons</b>	<b>Guid Oei, Netherlands</b> <b>Mats Brännström, Sweden</b>	
14:30-14:50	An artificial womb for extremely preterm infants <b>Guid Oei, Netherlands</b>	
14:50-15:10	Development of a liquid-based incubator for extremely premature infants <b>Mark Schoberer, Germany</b>	
15:10-15:30	Ethical aspects of the development of a liquid based incubator <b>Joanne Verweij, Netherlands</b>	
<b>15:30-16:30</b>	<b>MATERNAL VACCINATION</b>	
<b>Capsule</b>	Offering maternal vaccination when its available, when do we reject the idea?	
<b>Chairpersons</b>	<b>Kitty Bloemenkamp, Netherlands</b> <b>Mireille Bekker, Netherlands</b>	
15:30-15:50	Efficacy and safety of available maternal vaccinations: Update on available literature (syst review) <b>Odette de Bruin, Netherlands</b> <b>Emily Phijffer, Netherlands</b>	
15:50-16:00	Maternal vaccinations: EMA's perspective <b>Corinne de Vries, Netherlands</b>	
16:00-16:10	Maternal vaccinations: Patients perspective (Infant protection through maternal immunization, why do women accept or don't accept maternal vaccinations) <b>Flor M. Munoz, USA (virtual)</b>	
16:10-16:30	Panel Discussion	

### 16:30-16:50 Coffee break, visit the exhibition and e-poster viewing

<b>16:50-18:20</b>	<b>GDM AND PRE-GDM</b>	<b>HALL C</b>
<b>Chairpersons</b>	<b>Yariv Yogev, Israel</b> <b>Gerard Visser, Netherlands</b>	
16:50-17:15	How to define well glycemc control <b>Yariv Yogev, Israel</b>	
17:15-17:35	GDM in twins - more harm than a disease? <b>Nir Melamed, Canada</b>	
17:35-18:00	Pragmatic approach for GDM diagnosis <b>Eran Ashwal, Canada</b>	
18:00-18:20	What is the best pharmacological therapy for GDM? (Metformin\glyburide\insulin?) <b>Yariv Yogev, Israel</b>	



## SATURDAY, NOVEMBER 26

### FETOMATERNAL MEDICINE

08:30-10:00	INTRAPARTUM CARE	HALL C
<b>Capsule</b>	Simple procedures in obstetrics are so common and so controversial, why?	
<b>Chairpersons</b>	<b>Liran Hiersch</b> , <i>Israel</i> <b>Eran Ashwal</b> , <i>Canada</i>	
08:30-08:50	Oxytocin use during labor <b>Inês Nunes</b> , <i>Portugal (virtual)</i>	
08:50-09:15	When to perform an episiotomy <b>Katariina Laine</b> , <i>Norway</i>	
09:15-09:35	Assisted vaginal delivery <b>Amir Aviram</b> , <i>Canada</i>	
09:35-10:00	Diagnosing arrested labor <b>Diogo Ayres-de-Campos</b> , <i>Portugal (virtual)</i>	

#### 10:00-10:20 Coffee break, visit the exhibition and e-poster viewing

10:20-11:50	ROUND TABLE DISCUSSION	HALL C
<b>Capsule</b>	Hot controversies as seen by the experts	
<b>Chairpersons</b>	<b>Gerard Visser</b> , <i>Netherlands</i> <b>Yariv Yogev</b> , <i>Israel</i>	
<b>Discussants</b>	<b>Arie Franx</b> , <i>Netherlands</i> <b>Basky Thilaganathan</b> , <i>UK</i> <b>Asma Khalil</b> , <i>UK</i> <b>Liran Hiersch</b> , <i>Israel</i> <b>Nir Melamed</b> , <i>Canada</i>	
	<ul style="list-style-type: none"> <li>• Twins with asymptomatic mid-trimester short cervix. Cerclage? Progesterone? Pessary? Neither?</li> <li>• CS or vaginal delivery in preterm delivery prior to 32, 28 weeks of gestation</li> <li>• Should all women be induced at 39 weeks, when of gestation?</li> <li>• Need for steroids at 34-37 weeks?</li> <li>• Stillbirth/preterm birth/FGR according to ethnic and socioeconomic inequality - should induce women from ethnic minorities or socioeconomic deprived backgrounds to avoid stillbirth?</li> </ul>	

#### 11:50-12:00 Break

12:00-13:30	OBESITY	HALL C
<b>Capsule</b>	Obesity and morbidity are related but can anything be done?	
<b>Chairpersons</b>	<b>Yariv Yogev</b> , <i>Israel</i> <b>Gerard Visser</b> , <i>Netherlands</i>	
12:00-12:20	Diabetes or obesity - what affects more on the fetus and the mother? <b>Gerard Visser</b> , <i>Netherlands</i>	
12:20-12:45	The impact of bariatric surgery on pregnancy outcome <b>Sam Schoenmakers</b> , <i>Netherlands</i>	



12:45-13:05	Should obese women be advocated to lose weight in pregnancy? <b>Yariv Yogev, Israel</b>
13:05-13:30	Should all morbid obese women be induced at 38 weeks? <b>Arie Franx, Netherlands</b>

### 13:30-14:30 Lunch break, visit the exhibition and moderated e-posters

14:30-15:00	CONTROVERSIAL ISSUES	HALL C
<b>Capsule</b>	Reducing twins is questionable and ethically controversial, should we do it and when?	
<b>Chairpersons</b>	<b>Gerard Visser, Netherlands</b> <b>Eran Ashwal, Canada</b>	
14:30-15:00	<b>Debate: Should we reduce twins to singleton?</b>	
14:30	Yes: <b>Yariv Yogev, Israel</b>	
14:40	No: <b>Yinon Gilboa, Israel</b>	
14:50	Discussion	
15:00-16:30	PRETERM DELIVERY	
<b>Capsule</b>	How to assess and prevent premature delivery?	
15:00-15:20	US during labor <b>Yinon Gilboa, Israel</b>	
15:20-15:35	Cervical length screening - does it vary in different populations? <b>Martijn Oudijk, Netherlands</b>	
15:35-15:50	Pessary for preterm labor prevention – current evidence <b>Emmanuel Attali, Israel</b>	
15:50-16:10	Cerclage – current evidence <b>Amir Aviram, Canada</b>	
16:10-16:30	Special lecture: Non-invasive prenatal screening, both cell-based NIPS and with proteomic based screening <b>Michael Sinosich, Australia</b>	

### 16:30-16:50 Coffee break, visit the exhibition and e-poster viewing

16:50-18:20	LABOR AND DELIVERY	HALL C
<b>Chairpersons</b>	<b>Nir Melamed, Canada</b> <b>Basky Thilaganathan, UK</b>	
16:50-17:15	What week to operate HR gestation, (placenta previa, placenta accrete? s/p more than 2 CS)? <b>Hans Duvkot, Netherlands</b>	
17:15-17:40	Can we screen routinely for placenta accrete and vasa previa? <b>Basky Thilaganathan, UK</b>	
17:40-18:20	<b>Debate: All twins should be delivered by CS</b>	
17:40	Yes: <b>Liran Hiersch, Israel</b>	
17:50	No: <b>Eran Ashwal, Canada</b>	
18:00	Discussion	



## FRIDAY, NOVEMBER 25

### ART/IVF/INFERTILITY II

#### SESSION 1

08:30-10:00	MALE INFERTILITY LAB WORK	HALL D
<b>Capsule</b>	Have we made any progress in male infertility?	
<b>Chairpersons</b>	<b>Mina Alikani, USA</b> <b>Ans van Pelt, Netherlands</b>	
08:30-08:55	Unraveling the causes of male infertility: The role of genetics <b>Frank Tüttelmann, Germany (virtual)</b>	
08:55-09:20	Genetic screening in male infertility: Time for new guidelines? <b>Manon Oud, Netherlands</b>	
09:20-09:40	Scientific developments in male fertility preservation <b>Ans van Pelt, Netherlands</b>	
09:40-10:00	Real-time sperm analysis using artificial intelligence at the time of ICSI: Correlation of single sperm characteristics with fertilization and blastocyst formation using SiD; a proof-of-concept <b>Andrew Drakeley, UK</b>	

#### 10:00-10:20 Coffee break, visit the exhibition and e-poster viewing

10:20-11:50	DIAGNOSIS AND TREATMENT OF ENDOMETRIOSIS	HALL D
<b>Capsule</b>	Endometriosis is a common inflammatory, estrogen-dependent condition associated with various symptoms affecting fertility and quality of life. Treatment ranges from “imperfect” medical options to surgical. Is the newly marketed oral GnRH receptors antagonist a game-changer?	
<b>Chairpersons</b>	<b>Ben Cohlen, Netherlands</b> <b>Ludovico Muzii, Italy</b>	
10:20-10:50	Biomarkers in endometriosis <b>Arne Vanhie, Belgium</b>	
10:50-11:10	The role of US and MRI in diagnosis of DE <b>Annemiek Nap, Netherlands</b>	
11:10-11:35	Endometriosis: Is it a systemic disease? <b>Ludwig Kiesel, Germany</b>	
11:35-11:50	Treatment of endometriosis - surgical or medical? <b>Jacques Maas, Netherlands</b>	

#### 11:50-12:00 Break



<b>12:00-13:30</b>	<b>FEMTECH AND FERTILITY: ARE WOMEN TAKING BACK CONTROL?</b>	<b>HALL D</b>
<b>Chairpersons</b>	<b>Nick Macklon, UK</b> <b>Jacky Boivin, UK</b>	
<b>Capsule</b>	Review the booming field of wearable tech. Does it work? Where is it heading?	
12:00-12:30	The rise and rise of Femtech in fertility <b>Ying Cheong, UK</b>	
<b>Capsule</b>	Can apps provide effective psych support and help change behaviours?	
12:30-13:00	Are apps replacing us? Who cares? <b>Jacky Boivin, UK</b>	
<b>Capsule</b>	Review and debate the motivations for egg freezing and the societal implications	
13:00-13:30	Egg freezing- who is taking back control? <b>Nick Macklon, UK</b>	

### 13:30-14:30 Lunch break, visit the exhibition and moderated e-posters

<b>14:30-16:30</b>	<b>LABORATORY TECHNIQUES</b>	<b>HALL D</b>
<b>Capsule</b>	Will AI ever replace the biologists?	
<b>Chairpersons</b>	<b>Rita Vassena, Spain</b> <b>Mina Popovic, Belgium</b>	
14:30-14:55	Has time-lapse technology finally proven its clinical benefit? Is it cost effective? <b>Dorit Kieslinger, Netherlands</b>	
14:55-15:20	Synthetic human entities with embryo-like features <b>Mina Popovic, Belgium</b>	
15:20-15:45	Blastulation rate: The golden KPI for self-evaluation in laboratory <b>Laura Rienzi, Italy</b>	
15:45-16:10	AI will replace the embryologist in our lab: Yes, or no? <b>Andrew Drakeley, UK</b>	
16:10-16:30	Problems with using polygenic scores to select embryos <b>Patrick Turley, USA (virtual)</b>	

### 16:30-16:50 Coffee break, visit the exhibition and e-poster viewing

<b>16:50-18:20</b>	<b>FET (FROZEN EMBRYO TRANSFER) - TURKISH SOCIETY OF REPRODUCTIVE MEDICINE SESSION</b>	<b>HALL D</b>
<b>Chairpersons</b>	<b>Cem Atabekoglu, Turkey</b> <b>Berrin Avci, Turkey</b>	
16:50-17:05	FET should be the first option for some patients <b>Işıl Kasapoğlu, Turkey</b>	
17:05-17:20	Delayed versus immediate FET? <b>Esra Bulgan Kılıçdağ, Turkey</b>	
17:20-17:35	Is there an ideal hormonal preparation for FET? <b>Sezcan Mumusoglu, Turkey</b>	
17:35-17:50	Q & A	
17:50-18:20	Pro-Con discussion: <b>PGT/A for recurrent implantation failure &amp; pregnancy loss</b> Moderator: <b>Cem Atabekoglu, Turkey</b>	
17:50	PRO: <b>Sezcan Mumusoglu, Turkey</b>	
18:00	CON: <b>Bülent Urman, Turkey</b>	
18:10	Discussion	



## ORAL PRESENTATIONS


### FRIDAY, NOVEMBER 25

08:30-10:00	ORAL PRESENTATIONS 1: INFERTILITY/ART/IVF	HALL E
<b>Chairpersons</b>	<b>Edgardo Somgaliana</b> , <i>Italy</i> <b>Emina Ejubovic</b> , <i>Bosnia and Herzegovina</i>	
08:30-08:37 	A novel classification system of 4-cell embryos for better prognostic outcomes and reduced inter-clinic variability <b>Rishabh Hariharan</b> , <i>UK</i>	
08:37-08:44	Is double frozen blastocyst transfer better than sequential single frozen blastocyst transfers in women > 35 years of age? <b>Sinem Ertas</b> , <i>Turkey</i>	
08:44-08:51	Perinatal results after frozen versus fresh embryo transfer: A comparative cohort study <b>Alicia Vazquez Sarandeses</b> , <i>Spain (virtual)</i>	
08:51-08:58	'Keep calm and carry on' chance of a live birth beyond 5 ART cycles based on a large national ART registry <b>Saloni Parkari</b> , <i>USA (virtual)</i>	
08:58-09:05	Mesenchymal stem cells and decellularized uterus tissue promotes regeneration after transplantation in the rat by skewing the immune response towards a regenerative state <b>Edina Sehic</b> , <i>Sweden</i>	
09:05-09:12	Exploring the experiences of English-speaking women who have moved to Israel and subsequently used Israeli fertility treatment services: A qualitative study <b>Lucy Davies</b> , <i>UK</i>	
09:12-09:19	Association between on-day serum progesterone concentration and frozen embryo transfer (FET) outcomes <b>Ana Beatriz De Almeida</b> , <i>Portugal (virtual)</i>	
09:19-09:26	The influence of macroprolactinemia in hyperprolactinemia <b>Emina Ejubovic</b> , <i>Bosnia and Herzegovina</i>	
09:26-09:33	Pronuclear transfer in woman with diminished ovarian reserve: Does PNT impact embryo euploidy? <b>Daria Hudkova</b> , <i>Ukraine</i>	
09:33-09:40	Fallopian tube patency diagnosed by laparoscopic chromopertubation in infertile women with endometriosis: A retrospective cohort study about the influence of endometriosis stages and incidental endometriosis <b>Daniel Mayrhofer</b> , <i>Austria</i>	
09:40-09:47	Does serum AMH level affect the incidence of multinuclear embryos in ICSI cycles? <b>Sumeyye Mermi</b> , <i>Turkiye</i>	
09:47-09:54	Do male stress biomarkers transmitted into female reproductive tract by seminal plasma impact on ICSI outcomes? <b>Marina Nikolaeva</b> , <i>Russia (virtual)</i>	





10:20-11:50	ORAL PRESENTATIONS 2: GYNECOLOGY	HALL E
<b>Chairpersons</b>	<b>Mark Brincat</b> , <i>Malta</i> <b>Helen O'Neill</b> , <i>UK</i>	
10:20-10:27	Femtech meet biotech: The use of machine learning to enable predictive algorithms for reproductive and gynaecological conditions through digital diagnostics and at-home hormone testing <b>Helen O'Neill</b> , <i>UK</i>	
10:27-10:34	The impact of body mass index and lifestyle factors on serum concentrations of reproductive and thyroid hormones in premenopausal women <b>Helen O'Neill</b> , <i>UK</i>	
10:34-10:41	Role of vascular endothelial cell growth factor on pathophysiology of uterine adenomyosis <b>Jae Young Kwack</b> , <i>South Korea</i>	
10:41-10:48	Novel technique of vaginoplasty developing normal vagina, role of stemness markers and translational genes <b>Pravin Mhatre</b> , <i>India</i>	
10:48-10:55	Safety and efficacy of an innovative atraumatic cervical stabilizer for IUD insertion: Results from a randomized, single blind controlled study <b>Michal Yaron</b> , <i>Switzerland</i>	
10:55-11:02	Non pharmacological approach to and treatment of dysmenorrhea <b>Viola Greco</b> , <i>Italy (virtual)</i>	
11:02-11:09	Prevalence of sexual dysfunction in women with type 1, 2 diabetes and thyroid disorder: A cross-sectional study in Taif City, Saudi Arabia <b>Raghad Al Thobaiti</b> , <i>Saudi Arabia</i>	
11:09-11:16	A case report: Isolated tubal torsion <b>Sezgi Gullu Erciyestepe</b> , <i>Turkiye (virtual)</i>	
11:16-11:23	Vaginal natural orifice transluminal endoscopic surgery (vNOTES) in a morbidly obese patient with endometrial hyperplasia with atypia <b>Patricia Marie Fernandez</b> , <i>Philippines</i>	
11:23-11:30	A rare mullerian anomaly with one vagina, double cervix, bicornuate uterus and rudimentary horn <b>Samina Hameed</b> , <i>UK</i>	
11:30-11:37	Laparoscopic adenomyomectomy in the single uterus of the uterus didelphys <b>Jisu Hong</b> , <i>South Korea</i>	
11:37-11:44	Rare presentation of genital TB in adolescent girl as primary amenorrhea with pyocolpos <b>Deepika</b> , <i>India</i>	

12:00-13:30	ORAL PRESENTATIONS 3: FETOMATERNAL MEDICINE	HALL E
<b>Chairpersons</b>	<b>Gerard Visser</b> , <i>Netherlands</i> <b>Angret De Boer</b> , <i>Netherlands</i>	
12:00-12:07	Assessment of females' awareness about gestational diabetes mellitus in Jeddah, Saudi Arabia - a cross-sectional study <b>Renad Abualsaud</b> , <i>Saudi Arabia</i>	
12:07-12:14 	Prevalence and in-depth analysis of maternal mortality in the tertiary hospital in Southern Thailand: A 16-year experience <b>Ninizna Ratipann</b> , <i>Thailand</i>	



12:14-12:21	Splenic artery aneurysms in pregnancy: A systematic review <b>Yuri Aung, UK</b>
12:21-12:28	Performance of fetal ultrasound and magnetic resonance imaging in predicting birthweight according to the test-to-delivery interval <b>Dominique Badr, Belgium</b>
12:28-12:35 	Prophylactic radiologic interventions to reduce postpartum hemorrhage in women with placenta accreta spectrum disorder: A multicenter cohort study <b>Lisanne Bonsen, Netherlands</b>
12:35-12:42	Late-onset fetal growth restriction (FGR) – Is it worth its diagnosis? <b>Carolina Carneiro, Portugal (virtual)</b>
12:42-12:49	Mode of delivery in uncomplicated monochorionic diamniotic pregnancies and perinatal outcomes: A single-center retrospective cohort study <b>Ines Castro, Portugal (virtual)</b>
12:49-12:56	Perinatal and postnatal outcomes of monoamniotic monochorionic twin gestation: A 10 year cohort <b>Ines Castro, Portugal (virtual)</b>
12:56-13:03	Maternal obesity and stress can directly affect preimplantation embryo development <b>Stefan Cikos, Slovakia (virtual)</b>
13:03-13:10	Values in decisions at the limits of viability – perspectives of parents and prematurely born adults <b>Angret De Boer, Netherlands</b>
13:10-13:17	Utilization, patterns, and adequacy of antenatal care during the Covid-19 pandemic: A cross-sectional survey among Filipino women <b>Glaiza De Guzman, Philippines</b>
13:17-13:24	Correlation of prenatal care compliance with fetal outcomes in terms of Apgar score, birth weight and preterm deliveries among teenage pregnancy patients <b>Ma. Gladys Garcia, Philippines</b>
13:24-13:31	Vaginal breech delivery following failed external cephalic version - is it safe? <b>Danit Aviv, Israel</b>


<b>14:30-16:30</b>	<b>ORAL PRESENTATIONS 4: INFERTILITY/ART/IVF, DIAGNOSTIC PROCEDURES, OTHER</b>	<b>HALL E</b>
<b>Chairpersons</b>	<b>Jacques Cohen, USA</b> <b>Mordechai Ben David, Israel</b>	
<b>INFERTILITY/ART/IVF</b>		
14:30-14:37	Etiological factors for biochemical pregnancy in intracytoplasmic sperm injection cycles <b>Ozlem Moraloglu Tekin, Turkiye</b>	
14:37-14:44	The difficult cases of adenomyosis in women undergoing in vitro fertilization treated with long protocol: A cases series report <b>Rina Nulianti, Indonesia</b>	
14:44-14:51	Attitudes toward anonymity of gamete donation in donor oocyte recipients in Spain <b>Rocio Nunez Calonge, Spain</b>	
14:51-14:58	In vitro growth (IVG) of human ovarian follicles in frozen thawed ovarian cortex tissue culture supplemented with follicular fluid under hypoxic conditions <b>Andreas Schallmoser, Germany</b>	
14:58-15:05	Effect of adenomyosis on in vitro fertilization outcomes <b>William Setiawan, Indonesia (virtual)</b>	



15:05-15:12	Environmental pollution: The implication of certain endocrine-disrupting chemicals in male fertility aetiology <b>Renata Tavares, Portugal (virtual)</b>
15:12-15:19	Pregnancy outcome after in-vitro fertilization in patients with genital tuberculosis: A systematic review and meta-analysis <b>Dian Tjahyadi, Indonesia</b>
15:19-15:26	Maternal body mass index does not significantly influence in vitro fertilization outcomes <b>Kevin Dominique Tjandraprawira, Indonesia</b>
15:26-15:33	Presence of isthmocele in previous cesarean section and its effect on implantation factors <b>Zeynep Esin Tuncay, Turkiye</b>
15:33-15:40	Controversies in IVF management of endometrial tuberculosis related infertility: Serial case reports from Indonesia <b>Fridya Wulandari, Indonesia</b>
15:40-15:47	Diabetes and reproduction <b>Joseph Prince Yeboah, Ghana</b>
15:47-15:54	The correlation between antral follicle count and anti mullerian hormone with follicle output rate (FORT) on controlled ovarian hyperstimulation in IVF program at RSHS in 2021 <b>Rika Effendy, Indonesia</b>
<b>DIAGNOSTIC PROCEDURES</b>	
15:54-16:01	Reduced accuracy of gold top blood collection tubes for reproductive hormone profiling in capillary blood samples <b>Natalie Getreu, UK</b>
16:01-16:08	Redefining laboratory reference ranges for female reproductive and thyroid hormones <b>Natalie Getreu, UK</b>
16:08-16:15	Preoperative sonographic sliding sign for prediction of intra-abdominal adhesion before repeat cesarean delivery <b>Chusana Petpichetchian, Thailand</b>
<b>OTHER</b>	
15:15-16:22	Introduction of a standardised proforma to optimise post-operative analgesia after caesarean section <b>Prashant Neupane, UK</b>
16:22-16:29	NHS-funded IVF treatment criteria excludes majority of those actively trying to conceive <b>Helen O'Neill, UK</b>

<b>16:50-18:20</b>	<b>ORAL PRESENTATIONS 5: GYNECOLOGICAL ONCOLOGY, GYNECOLOGY</b>		<b>HALL E</b>
<b>Chairpersons</b>	<b>Mordechai Ben David, Israel</b> <b>Zinnat Nasreen, Bangladesh</b>		
<b>GYNECOLOGICAL ONCOLOGY</b>			
16:50-16:57	Squamous cell carcinoma moderately differentiated arising from a mature cystic teratoma - A case report <b>Hanz Deihl Carmona, Philippines</b>		
16:57-17:04	Case report: A case of uterine tumour resembling ovarian sex cord tumour with lung metastases <b>Bernice Farrugia, Malta (virtual)</b>		
17:04-17:11	I'm too young for this! <b>Charmaine Clarisse Gutierrez, Philippines</b>		
17:11-17:18	Successful menarche after GNRHA treatment in a patient who developed ovarian hyperthecosis secondary to juvenile granulosa tumor <b>Arby Iqualada, Philippines</b>		




17:18-17:25 	Online multidisciplinary tumor boards in low-and-middle-income-countries to achieve health equity: A PARSGO initiative <b>Niki Katsara-Antonakea, Germany</b>
<b>GYNECOLOGY</b>	
17:25-17:32	Unilateral ovarian and fallopian tube agenesis with extragonadal dermoid cyst <b>Bernadette Ann Alcazaren, Philippines</b>
17:32-17:39	Impact of limited reproductive health awareness on PCOS diagnosis timelines and need for improved patient education <b>Helen O'Neill, UK</b>
17:39-17:46	Exploring women's perspectives on dismissal of reproductive health symptoms by medical professionals <b>Helen O'Neill, UK</b>
17:46-17:53	Mosaic Turner's Syndrome as the cause of primary ovarian insufficiency <b>Ana Rosa Araujo Andrade, Portugal (virtual)</b>
17:53-18:00	Accidentally and intentionally cut the ureter during gynecological procedure: A case report <b>Mirah Avisha, Indonesia</b>
18:00-18:07	Turner Syndrome associated with Mayer-Rokitansky-Kuster-Hauser Syndrome: A case report and review of literature <b>Glaiza De Guzman, Philippines</b>
18:07-18:14	Struma ovarii associated Pseudo-Meigs' Syndrome with concomitant abdominopelvic tuberculosis masquerading as ovarian malignancy <b>Nicole Anna Marie Dionisio, Philippines</b>



## SATURDAY, NOVEMBER 26

08:30-10:00	ORAL PRESENTATIONS 6: FETOMATERNAL MEDICINE	HALL E
<b>Chairperson</b>	<b>Paul Leeson, UK</b>	
08:30-08:37	Two subtypes of surgery-categorized upper-lateral intracavitary pregnancy identified by MRI, a retrospective study <b>Weili Xie, China (virtual)</b>	
08:37-08:44	Identification of potential factors contributing to successful vaginal birth after cesarean section (VBAC)- a meta-analysis and systematic review approach <b>Felicia Amma Yeboah, Ghana</b>	
08:44-08:51	10 years of triplet pregnancies – a tertiary center experience <b>Ines Gil Dos Santos, Portugal (virtual)</b>	
08:51-08:58	Inducing labor and route of delivery in twin pregnancies when the second twin is in breech <b>Ines Gil Dos Santos, Portugal (virtual)</b>	
08:58-09:05	Programmable births in Gestational Diabetes Mellitus: Minimizing risks - improving maternal and perinatal outcomes <b>Olga Lukanovskaia, Russia (virtual)</b>	
09:05-09:12	Maternal and neonatal outcomes in late preterm preeclampsia: A three-year retrospective study <b>Alexis Martinez, Philippines</b>	
09:12-09:19	Very early and extreme preterm labor – what is the optimal mode of delivery? <b>Carolina Moura, Portugal (virtual)</b>	
09:19-09:26	Risk of preeclampsia and FGR in chronic hypertensive pregnant women - applicability of a lower blood pressure threshold <b>Carolina Moura, Portugal (virtual)</b>	
09:26-09:33	Knowledge and practices regarding folic acid supplementation among pregnant women in a rural area of central India: A cross sectional study <b>Anjali Pal, India</b>	
09:33-09:40	Preterm birth research in Southeast Asia and its association with socioeconomic determinants and burden of disease: A bibliometric analysis <b>Koleen Pasamba, Philippines</b>	
09:40-09:47	Changing trends of maternal mortality in tertiary care centre and teaching hospital of Central India: A retrospective study <b>Ragini Shrivastava, India</b>	

10:20-11:50	ORAL PRESENTATIONS 7: FETOMATERNAL MEDICINE	HALL E
<b>Chairperson</b>	<b>Michael Sinosich, Australia</b>	
10:20-10:27	Predictors of adverse perinatal outcomes in fetal growth restriction using a combination of maternal clinical factors and simple ultrasound parameters <b>Pathinya Punyapet, Thailand</b>	
10:27-10:34	Artificial intelligence for automatic classification of occiput anterior/posterior/transverse positions <b>Ruben Ramirez Zegarra, Germany</b>	
10:34-10:41 	The accuracy of non-invasive prenatal screening with cell-free DNA for segmental copy number variants: A systematic review and meta-analysis <b>Yvette Raymond, Australia (virtual)</b>	



10:41-10:48	The positive predictive value of non-invasive prenatal screening for rare autosomal trisomies and copy number variants, and associations with confined placental mosaicism and fetal growth restriction <b>Yvette Raymond, Australia (virtual)</b>
10:48-10:55	Fetal cardiac rhabdomyoma in the context of maternal tuberous sclerosis – A case report <b>Mariana Salgado Simoes, Portugal (virtual)</b>
10:55-11:02	Clinical overview in pregnancy with Covid-19 at Prof. Dr. I.G.N.G. Ngoerah Hospital period of April 2020 – March 2021 <b>Alisza Novrita Sari, Indonesia (virtual)</b>
11:02-11:09	Pregnancy and Spontaneous Coronary Artery Dissection (SCAD) <b>Uzma Sharif, United Arab Emirates (virtual)</b>
11:09-11:16	Towards personalized prenatal healthcare <b>Michael Sinosich, Australia</b>
11:16-11:23	Trophoblast index: A novel non-invasive prenatal screen <b>Michael Sinosich, Australia</b>
11:23-11:30	Recurrent Pregnancy Loss (RPL): Does the number of miscarriages affect the final outcome? <b>Maria Ines Sousa, Portugal (virtual)</b>
11:30-11:37	A risk score model to predict adverse perinatal outcomes in fetal growth restriction using a combination of maternal clinical factors and simple ultrasound parameters <b>Chitkasaem Suwanrath, Thailand</b>
11:37-11:44	Cervical cerclage in practice, what do experts actually achieve? <b>Graham Tydeman, UK</b>

12:00-13:30	ORAL PRESENTATIONS 8: GYNECOLOGY	HALL E
<b>Chairpersons</b>	<b>Jessica Ybanez Morano, USA</b> <b>Eileen Manalo, Philippines</b>	
12:00-12:07	Reproductive performance of women with and without intrauterine adhesions following curettage for miscarriage <b>Angelo Hooker, Netherlands</b>	
12:07-12:14	Association of endometriosis and oxidative stress <b>Surya Udayana I Gusti Ngurah Bagus, Indonesia (virtual)</b>	
12:14-12:21	Gynecological morbidity in adolescence in Moldova <b>Corina Iliadi-Tulbure, Moldova</b>	
12:21-12:28	Early menarche and premature menopause distributions based on diabetes status among postmenopausal women: A descriptive analysis from the IFLS study <b>Nirmin Juber, United Arab Emirates</b>	
12:28-12:35	USP10 modulates estrogen receptor in uterine adenomyosis <b>Jae Young Kwack, South Korea</b>	
12:35-12:42	Laparoscopic surgery for uterine adenomyosis: How to resect as complete as possible while preserving the uterus by 3-step approach <b>Yong-Soon Kwon, South Korea</b>	
12:42-12:49	Villar's Nodule: A rare type of endometriosis <b>Andreia Miranda, Portugal (virtual)</b>	
12:49-12:56	New option in the treatment of genitourinary syndrome of menopause <b>Yuliya Savochkina, Belarus</b>	



12:56-13:03	Pregnancy and delivery outcome after adenomyomectomy by a single surgeon: Updated data from 2019 to 2022 <b>Minji Seo, South Korea</b>
13:03-13:10	Medical management of ectopic pregnancy: An audit in SSMC <b>Uzma Sharif, United Arab Emirates (virtual)</b>
13:10-13:17	Incomplete abortion in a Herlyn-Werner-Wunderlich Syndrome: A case report <b>Maria Teresita Angelica Cordero Singson, Philippines</b>
13:17-13:24	Minimally invasive tubal ligation: The impact of previous abdominal surgery <b>Maria Ines Sousa, Portugal</b>

<b>14:30-16:30</b>	<b>ORAL PRESENTATIONS 9: GYNECOLOGY/HPV/OTHER</b>	<b>HALL E</b>
<b>Chairperson</b>	<b>Bülent Urman, Turkey</b>	
<b>GYNECOLOGY</b>		
14:30-14:37	Serum 25 Dihydroxy Vitamin D3 level estimation and its correlation with insulin resistance in 18-40 years women with Polycystic Ovarian Syndrome <b>Pushpawati Thakur, India</b>	
<b>HPV</b>		
14:37-14:44	Buschke-Lowenstein Tumor: A clinical case <b>Ana Beatriz De Almeida, Portugal (virtual)</b>	
14:44-14:51	Persistent HPV infection after conization in patients with negative margins – risk factors <b>Patricia Ferreira, Portugal (virtual)</b>	
14:51-14:58	Does Human Papillomaviruses have an effect on sexual dysfunction? <b>Ceyda Su Gunduz, Turkiye (virtual)</b>	
14:58-15:05	The sync up of colposcopic findings with cervix precancerous changes in cervix with young female patients <b>Igor Jeremic, Serbia</b>	
<b>OTHER</b>		
15:05-15:12	Risk factors of maternal near-miss and maternal death in the major tertiary hospital in Southern Thailand <b>Wipawan Raktong, Thailand</b>	
15:12-15:19	Scoring models for maternal near-miss and maternal death prediction in Southern Thailand <b>Rapphon Sawaddisan, Thailand</b>	
15:19-15:26	Clinical, epidemiological and laboratory characteristics of cases of Covid-19-related maternal near miss and death at referral units in Northeastern Brazil: A cohort study <b>Anna Catharina Cunha, Brazil (virtual)</b>	
15:26-15:33	Simple carbohydrate count and its relationship with gestational Body Mass Index (BMI) <b>Diana De La Fuente, Mexico (virtual)</b>	
15:33-15:40	Knowledge, attitudes, and practices on enhanced recovery after surgery protocols for cesarean delivery in a tertiary government hospital <b>Beatriz Eusebio, Philippines</b>	
15:40-15:47	The lost twins: Spontaneous monochorionic, monoamniotic, twin ectopic gestation <b>Charmaine Clarisse Gutierrez, Philippines</b>	
15:47-15:54	Knowledge, attitude, and practice of obstetric healthcare workers about coronavirus disease 2019 in a tertiary coronavirus disease 2019 government referral hospital <b>Maria Margarita Franchesca Lojo, Philippines</b>	
15:54-16:01	Swyer syndrome <b>Agus Pratama Ponijan, Indonesia</b>	



16:01-16:08	Determination of breastfeeding duration, breastfeeding self-efficacy and postpartum depression levels of mothers with breast problems in the early postpartum period <b>Dilek Coskuner Potur, Turkiye</b>
16:08-16:15	Black women access at-home fertility testing services later in life compared to white women in the United Kingdom <b>Ruby Relton, UK</b>
16:15-16:22	Knowledge, attitude and practices on modern family planning methods of male partners of postpartum women admitted in a tertiary government hospital <b>Raisa Paola Butalid, Philippines</b>

<b>16:50-18:20</b>	<b>ORAL PRESENTATIONS 10: OTHER</b>	<b>HALL E</b>
<b>Chairperson</b>	<b>Heleen van Beekhuizen, Netherlands</b>	
16:50-16:57	Knowledge, attitude and practices of obstetrics-gynecology residents, pediatric residents, and newborn screening nurses on expanded newborn screening program during the Covid-19 pandemic in a tertiary government hospital <b>Patrick Jose Padilla, Philippines</b>	
16:57-17:04	The validity and reliability of the domestic violence during pandemic scale Turkish version: A methodological study <b>Asli Sis Celik, Turkiye</b>	
17:04-17:11	Dilemmas in pregnancies with pulmonary hypertension - Case report from a low-resource setting <b>Alfonsus Zeus Suryawan, Indonesia</b>	
17:11-17:18	Maternal outcomes in pregnant women admitted to the high-risk pregnancy unit of a maternity school in Northeastern Brazil: A cohort study <b>Melania Maria Ramos Amorim, Brazil (virtual)</b>	





## MODERATED E-POSTER PRESENTATIONS

### FRIDAY, NOVEMBER 25

13:40-14:04	MODERATED E-POSTERS 1: FETOMATERNAL MEDICINE	FOYER
<b>Chairperson</b>	<b>Arie Franx</b> , <i>Netherlands</i>	
13:40-13:43	The prognosis of isolated omphalocele and gastroschisis: Case reports <b>Byung Soo Kang</b> , <i>South Korea</i>	
13:43-13:46	Successful prenatal and perinatal approach of fetal omphalocele with isolated extracorporeal liver: Case report <b>Golda Puspa Arini</b> , <i>Indonesia</i>	
13:46-13:49	The dilemma of abdominal pregnancy management with live fetus: A case report <b>I Made Ngurah Surya Adi Witama</b> , <i>Indonesia</i>	
13:49-13:52	Fetal malformation with placenta accreta spectrum - two difficult tales in a pregnancy <b>Indu Lata</b> , <i>India</i>	
13:52-13:55	A case report on the multidisciplinary approach to rectal adenocarcinoma in pregnancy <b>Maria Cristina Cabanag</b> , <i>Philippines</i>	
13:55-13:58	A case of Joubert syndrome diagnosed by next generation sequencing <b>Oyoung Kim</b> , <i>South Korea</i>	
13:58-14:01	Two cases of chronic placental abruption-oligohydramnios sequence <b>Oyoung Kim</b> , <i>South Korea</i>	

### SATURDAY, NOVEMBER 26

09:35-09:56	MODERATED E-POSTERS 2: OTHER, INFERTILITY/ART/IVF, GYNECOLOGICAL ONCOLOGY	FOYER
<b>Chairperson</b>	<b>Edgardo Somigliana</b> , <i>Italy</i>	
<b>OTHER</b>		
09:35-09:38	Hypercholesterolemia and SOA: Cholesterol excess in eggs induces intracellular calcium increase leading to parthenogenic activation <b>Andreina Arias</b> , <i>Chile</i>	
09:38-09:41	Functional hypothalamic amenorrhea with or without polycystic ovarian morphology: A retrospective cohort study about insulin resistance <b>Daniel Mayrhofer</b> , <i>Austria</i>	
09:41-09:44	To compare the USG guided bilateral quadratus lumborum block with wound infiltration for postoperative pain management after lower segment cesarean section <b>Sandeep Sahu</b> , <i>India</i>	
<b>INFERTILITY/ART/IVF</b>		
09:44-09:47	Impact of radiation on serum anti-Müllerian hormone during hysterosalpingography in female infertility <b>Phawat Matemosak</b> , <i>Thailand</i>	
09:47-09:50	Heterotopic pregnancy as a complication of assisted reproduction techniques (ART) <b>Athanasia Maria Gkamprana</b> , <i>Greece</i>	



GYNECOLOGICAL ONCOLOGY	
09:50-09:53	Obstructive nephropathy due to cervical cancer high risk to chronic kidney disease: A systematic review <b>Achmad Fikry, Indonesia</b>
09:53-09:56	Misdiagnosed cervical cancer for Nabothian cyst in pregnancy, case report <b>Kyung Eun Lee, South Korea</b>

13:40-14:07	MODERATED E-POSTERS 3: GYNECOLOGY	FOYER
<b>Chairperson</b>	<b>Alessandra Graziottin, Italy</b>	
13:40-13:43	Primary tuberculosis of cervix mimicking cervical carcinoma: A case report <b>Andi Sitti Halija Nasser, Indonesia</b>	
13:43-13:46	Comparison of anthropometry, biochemical and hormonal parameters in polycystic ovary syndrome receiving metformin therapy with and without vitamin C <b>Dian Tjahyadi, Indonesia</b>	
13:46-13:49	The potential of transforming growth factor-beta inhibitor and vascular endothelial growth factor inhibitor as therapeutic agents for uterine leiomyoma <b>Jung Yoon Park, South Korea</b>	
13:49-13:52	Intraoperative ureter localization with ICG in robotic hysterectomy: Unilateral non-functioning kidney due to deep infiltrating endometriosis <b>Jungeum Lee, South Korea</b>	
13:52-13:55	Polycystic ovary syndrome phenotype D versus functional hypothalamic amenorrhea with polycystic ovarian morphology: A retrospective study about a frequent differential diagnosis <b>Klara Beitzl, Austria</b>	
13:55-13:58	Correlation between transvaginal sonography, hysteroscopic and histopathological findings in patients with abnormal uterine bleeding at Southern Philippine Medical Center <b>Lairah Untao, Philippines</b>	
13:58-14:01	Pelvic inflammatory disease caused by non sexually acquired pathogens. A case report <b>Maria Prat, Spain</b>	
14:01-14:04	Two-step hysteroscopic management in retained placental tissue after vaginal delivery. A case report <b>Maria Prat, Spain</b>	
14:04-14:07	Robot assisted total laparoscopic hysterectomy with bilateral uterine artery double ligation at the isthmic level of uterus <b>Sang-Hee Lee, South Korea</b>	



## *E-Poster Presentations*

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### **ART/IVF**

DIRECT IMPLEMENTATION OF HISTEROSALPINGO-FOAM SONOGRAPHY IN A TERTIARY REFERRAL HOSPITAL IN SPAIN WITH THE ACTUAL EVIDENCE, IS IT NECESSARY TO COMPARE THE PROCEDURE WITH RADIOGRAPHIC HISTEROSALPINGOGRAPHY?

**Magdalena Abad Gran, Spain**

LIVE BIRTH RATE COMPARISON BETWEEN SINGLE VS. DOUBLE OVARY WOMEN IN ASSISTED REPRODUCTIVE TECHNOLOGIES

**Ghadeer Aljhdali, Saudi Arabia**

THE IMPACT OF CHRONIC ENDOMETRITIS ON INFERTILITY, DOES TREATMENT INCREASE IVF SUCCESS RATES?

**Ghadeer Aljhdali, Saudi Arabia**

ADDING WEEKLY INTRAMUSCULAR PROGESTERONE TO A TWICE DAILY VAGINAL PROGESTERONE CAPSULE FOR LUTEAL PHASE SUPPORT IN IVF/ICSI CYCLES RESULTS IN SIMILAR LIVE BIRTH RATES

**Dania Al-Jaroudi, Saudi Arabia**

WILLINGNESS OF PATIENTS WITH INFERTILITY ON CONTINUING WITH THEIR IVF TREATMENT DURING THE COVID-19 PANDEMIC

**Dania Al-Jaroudi, Saudi Arabia**

BLASTOCYST FORMATION USING DONOR OOCYTES: ASSOCIATION WITH SPERM MOTILITY

**Tamar Barbakadze, Georgia**

VALIDATION OF "UNIVERSAL WARMING" COMPARING FOUR DIFFERENT VITRIFICATION KITS THAWED WITH A UNIQUE COMMERCIAL WARMING KIT.

**Cristina Dosda Munuera, Spain**

THE YOUNG GENERATION AND (IN)FERTILITY: DOES THE INFORMATION PROVIDED BY ASSISTED REPRODUCTION CLINICS CORRESPOND WITH THE EXPECTATIONS AND NEEDS OF CITIZENS?

**Anna Dostalova, Czech Republic**

REPRODUCTIVE AND PERINATAL OUTCOMES IN WOMEN  $\geq$  40 YEARS

**Monica Fernandez Castaneda, Spain**

DOES FEMALE AGE INFLUENCE INTRAUTERINE INSEMINATION OUTCOMES?

**Mariana Gamito, Portugal**

FEASIBILITY, TOLERABILITY AND SAFETY OF THE HYFOSY IN THE STUDY OF TUBAL PATENCY

**Sofia Garcia Farina, Spain**

FERTILITY PRESERVATION IN PATIENTS WITH CANCER : HOW MANY ARE COMING BACK?

**Marta Garcia-Yuste Gonzalez, Spain**

PLATELET-RICH PLASMA TREATMENT RESULTING IN PREGNANCY: FIRST EXPERIENCE FROM AZERBAIJAN IN A CASE SERIES

**Sayyara Hajiyeva, Azerbaijan**

EFFECT ON OVULATION AND NATURAL PREGNANCY WHEN TREATED WITH ORIENTAL MEDICINE IN A LOW-RESPONSE GROUP WITH OVARIAN DYSFUNCTION

**Dong In Kim, South Korea**

EFFECT ON OVULATION AND FERTILIZATION WHEN TREATED WITH ORIENTAL MEDICINE IN A LOW-RESPONSE GROUP WITH OVARIAN DYSFUNCTION DURING IN VITRO FERTILIZATION(IVF)

**Dong In Kim, South Korea**

CLINICAL ANALYSIS OF INFERTILITY COUPLES USING NAPRO TECHNOLOGY IN KOREA

**Hyun Jung Kim, South Korea**

CLINICAL EFFECTIVENESS OF ELECTIVE SINGLE VERSUS DOUBLE EMBRYO TRANSFER FOR PATIENTS WITH UNIQUE WINDOW OF IMPLANTATION

**Oleksandra Kozyra, Ukraine**

AUTOLOGOUS PLATELET-RICH PLASMA INFUSION AND GRANULOCYTE-COLONY STIMULATING FACTOR (G-CSF) TREATMENT IMPROVES PREGNANCY RATE IN WOMEN WITH THIN ENDOMETRIUM IN HETEROLOGOUS FERTILIZATION

**Giovanni Menaldo, Italy**



OVARIAN AND ENDOMETRIUM PLATELET-RICH PLASMA (PRP) THERAPY IN REPRODUCTIVE MEDICINE

**Giovanni Menaldo**, *Italy*

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# *Abstracts*

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## SPEAKERS ABSTRACTS

### DEBATE: OVARIAN STIMULATION, MILD OR WILD OR IN BETWEEN

Personalized (and safe): Ernesto Bosch, Spain

IVF is performed worldwide to a very diverse population. Patients undergoing ovarian stimulation differ on several demographic and biological features such as age, body weight or ovarian reserve among others that have a direct impact on their response to treatment. The obvious and straight forward consequence of this unquestionable fact is that the ovarian stimulation protocol that will be applied needs to be adapted to the characteristics of the patient we are treating, if we want to optimize her chances of success, minimize her risks and reduce the number of attempts, the time to achieve a pregnancy and therefore the psychological and financial burdens, and ultimately the probability of abandoning treatments before having a baby. Moreover, when facing a treatment, patients have also their own concerns, fears and preferences, which should be taken in account in the decision-making process, according to a patient centered practice that should be the rule nowadays. Neglecting the personalization of ovarian stimulation involves assuming a suboptimal outcome. Making live easier and simple to practitioners can never overcome patients' expectations and chances of success, even from an ethical perspective. A standardized mild approach has shown to jeopardize patients' options, leading to higher cancellation rates and a reduced number of retrieved oocytes, resigning to their reproductive potential. When this approach is imposed by a particular health system, the practitioners affected should debate it internally, rather than trying to convince everybody else to follow their suboptimal and inefficient approach.

### THE TYPE OF GONADOTROPHIN FOR STIMULATION: DOES IT MATTER?

Ernesto Bosch, Spain

Gonadotropins for ovarian stimulation have been evolving since the first human urine compound launched more than 80 years ago. This evolution tended to a higher purity of the compounds provided by recombinant preparations, and to the possibility of separating FSH and LH activities. As a consequence, we nowadays have the coexistence of urinary vs recombinant compounds on one hand, and FSH pure preparations vs partial or total LH activity on the other, leading to a wide portfolio of therapeutic choices for stimulation. The debate on which gonadotropin works better is old and constant, as well as too often futile. According to the latest ESHRE guidelines on ovarian stimulation, any preparation seems to perform better than the others, at least when it comes to unselected population. However, some reviews point to a slightly better live birth rates, albeit of marginal clinical relevance, when hp-HMG is given vs rFSH. The equivalence usually observed among the unselected population becomes much more debatable when different subpopulations are considered, particularly those with a lower prognosis such as poor responders or patients with advanced maternal age. In these particular cases, it seems that the supplementation with LH activity, either through the administration of hMG or recombinant LH. In patients > 35 years old, the review of available RCTs shows that rLH supplementation leads to a better outcome than treating with rFSH alone. In the case of poor responders, findings

are less clear and more debatable, since among this particular subpopulation, both age and the severity of the low ovarian reserve could have and influence the findings.

### CAN AMH PREDICT MENOPAUSE

Frank J Broekmans, PhD, MD

Professor Reproductive Medicine and Surgery, Department for Reproductive Medicine, University Medical Center Utrecht  
Consultant Professor Reproductive Medicine, Centre for Infertility Care, Dijklander Hospital Purmerend, The Netherlands

Anti-Müllerian Hormone (AMH) is produced by small antral follicles and has evolved over the past three decades as an assumed potential marker of the number of follicles in the human ovaries, also known as ovarian reserve. This quantitative measure, given the gradual decline over time and its non-replenishable feature, could be the dreamed marker for predicting the final exhaustion of ovarian storage: the post-menopause. Reasons for this could be to manage age related infertility, but also to base a treatment strategy, such as ovarian surgery, on predicting the remaining years until the onset of menopause.

The presentation will summarize current knowledge with regards to the contribution of serum AMH measurements to predict age of normal menopause in assumed normal women and critically discuss its potential in this regard. Specifically, reviews using all published literature with long term follow reveal that this marker is rather imprecise and has a limited capacity to identify women with early menopause. Debate goes on regarding the potential added value for serial AMH measurements in making the forecasts more meaningful. Lastly, it remains to be inventoried what women will do with a test result that gives unreliable information and for which realistic options are not always obvious. Today we may better focus on developing tests that indicate the overall oocyte quality of a person, and progress may come from polygenic risk scores indicating in which individuals postponing pregnancy into the fourth decade of life may create a great risk of undesired childlessness. Overall, while ovarian reserve markers including AMH are unmistakably related to age at menopause, they are insufficiently precise to inform on an individual's journey of ovarian aging.

### DEBATE: OVARIAN STIMULATION, MILD OR WILD OR IN BETWEEN...

Frank J Broekmans, PhD, MD

Professor Reproductive Medicine and Surgery, Department for Reproductive Medicine, University Medical Center Utrecht  
Consultant Professor Reproductive Medicine, Centre for Infertility Care, Dijklander Hospital Purmerend, The Netherlands

Assisted reproduction technology is applied as a treatment mode for couples with infertility. The steps in this treatment is the creation of multiple follicles with the purpose of obtaining the oocytes held within these follicles, creating embryos in the IVF laboratory and replacing the usable embryos into the uterine cavity. The role for controlled ovarian stimulation as first step relative to the laboratory and transfer phases is not well assessed. Research suggests that obtaining a few oocytes less or more is not likely to affect the prospects for the couple. From a clinical significance point of view the LOW ovarian response is related to an unfavorable prognosis for live birth, although much of this poor prognosis is in fact dictated by female age and not by the low egg number per se. At the other side of the spectrum, HIGH response, will increase treatment risks for the patient. It is therefore that



many clinicians across the world try to foresee the ovarian response category to adjust the stimulation protocol with the expectation that the ovarian response can be brought into the normal range (5-15 oocytes). Prediction of ovarian response category today is mainly applied by using the Antral Follicle Count or AntiMullerian Hormone in the early follicle phase. Both relate to the number of antral follicles present at any time. As such, these two ovarian response tests (ORTs) have become the standard for response prediction, although factors such as female age and possibly body weight may add to this predictive information. It may be noted still that basing the FSH stimulation dosage on such predictions will be rather imprecise practice from the start. Recent large, controlled trials have demonstrated that ORT based individualized dosing of the FSH preparation will not alter the fate of the predicted LOW responder but may help in reducing the safety risk of the predicted HIGH responder. Unfortunately, the promises of earlier studies that individualized dosing would also affect live birth rates in the ART program as a whole have not been fulfilled. Specifically, in predicted LOW responders based on the AMH level, using stimulation dosages of over 225 IU will alter the egg number nor the chance of a live birth. A true gain of individualized FSH dosing could be the management of the HIGH responding patient. The question however remains whether a standard 150 IU dosage using an antagonist protocol, with the escape option of GnRH agonist triggering in case of HIGH ovarian response, and with a freeze all strategy as second step, will not be the approach to circumvent imprecise dose picking based on response tests with moderate reliability.

### IS TLH REALLY SUPERIOR TO ABDOMINAL HYSTERECTOMY?

Justin Clark, UK

Gynaecologists who can hold a laparoscope seem to love TLH unconditionally. Yet the published data from 25 RCTs shows that laparoscopic hysterectomy for benign conditions is associated with a higher complication rate. Oh but what about better recovery!? Well meaningful evidence for enhanced recovery is non-existent. So, are we pushing a technique because it is 'à la mode'? Women seem to care less about the route of taking their uterus out than the doctors performing the procedure!! We need to really understand if TLH is superior and only proper research studies of adequate size measuring the relevant outcomes can definitively clear this confusion up. One is currently underway .....

### TREATMENT OPTIONS IN CASE OF HMB WITH INTRAMURAL FIBROIDS

Tessel H. Cooijmans MD., The Netherlands  
Máxima Medical Center, Veldhoven

Uterine fibroids are one of the most common benign gynecological tumors, with a prevalence of approximately 20-25% in adult women and an increasing incidence with premenopausal age. Usually, uterine fibroids are asymptomatic, however 30% of women experience symptoms, which can significantly affect quality of life. Symptoms include heavy menstrual bleeding (which is the most common), abdominal pain, dysmenorrhea, and dyspareunia. There are several treatment options for symptomatic fibroids. Numerous factors must be taken into consideration when determining the appropriate treatment, including number and size of fibroids, FIGO

classification, age, future pregnancy plans, and a women's possible preference for uterine-sparing treatment. In most cases, conservative treatment for symptom reduction is the first step in treating heavy menstrual bleeding caused by intramural fibroids. Different methods are available, such as NSAIDs, tranexamic acid, or hormonal options (contraceptive pills, LNG-IUS, ulipristal, GnRH-agonists). Often, surgical treatment options are considered if symptom reduction is not sufficiently beneficial. For FIGO type 0, 1 and 2 fibroids, hysteroscopic myomectomy is the treatment of choice. Several conventional options exist for fibroids with a primarily intramural location such as hysterectomy, uterine artery embolization, and laparoscopic or laparotomic myomectomy, of which hysterectomy is the most commonly performed. However, many women prefer uterine preservation. A number of uterine-sparing minimally invasive treatments have been developed, including Magnetic Resonance-Guided High-Intensity Focused Ultrasound (MR-HIFU) and ultrasound-guided radiofrequency ablation, which can either be performed laparoscopically with the Acessa® system or transcervically with the Sonata® System. Transcervical ultrasound-guided radiofrequency ablation with the Sonata system offers a minimally invasive, uterine-sparing, outpatient treatment option for fibroids with a mainly intramural location. The device combines intrauterine ultrasonography with radiofrequency ablation. Several studies show significant reduction of fibroid-related symptoms, and improved quality of life after treatment together with excellent safety. Due to its relative novelty data, long-term follow-up results are still limited. An overview of the existing literature on surgical reintervention and patient satisfaction will be presented. In addition, implications for counseling patients will be addressed.

### EFFICACY AND SAFETY OF AVAILABLE MATERNAL VACCINATIONS: UPDATE ON AVAILABLE LITERATURE (SYST REVIEW)

Odette de Bruin, Netherlands  
Emily Phijffer, Netherlands

Over the past 10 years an increase have been made in developing and introducing vaccines. As some vaccinations show benefits for both mothers and infants, there is an increased interest in vaccines administered to pregnant women. Neonates are vulnerable due to their immature immune system causing inability to initiate an adequate humoral immune response. Consequently, maternally derived antibodies, which cross the placenta or are transferred through breastfeeding, highly contribute to the protecting against infections. However, pregnant women are frequently excluded from clinical trials, and evidence on the efficacy and safety of maternal vaccination is scarce. Some recent studies support the efficacy and safety of maternal vaccinations, including influenza and T-dap (tetanus, diphtheria and acellular pertussis), and are recommended by the The Centre for Disease Control and Prevention for all pregnant women. The development of other maternal vaccines is ongoing, including respiratory syncytial virus (RSV), group B-streptococcus (GBS), cytomegalovirus (CMV), and rotavirus (RV). Furthermore, the COVID-19 pandemic and introduction of vaccines against the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) raised questions about efficacy and safety of vaccination during pregnancy. Nevertheless, to our knowledge there is no systematic review and meta-analysis addressing the



efficacy and safety of all available maternal vaccinations in mothers and infants yet. Therefore, we aimed to assess the effectiveness and safety of vaccinations administered to pregnant woman for preventing infectious diseases in mothers, neonates and infants. The goal is to provide a clear and complete overview of all maternal vaccinations to help implement research based recommendations in national clinical and practice guidelines.

### WHAT IS THE BEST REFERRAL POLICY FOR PATIENTS WITH AN ADNEXAL MASS?

Peggy Geomini, *Netherlands*

In the Netherlands, every year 6500 women undergo surgery because of an ovarian tumor of which a minority is malignant. Correctly characterizing ovarian tumors preoperatively is critical. It ensures appropriate referral of women with ovarian cancer to an oncology center, and optimizes patient cancer care and survival. By correctly recognizing benign tumors, minimal invasive treatment can be given to women with a benign disease in general hospitals, leading to reduced morbidity, fertility preservation and quick return to normal activities. Correct classification and referral also supports productivity improvement such as reduction of unnecessary procedures, and time/personnel usage. As theatre time is limited, oncology centers have logistic challenges to treat women within acceptable time frames. Waiting lists are distorted as women with in retrospect benign tumors are referred unnecessarily and are on the same waiting lists as women with ovarian cancer. To guide referral decisions, a variety of risk scoring models are available, mostly based on ultrasound features of the ovarian tumor, often in combination with CA125. In Dutch gynaecological practice the easy-to-use Risk of Malignancy Index (RMI) is widely implemented. However, lack of sensitivity is worrisome. The IOTA (International Tumor Analysis)-group introduced alternative risk scoring models: simple ultrasound-based rules (SR), Assessment of Different NEoplasias in the adneXa (ADNEX) and logistic regression model 2 (LR2) which have no additional operating costs when compared to RMI, but are more sensitive, while affecting specificity only on a certain degree. Subjective Assessment by an expert ultrasonographer (SA) remains the best method, showing high sensitivity and specificity. However, experts are scarce and expensive. Available cost-effectiveness analyses on referral strategies do not deal with the impact of pre-operative misdiagnosis on women's quality of life and disutility due to false positive and negative test results as these data are not available yet. We recently started the ACCEPT study to close this knowledge gap. After finishing the ACCEPT study, we will be able to conclude which referral strategy is most costeffective for the Dutch health care system. However, until then, the Dutch guideline on (benign) ovarian tumors recommends using the ADNEX model, on condition that knowledge of the IOTA definitions is sufficient. To limit false positive referrals, a cut-off value of 40% for referral to an oncology centre is advised.

### HEALTH IN OFFSPRING OF MOTHERS WITH PCOS

Roger Hart, *Australia*

It is well established that the life-time health risks for women with polycystic ovary syndrome (PCOS) are increased. Further, her obstetric risks of pre-eclampsia, premature delivery and gestational diabetes are

increased. Consequently, her child has an inherent increased neonatal health risk due to these obstetric risks. However, it is now increasingly recognised that the risk to the child extend beyond the neonatal period into childhood and are evident when allowance is made for these pregnancy related complications. This presentation will attempt to provide a summary of the literature findings pertaining to the health of the children born to a woman with PCOS.

### STEM CELLS FROM CORD BLOOD AND OTHER SOURCES FOR THERAPY - WHAT THE OBSTETRICIANS/ GYNAECOLOGISTS SHOULD KNOW

Prof. Dr. med. h. c. mult. **Wolfgang Holzgreve**, MBA, FACOG, FRCOG,  
*Medical Director and CEO, University Hospital Bonn, Germany*

Umbilical cord blood is rich in hematopoietic stem cells. At birth, it can be collected, HLA-typed and stored. Cord blood is successfully used since over 10 years as source of transplantation of hematopoietic stem cells, in addition to bone marrow and mobilized peripheral blood stem cells. Allogeneic transplantations are performed between HLA-identical siblings and from HLA-matched unrelated donors. Most recipients of cord blood are children with leukemia or genetic disorders, but also increasingly adolescents and adults. Based on the promising results, cord blood banks with cryopreserved, HLA-typed cord blood samples from anonymous donors are set up worldwide, ready to be used as allogeneic stem cell graft. Additionally, so-called "private" cord blood banks were set up, providing the possibility to store cord blood at birth from healthy children with no affected family member for a possible autologous stem cell transplantation in the future if the child later develops a disease such as leukemia. To date, there is no established indication for an autologous cord blood transplantation. Nevertheless, the plasticity and multipotency of adult stem cells, which has been confirmed, could lead to a possible autologous use of cord blood stem cells for different indications in regenerative medicines (cell- and organ replacement / regeneration). There are different technologies currently being investigated. Prenatal in-utero stem cell transplantation is promising therapeutic option for genetic disorders, which is now at the edge of moving from preclinical research into clinical application. The first clinical experience shows that some form of severe immunodeficiency can be treated successfully in-utero. No therapeutic success has been achieved in genetic disorders which do not severely affect the immune system, due to immunologic rejection and hematopoietic competition between donor and host cells. Therefore, new strategies are being developed, including graft modification, prenatal conditioning of the fetus, postnatal re-transplantation after prenatal induction of immune tolerance, and fetal gene therapy using autologous fetal stem cells. The use of non-hematopoietic (e.g. mesenchymal) or pluripotent stem cells will probably lead to an expansion of the spectrum of indications. Simultaneously, ethical implications, in particular regarding fetal gene therapy and the use of pluripotent stem cells must be addressed.

### ENDOMETRIOSIS: IS IT A SYSTEMIC DISEASE?

Ludwig Kiesel

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Endometriosis is a chronic disease that affects up to 10% of women during the reproductive years. (Taylor et al., 2021) It has been well established that endometriosis causes chronic systemic inflammation, oxidative stress and immune dysregulation (Marchandot et al., 2022; Farland/Harris, 2020). In addition, endometriotic lesions can migrate to various locations, such as lungs or brain (Taylor et al., (2021.)) Due to these mechanisms endometriosis might influence the pathogenesis of other diseases. It is essential to know comorbidities of endometriosis because the patients are usually diagnosed as young adults and there might be modalities to prevent the occurrence of some diseases that become relevant at a later age (Kilic et al., 2021). An association between endometriosis and migraine could be shown in several cohort and case-control studies. According to a meta-analysis from Jenabi et al., the risk for migraine headache in women with endometriosis is increased by 49% in comparison to women without endometriosis (Jenabi/Khazaei, 2020). The pathogenesis of migraine as a comorbidity, however, is not fully understood. Hypotheses for this include a general neuronal hyperactivity resulting from an activation of sensory fibers in the ectopic endometrial tissue, the increase of production of prostaglandins which are an established factor in the pathogenesis of migraine and the association of both diseases with nitric oxide synthesis (Jenabi/Khazaei, 2020). It is also known that estrogen influences migraine headaches and oral contraceptives can trigger migraine. A case-control study by Wu et al. found that the risk for migraine was significantly increased in women with severe endometriosis while no significant increase was found for moderate and mild endometriosis (Wu et al., 2021). Numerous studies found a strong association between cardiovascular disease and cardiovascular risk factors with endometriosis. Women with pelvic inflammatory disease are more likely to have myocardial infarction and stroke than the general population (Marchandot et al., 2022). Women with endometriosis have higher levels of low density lipoprotein, a 25% higher risk of hypercholesterolemia and a 14% increased risk of developing hypertension (Farland/Harris, 2020). Endometriosis might also influence some other diseases, such as autoimmune diseases. Studies to detect an association with autoimmune diseases could not find any statistically significant associations yet (Farland/Harris, 2020). In conclusion, there is increasing evidence that endometriosis has a systemic influence and is a risk factor for several comorbidities which need to be further evaluated in order to prevent the long-term consequences of these systemic diseases.

## REPRODUCTIVE FITNESS IN WOMEN WITH PCOS

Joop S.E. Laven

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Polycystic ovary syndrome (PCOS) is a highly prevalent multifactorial polygenic disorder, representing the single most common endocrine-metabolic disorder in reproductive-aged women. Currently there are four recognized phenotypes of PCOS and three of them are associated with oligo- or anovulation. Reproductive abnormalities constitute a perturbed gonadotropin secretion, follicular arrest, hyperandrogenism, hyperinsulinemia and subfertility. Although, most clinicians counsel these patients about their inability to have children most studies indicate that fertility rates in

PCOS patients are similar to women without PCOS. However, they seem to have higher AMH levels and a larger ovarian reserve compared to those without PCOS. Indeed they seem to have a longer reproductive lifespan and regain regular menstrual as well as ovulatory cycles beyond the 4 decade of life. Similarly, looking at ART data it seems that women with PCOS always produce more follicles, oocytes at ovum pick-up and embryo's compared to women without PCOS. Although in former days this was attributed to their higher AMH levels and the resulting larger ovarian reserve it seems to be driven by genetic factors. Indeed a recent paper on the genetic background of reproductive ageing indicated that women with PCOS have better DNA repair and maintenance genes, also referred to as menopause postponing genes. It is also known that women with PCOS enter menopause later in life compared to the non PCOS individuals. If this is due to better DNA repair and maintenance this should impact on embryo quality during the late reproductive years during which the impact of previously attained DNA damage is the highest. Indeed, it was shown recently that aneuploidy rates were significantly lower in 40 to 45 year old women with PCOS compared to without the syndrome. Consequently, implantation rates were similarly higher in the PCOS women. Apparently, nature grants them an extended reproductive life span and hence their reproductive fitness is better!

**Key Words:** PCOS, Reproductive Fitness, Aneuploidy, DNA repair, Menopause, Ageing

## SHARED MECHANISMS AND GENETICS BETWEEN THE AGE OF PHYSIOLOGICAL MENOPAUSE, EARLY MENOPAUSE AND POI

Yvonne Louwers, *Netherlands*

Reproductive ageing leading to menopause is characterized by depletion of follicles. Early age at menopause and premature ovarian insufficiency (POI) are associated with several other traits such as cardiovascular disease, dyslipidemia, osteoporosis and diabetes. Regulating mechanisms of age at menopause are only partly understood. However, it is known that the genetic component in age at menopause is relatively strong. Twin studies have estimated that the heritability of age at menopause varies between 44-85%. This is further supported by the fact that up to 30% of women with idiopathic POI have a family history of early menopause or POI suggesting a genetic etiology. In large cohorts of Northern European women hundreds of genetic variants (Single Nucleotide Polymorphisms, SNPs) have been identified to be associated with age at menopause. These SNPs are located in genes enriched for immune and mitochondrial function as well as DNA repair and maintenance processes. Interestingly, these identified genetic variants of age at menopause are enriched in genes linked to monogenic POI. Also, the combined effect of age at menopause lowering SNPs was estimated to explain 30% of the variance in early menopause. In other words, age at physiological menopause, early menopause and POI may have an overlapping polygenic etiology, with women with POI carrying more ANM lowering variants and representing the extreme of the trait. The enrichment of DNA repair and maintenance processes genes in age at physiological menopause, early menopause and POI furthermore suggests that reproductive aging may be part of aging in general.



## GENDER DIFFERENCES IN CARDIOVASCULAR HEALTH

Prof dr **Angela H.E.M. Maas**

Cardiologist - Radboud University Medical Center, Nijmegen, The Netherlands

Cardiovascular disease in women is the number one cause of death worldwide. Women and men have different patterns of ischemic heart disease (IHD) throughout their lifetime. In clinical cardiology, the male obstructive pattern of coronary artery disease (CAD) dominates in risk assessment, symptom evaluation, diagnostic testing and therapy. Women have more non-obstructive CAD (INOCA) and functional IHD in the coronary (micro-)circulation, which is often underdiagnosed and undertreated. Different patterns of IHD translate into different symptoms of angina between genders. In the past 25 years, we have made notable progress in our understanding of women's heart disease and women's hearts. Groundbreaking studies have informed us so much more about the novel risk factors that can impact women's likelihood for cardiovascular disease (CVD). In this presentation we will give an overview of what has been achieved and we emphasize the importance of the life-course in risk estimation.

## TREATMENT OF ENDOMETRIOSIS – SURGICAL OR MEDICAL?

**Jacques Maas**, Netherlands

Women with endometriosis suffer from pain and may have problems with getting pregnant. This abstract will focus on the treatment of pain. For more information and recommendations, I refer to the ESHRE guideline 2022<sup>1</sup>. Besides painkillers it is recommended to offer women hormone treatment to reduce the pain, taking into consideration individual preferences, side effects, individual efficacy, costs, and availability. One can prescribe a combined hormonal contraceptive as oral tablets, a vaginal ring or transdermally. Especially in case of dysmenorrhoea continuous use can be advised. As progestogens a levonorgestrel-releasing intrauterine system or an etonogestrel-releasing subdermal implant is strongly recommended. But of course, they have a different side effect profile. For decades GnRH agonists are prescribed to reduce the women's complaints, although evidence is limited regarding dosage or duration of treatment. One should consider combination with hormonal add-back therapy to prevent bone loss and hypo-oestrogenic symptoms. Because the recent availability of oral compounds instead of daily injections GnRH antagonists become a serious option. GnRHs are prescribed as second line when hormonal contraceptives or progestogens are ineffective. Aromatase inhibitors may be prescribed in combination with other hormonal treatment. There is for certain place for surgery as one of the options to reduce endometriosis-associated pain. When surgery is performed excision is preferred over ablation and in case of ovarian endometrioma cystectomy over drainage and coagulation, as cystectomy reduces recurrence of endometrioma and endometriosis-associated pain. Of course, one should be cautious to minimise ovarian damage. When we look at different techniques cystectomy and CO2 laser vaporisation appear to have similar recurrence rates beyond the first year after surgery. Early post-surgical recurrence rates may be lower after cystectomy. Women may be offered postoperative hormone treatment to improve the immediate outcome of surgery. Unfortunately, we still do

not know whether medical or surgical treatment is most effective. Although an important clinical question, it has not been fully addressed in research. So, in summary according to the treatment of pain in case of endometriosis there are different treatment options: pain killers, hormone treatment and surgery and together with the patient one decides with all the pro's and con's what the best options is. One must bear in mind that endometriosis is a chronic and incurable disease in a significant number of women and symptoms often recur after discontinuation of therapy. 1. ESHRE guideline: endometriosis. *Hum Reprod Open*. 2022 Feb 26;2022(2):hoac009. doi: 10.1093/hropen/hoac009.

## THE ROLE OF US AND MRI IN DIAGNOSING DEEP ENDOMETRIOSIS

**Annemiek Nap**, Netherlands

The diagnostic delay in endometriosis is between five to ten years worldwide. Causes for this delay are the aspecific symptom pattern and normalization of symptoms by patients as well as by health care professionals. Moreover, the lack of an easily accessible, cheap diagnostic test with a high sensitivity and specificity adds to the diagnostic delay. Until recently, diagnostic laparoscopy combined with histology was considered the gold standard for diagnosing endometriosis. However, laparoscopy is invasive, expensive and has a risk for morbidity and mortality. With the improved quality of imaging techniques including transvaginal ultrasound (TVS) and magnetic resonance imaging (MRI), endometriosis lesions may be recognized by ultrasound or MRI. For deep endometriosis, which may be present in bowel, bladder, the pelvic wall but also in retroperitoneal locations including ureters and nerves, imaging results are promising. Using VUS, an overall specificity of 94% and sensitivity of 79% was reported (Guerriero et al., 2014). In a Cochrane review, the role of MRI was assessed. An overall mean specificity of 77% and a mean sensitivity of 94% were found (Nisenblatt et al., 2016). In another review, studies in which patients were undergoing ultrasound as well as MRI for diagnosing deep endometriosis were assessed. The authors found that for the detection of DE in the rectosigmoid, for MRI pooled sensitivity was 0.85, specificity was 0.95, for TVS pooled sensitivity was 0.85, specificity was 0.96. For detection of DE in the rectovaginal septum, for MRI pooled sensitivity was 0.66, specificity was 0.97, for TVS pooled sensitivity was 0.59, specificity was 0.97. For detection of DE in the uterosacral ligaments, for MRI pooled sensitivity was 0.70, specificity was 0.93, for TVS pooled sensitivity was 0.67, specificity was 0.86. The authors concluded that diagnostic performance of TVS and MRI is similar for detecting DE involving rectosigmoid, uterosacral ligaments and rectovaginal septum (Guerriero et al., 2018). TVS and MRI can replace diagnostic laparoscopy to diagnose deep endometriosis. However, the availability of TVS and especially of MRI may be limited in some countries. Moreover, the results of studies are mainly based on imaging performed by experts. The interpretation of results may be influenced by the experience of the clinician. Therefore, the ESHRE guideline on endometriosis advises that the transferability of data from published studies performed by experts to the general medical community has to be considered and potentially adapted to the local situation.

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### DEBATE: LONG TERM RISK OF CANCER IN ENDOMETRIOMA: IMMEDIATE SURGERY, DELAYED SURGERY OR NEVER SURGERY?

Delayed surgery: **Jacques Donnez**, Belgium

Immediate surgery: **Hans Nijman**, Netherlands

Koen Brummel, Thijs Roelofsen, Jos Bart, Marco de Bruyn, **Hans W. Nijman**.

Surgery is the cornerstone of primary treatment for patients with ovarian cancer. Overall survival is still poor despite aggressive cytoreductive surgery and systemic platinum based chemotherapy with a median progression free survival of only 18 months. Two less common histological subtypes of ovarian cancer, endometrioid and clear cell ovarian cancer, are associated with endometriosis / endometrioma. Endometrioma, defined as endometriosis presenting as cysts most likely in the ovaries (Blaustein's Pathology of the Female Genital Tract). Endometrioma might, in the end, be considered as a precursor lesion for ovarian cancer. The association between endometriosis and ovarian cancer has an Odd's ratio of 1.4. Overall life time risk increases with a moderate percentage of 0.5% (1.3 general population versus 1.8 endometriosis population). The consequences of this association for the surgical approach of endometrioma (immediate or delayed surgery) is topic of debate for over many years. An important topic is ; how not to overtreat on the one hand and how not to overexpose the patient to the killing disease of ovarian cancer, on the other hand. The potential influence of endometrioma, an chronic inflammatory disease, on cancer immune surveillance requires further research as well. These, and other topics will be touched upon, in this presentation.

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### GENETIC SCREENING IN MALE INFERTILITY: TIME FOR NEW GUIDELINES?

**Manon Oud**

Department of Human Genetics, Radboud university medical center, Nijmegen, the Netherlands

Approximately 1 in 7 couples wishing to conceive fail to do so after one year of trying. About half of the cases can be assigned to male factors. Currently, genetic causes explain approximately 4-9% of all cases of male infertility, with strong variation among the different subtypes of infertility. Presently a majority of all infertile males (60-70%) remain without a clear diagnosis, despite the expectation that genetic causes explain a substantial fraction of these patients. Without a genetic diagnosis, it is impossible for a clinician to accurately provide counseling to couples with questions about the causes of their

infertility, possible co-morbidities, the potential success of ART treatment and the (reproductive) health of their offspring. Hence, knowing and understanding the genetic causes of infertility is of enormous value to patients and clinicians. Already for more than 25 years, genetic testing is recommended for patients with severe oligozoospermia or azoospermia. These tests typically include karyotyping, azoospermia factor (AZF) deletion screening and/or CFTR mutation testing (in case of CBAVD). For a long time, further genetic testing was time-consuming and expensive, resulting in slow progress to unveil novel causes of male infertility in both research and clinic. The uptake of next-generation sequencing (NGS) methods has revolutionized genetic testing for a plethora of disorders, allowing for cost-effective screening of genetic variants. NGS is now routinely used by many laboratories for genetic testing in diagnostics and research. Using these new technologies, we and others have identified numerous novel causal variants in genes indispensable for human fertility. Although the use of NGS in male infertility research is skyrocketing in recent years, it has not yet broadly found its way into diagnostics. This means that 1) numerous patients with over a hundred newly discovered monogenic causes of male infertility are presently left undiagnosed and 2) large groups of patients with phenotypes such as globozoospermia or multiple morphological abnormalities of the sperm flagellum do not routinely receive genetic testing, even though diagnostic yields of up to 60% can be expected. The field of genetics of male infertility is rapidly evolving and it is time for patients to benefit from these advances. This talk will cover the steps we and others are taking towards bringing NGS methods such as exome sequencing to the clinic for male infertility and will show the first results on the validation of our exome sequencing-based test for male infertility.

### SYNTHETIC HUMAN ENTITIES WITH EMBRYO-LIKE FEATURES

**Mina Popovic**

Eugin Group, Barcelona, Spain

Human embryo research has undoubtedly enabled tremendous progress in medically assisted reproduction and continues to make an invaluable contribution to the field of developmental biology. Nevertheless, the relatively short timeframe available for study and the inaccessibility of research material have inherently hindered comprehensive functional and molecular studies. A holistic understanding of human embryogenesis will ultimately rely on multi-scale analysis, taking into consideration various patterns of interaction, across successive degrees of hierarchy. Given this ambitious quest, the field of synthetic embryology is currently gaining momentum. Aiming to deliver scalable *in vitro* platforms for interrogating developmental pathways, this approach capitalizes on organoid technology, differentiating pluripotent stem cells into structures resembling human embryos.

Over the past years, a flurry of studies have demonstrated the remarkable ability of (mouse and human) pluripotent stem cells to self-assemble into organized embryo-like structures *in vitro*. This enhanced stem cell toolkit has enabled several aspects of mammalian peri-implantation development to be captured *in vitro*. Accordingly, "blastoids" have recapitulated the blastocyst, "gastruloids" model features of axis development and gastrulation, while various other "embryoids" mimic aspects of epiblast, trophoblast and (pro)amniotic cavity formation. Given the dimensionality of human embryo development, stem cell-



based embryo-like structures certainly hold promise as a valuable research tool. However, the utility of these models will ultimately depend on the extent to which they can faithfully recapitulate human embryo development *in vivo*. While rigorous benchmarking of embryo models will certainly be an important consideration for this new emerging field, in the human context, this may ultimately prove challenging. Perhaps no single embryo model will ever perfectly capture all aspects of embryogenesis. However, we do foresee that synthetic embryology will continue to shed light on the complexities of early human development. Above all, the multidisciplinary and integrated nature of this emerging approach will certainly offer novel opportunities for exploring the early days of development in real-time and in unprecedented detail.

### BLASTULATION RATE: THE GOLDEN KPI FOR SELF-EVALUATION IN LABORATORY

Laura Rienzi, *Italy*

Since human embryo culture up to the blastocyst stage was introduced (Edwards and Steptoe, 1983), several efforts have been made to improve the clinical outcomes of assisted reproductive technology (ART), including techniques to determine a more accurate embryo implantation potential, in addition with clinical and laboratory procedures. However, the development of a reliable method to select the best human embryo, from a cohort of *in vitro*-derived embryos, and achieve a viable pregnancy, remains one of the main challenges facing the clinical embryologist. Since the IVF laboratory is the heart of an ART clinic, where gamete and embryo manipulations are performed, all processes should be standardized and constantly monitored. Several quality indicators have been investigated to outline the contribution of the different health professionals involved in ART. Clinical Key performance indicators (KPI) include identified protocols and standard operation procedures applied in the daily practice. They provide a definition and a constant monitoring of the biological and technical process, and identify relevant qualifiers, confounders and endpoints, establishing minimum standards for proficiency. Gamete and embryo handling is particularly sensitive; in this regard clinical and laboratory procedures must be complied with to preserve embryo developmental competence during the required manipulations (Wale and Gardner 2016). For this reason, stable culture conditions in order to maintain adequate pH, osmolality, and temperature are required for guarantee the correct embryo homeostasis during handling. However, different culture strategies exist, with a wide range of variables (e.g., media, incubator, temperature, oxygen concentrations, use of single or sequential media, practice of group or individual culture). Based on this assumption, each laboratory should develop its own set of KPIs, considering their laboratory organization and processes, and develop a systematic and reliable approach for data collection and analysis (ESHRE Guideline Group on Good Practice in IVF Labs et al. 2016; Mayer et al., 2003; Mortimer and Mortimer, 2015; Salinas et al., 2010). The blastulation rate is one of the KPIs assessing the effect of the IVF laboratory. It is defined as the proportion of 2PN which are at the blastocyst stage (Alpha Scientists In Reproductive Medicine and ESHRE Special Interest Group of Embryology, 2011). In the laboratory setting it reflects the efficiency of the whole culture system. It is known from the literature that the overall mean blastulation rate per cohort of inseminated oocytes was significantly associated with the maternal age and sperm concentration, while no

association has been reported for timings and operators (Maggiulli et al., 2020). The systematic KPIs monitoring in an IVF laboratory allows early detection of problems and the prompt adoption of corrective actions to prevent a clinical impact. Of note, the achievement of a healthy live birth in an ART clinic is the result of multidisciplinary effort. There is still a lack of knowledge to be filled with more information about probable different factors that can affect the IVF efficiency.

### PERICONCEPTION LIFESTYLE CARE AND PERSONALIZED MEDICINE

Prof. dr Régine P.M. Steegers-Theunissen

*Periconception Epidemiology, Department of Obstetrics and Gynaecology, Erasmus MC, University Medical Centre, Rotterdam, the Netherlands*

Lifestyle behaviors play a key role in health and diseases, but also in reproduction. In general, the most evidence is available on the benefits of strong adherence to a Mediterranean dietary pattern, smoking and alcohol cessation. The periconception period is one of the most critical 'time windows' during the life course, comprising of 3 months before up and until 3 months after conception, because of the vulnerability of exposures of the preconception maturing oocytes and semen, and the postconception development of the embryo and placenta. Healthy lifestyle behaviors are associated with increased fertility and pregnancy chances in couples undergoing artificial reproductive treatment and contribute to a reduction of pregnancy complications in mothers and offspring, such as hypertensive disorders, gestational diabetes mellitus, congenital malformations and fetal growth restriction. Therefore, the development and implementation of evidence-based lifestyle interventions have the potential to prevent lifestyle-related diseases from the earliest moment of the life course. Changing lifestyle behaviors is very difficult and maintaining lifestyle improvements in the long term is even more challenging. However, couples contemplating pregnancy are more motivated to adopt healthy lifestyles when they have the knowledge on the impact on reproduction, and the skills and personalized tools to support them. On the other hand lifestyle care should also be a responsibility of health care professionals, because more than 40% of the diseases and reproductive disorders are due to one or more poor lifestyle behaviors. Although, health care professionals have the authority to initiate changes in lifestyle behavior, they often don't have the knowledge, time and skills to provide lifestyle care. Therefore, lifestyle care should be organized and evidence based tools for medical care should be provided. In this presentation, I will give an overview of a 20 years trajectory of development and implementation of lifestyle care as 'one stop shop' lifestyle care consultations, online lifestyle coaching programs ([www.smarterpregnancy.co.uk](http://www.smarterpregnancy.co.uk), Dutch version [www.slimmerzwanger.nl](http://www.slimmerzwanger.nl)) and 'blended' lifestyle care. Moreover, I will advocate that (digital) lifestyle care used as roadmap offers the opportunities to support multidisciplinary care and integrate medical, mental and social care. This will pave the way for the digital transformation of healthcare into a personalised, proactive, sustainable and more affordable care and a better quality of life even before people become patients.





## UNRAVELLING THE CAUSES OF MALE INFERTILITY: THE ROLE OF GENETICS

Frank Tüttelmann

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Infertility is a common multifactorial disease and global health problem affecting 10-15% of couples. It can often be overcome by medically assisted reproduction (MAR), offering couples that fail to conceive naturally the chance for parenthood. In half of the couples, the infertility is due to male-factors. Despite advances in the past decade, in the majority of infertile men, the underlying genetic, molecular, cellular, and/or organ defect(s) still remain ill-defined or unknown altogether. Thereby, evidence-based treatment decisions for testicular sperm extraction (TESE) and MAR, estimating and counselling as to risks for both the men and their offspring, and potential preventive measures are largely precluded. However, in recent years, the number of male infertility cases “solved” by genetic analyses, most importantly exome sequencing, increases continuously. We and others have contributed significantly to 1) identifying novel genes and causal variants (mutations), 2) functionally scrutinising them, and 3) translating findings into the clinic. Most attention is currently focussed on azoospermia, supposedly affecting up to 1% of the male population, and specific sperm defects clinically detected as morphological aberrations or decreased/completely lacking motility. Crypto- and azoospermia (very few/no sperm in the semen) are main contributors to male factor infertility. Genetic causes for spermatogenic failure (SPGF) include Klinefelter syndrome (47,XXY) and Y-chromosomal AZF microdeletions, and *CFTR* mutations for obstructive azoospermia (OA). However, the majority of cases remain unexplained because monogenic causes are not analysed. The clinical distinction between azoospermia due to SPGF (non-obstructive azoospermia, NOA) and obstructive azoospermia (OA) is challenging but critical for counselling patients prior to surgical sperm retrieval procedures: men with OA have high success rates for TESE and subsequent intracytoplasmic sperm injection (ICSI), while rates for NOA patients range from virtually zero up to ~50% depending on the genotype. One focus of the talk will be the recent results of our four years prospective exome sequencing study in crypto-/azoospermic men and the impact for predicting TESE and MAR success based on identified mutations. Another focus will be the genetic makeup of morphologically abnormal sperm and the consequences for MAR/ICSI. Lastly, a previously underestimated cause for infertility and IVF failure will be reviewed.

### **DEBATE: SHOULD ANDROGENS BE ROUTINELY ADDED TO MENOPAUSE TREATMENT**

No: *Dorenda van Dijken, Netherlands*

Testosterone concentrations decline during the reproductive years. It is not clear whether this has any clinical consequences because it has never been properly sorted out. Testosterone and androgens make you sensitive to sexual stimuli. But in women without complaints, testosterone levels are never measured, so this knowledge is lacking. My guiding principle is the Global Consensus Position Statement on the Use of Testosterone Therapy for Women of the International Menopause Society (IMS) So there is only one clearly established evidence based indication for testosterone

therapy in women: that is for the treatment of Hypoactive sexual desire disorder/dysfunction (HSDD) in postmenopausal women after thorough clinical assessment and formal biopsychosocial assessment has been performed. Available data support a moderate therapeutic effect, in postmenopausal women. Systemic DHEA is not associated with significant improvement in libido or sexual function in postmenopausal women with normal adrenal function and cannot be recommended for women with HSDD There are insufficient data to make any recommendations regarding the use of testosterone in premenopausal women for treatment of sexual function or any other outcome. There are insufficient data to support the use of testosterone for the treatment of any other symptom or clinical condition, or for disease prevention. There is insufficient evidence to support the use of testosterone to enhance cognitive performance, or to delay cognitive decline in postmenopausal women. Available data show no effect of testosterone therapy on general wellbeing. Testosterone may improve wellbeing in premenopausal women but data are inconclusive. Available data do not show an effect of testosterone on depressed mood No significant effect of testosterone administered in physiologic doses has been demonstrated on lean body mass, total body fat or muscle strength So androgens should not be routinely added to menopause treatment, only to postmenopausal women with HSDD

### **DEBATE: LASER TREATMENT IS THE FIRST-LINE CHOICE FOR GENITOURINARY SYNDROME OF MENOPAUSE (GSM)?**

No: *Dorenda van Dijken, Netherlands*

For vaginal complaints after menopause, local good treatments have existed for some time. Hormone therapy (HRT) also helps. Nowadays there is also a lot of advertising for CO2 laser therapy. By creating subcutaneous connective tissue, the vagina would become firmer and often less dry. A well-designed study has recently been published, after a large number of small studies with dubious results or with a (to) short follow-up. The ninety women in the Australian study with postmenopausal urogenital complaints were treated with fractional CO2 laser in the vagina. Half were treated with a working laser, the other half received a fake treatment for control: the laser rod was inserted without laser action. This research showed that the treatment with a working laser after twelve months did not yield any positive advantage over the fake treatment. In 2018, after reports of increased pain symptoms during sexual contact and even burns, the FDA already reported that laser treatments should be applied with great caution and the recommendation is that laser treatments should only be used in a well-designed study. Most studies involve small research groups and there is now a lack of sufficient scientific evidence in terms of effectiveness and safety. From all scientific associations there is therefore now a reluctant advice with regard to vaginal laser therapy on indication vaginal atrophy. More reliable studies are needed before we can recommend this to patients.



## **MENOPAUSE AND ITS IMPLICATIONS**

**Dorenda van Dijken, *Netherlands***

The menopausal transition and menopause can have big implications for women in their general health. Peri menopause can cause many complaints due to the change in hormone balance. In addition to the well-known vasomotor complaints, psychological complaints can also occur. These can partially be explained by fatigue, but women who have had depression in the past are two to four times more likely to relapse. Women who are sensitive to hormone changes such as women with PMS, PMDD, ADHD or bipolarity, experience more complaints in perimenopause. A lot of attention is paid to the vasomotor complaints, but there really should be more attention for this group of women. The muscle and joint complaints and how disabling they can sometimes be, are also underexposed. Menopause is a tipping point. Due to the loss of estrogen, women are more likely to have cardiovascular disease and osteoporosis. Young menopausal women are also more at risk for dementia. It would be good if women are already aware of their risk factors around the age of forty. Especially if there are or have been increasing factors in the past. In the context of the life course approach, this is also an important task for healthcare professionals. Women can do a lot themselves preventively from the age of forty, especially in the field of nutrition and lifestyle. Menopause care should therefore start earlier and focus more on prevention than just on treatment of complaints. Healthy ageing as a woman should be of paramount importance in good time!

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## ORAL PRESENTATION ABSTRACTS

### ORAL PRESENTATIONS

(Hall A, Friday 13:00-13:30)

#### OOCYTE ACTIVATION BY PIEZOELECTRIC ACTIVATION VERSUS CALCIUM IONOPHORE TREATMENT

**Biroł Aydın**<sup>1</sup>, Daria Hudkova<sup>1</sup>, Ulyana Dorofeyeva<sup>1</sup>, Galina Strelko<sup>1</sup>, Veronika Ulanova<sup>1</sup>, Olga Chaplya<sup>1</sup>, Oksana Lyzuhob<sup>1</sup>, Olga Maliuta<sup>1</sup>, Tetiana Pischana<sup>1</sup>, Maksym Korobko<sup>1</sup>, Elena Kotlierova<sup>1</sup>

Egg Bank, Ovogene Bank, Kiev, Ukraine

**Problem statement:** It has been statistically determined that 50% of couples with infertility problems have female infertility. The most common reasons for this are advanced maternal age and poor egg quality. Intracellular transport of calcium and mitochondrial activity plays a key role in egg fertilization and embryo development. **Methods:** In our study, oocytes obtained by short antagonist stimulation method from 59 patients over 35 years of age with a diminished ovarian reserve and at least 2 unsuccessful IVF/ICSI attempts were activated by piezoelectric method 30 minutes after the ICSI procedure and by Ca Ionophore technique for 30 minutes immediately after the ICSI procedure. Fertilization and embryo culture procedures were performed in the same incubators by the same embryologist using the same culture solutions. Patients for whom blastocyst could not be obtained in previous IVF/ICSI attempts and who could not undergo or had unsuccessful embryo transfer were included in the procedure. **Results:** While the mean age of the 59 patients included in the study was 37.4, the mean number of oocytes collected was 7.4. While the fertilization rate was 54.6% after calcium ionophore administration in the patient group with a fertilization rate of 39% in the previous cycle after the ICSI procedure, it was 82.7% in the same group after the piezoelectric procedure. The blastocyst rate was 27.6% after the calcium ionophore administration in the patient group with a blastocyst rate of 19.4% in the previous cycles, while the blastocyst rate was 54.2% in the same group after the piezoelectric procedure. The clinical pregnancy rate after the administration of calcium ionophore was 27%, and the clinical pregnancy rate after the piezoelectric procedure was 49.64%. **Conclusion:** The results of the study showed a limited improvement in the groups treated with calcium ionophore compared to the previous cycle, while a significant increase was observed in both the fertilization rate and the blastocyst rate in the groups that underwent the piezoelectric procedure. After the piezoelectric procedure, calcium channels were stimulated and the energy flow between mitochondria and nucleus was accelerated. This is directly reflected in clinical pregnancy rates.

#### ENDOCRINE STIMULATION FOR MEN WITH NON-OBSTRUCTIVE AZOOSPERMIA PRIOR TO MICRO-TESE – CAN HORMONAL RESPONSE PREDICT SPERM RETRIEVAL?

**Shlomi Barak**<sup>1,2,3</sup>, Netanel Waldenberg<sup>2</sup>, Aharon Peretz<sup>4</sup>, Reut Bartoov<sup>5</sup>, Pavel Itsykson<sup>6</sup>, Bar Guy<sup>1,3</sup>

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<sup>4</sup>IVF, IVF and Infertility Unit, Shaare Zedek Medical Center, Jerusalem, Israel

<sup>5</sup>The Bartoov Center, The Bartoov Center - the Comprehensive Center for Male Fertility, Petah-Tikva, Israel

<sup>6</sup>IVF, Assuta Rishon Lezion, Rishon Lezion, Israel

**Problem statement:** To investigate the surgical outcome in non-obstructive azoospermia (NOA) patients treated hormonally prior to their microdissection testicular sperm extraction (micro-TESE), and to assess the value of their hormonal response as a predictor of sperm retrieval. **Methods:** The records of 117 NOA patients who underwent micro-TESE between December 2019 and March 2022 were reviewed. Seventy-seven patients who were hormonally treated with aromatase inhibitor or recombinant- hCG prior their surgical procedure, of which 34 (44%) had unexplained (idiopathic) NOA, 25 (32.4%) had Klinefelter syndrome, 8 (10.4%) had history of cryptorchidism, 4 (5.2%) had microdeletion of the AZFc and 6 (7.8%) who were previously treated with chemotherapy were included. Baseline serum luteinizing hormone, follicle stimulating hormone, and testosterone levels were documented. Post-treatment serum testosterone levels were measured. Sperm retrieval was noted as positive or negative. Paired t- test and repeated measure analysis were used to demonstrate testosterone levels between pre and post-treatment according to independent parameters. A cutoff value for positive/negative sperm retrieval was calculated with receiver operating characteristic (ROC) curve analysis. P<0.05 was considered as significant. **Results:** Forty-four patients (57%) had successful sperm retrieval (positive SR group). In 33 patients (43%) no sperm was retrieved (negative SR group). While no significant difference was found between groups regarding baseline average testosterone levels (p=0.86), post -treatment testosterone levels of the positive SR group were significantly higher compared to the negative SR group (p<0.001). ROC analysis determined 36.5% as the best cutoff value of testosterone level change predicting SR outcome. **Conclusion:** Pre-operative hormonal response has a predictive value for sperm retrieval in medically treated NOA patients. Patients should be presented with this data during their pre-operative counselling session to manage psychological burden and to enable informed decision.



#### HUMAN OVARIAN AGEING IS CHARACTERIZED BY OXIDATIVE DAMAGE AND MITOCHONDRIAL DYSFUNCTION

**Myrthe Smits**<sup>1</sup>, Bauke Schomakers<sup>2</sup>, Michel van Weeghel<sup>2</sup>, Eric Weve<sup>2</sup>, Rob Wust<sup>3</sup>, Frederike Dijk<sup>4</sup>, Georges Janssens<sup>2</sup>, Mariette Goddijn<sup>1</sup>, Sebastiaan Mastenbroek<sup>1</sup>, Riekkelt Houtkooper<sup>2</sup>, Geert Hamer<sup>1</sup>

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<sup>3</sup>Laboratory for Myology, Department of Human Movement Sciences, Faculty of Behavioural and Movement Sciences, Vrije Universiteit Amsterdam, Amsterdam, Netherlands

<sup>4</sup>Department of Pathology, Cancer Center Amsterdam, Amsterdam UMC, University of Amsterdam, Amsterdam, Netherlands

**Problem statement:** Human ovarian ageing encompasses the age-related decline in female fertility. Oxidative stress and mitochondrial dysfunction in oocytes are suggested as causal, but corroborating evidence is limited. **Methods:** Immunofluorescence imaging was used on human ovarian tissue of women aged between 18-45 years old in order to visualize mitochondrial activity and reactive oxygen species damage to proteins, lipids and DNA. Additionally, metabolomics and lipidomics analysis was carried out on a cohort of 150 human germinal vesicles and metaphase I oocytes and 15 corresponding cumulus cell samples of



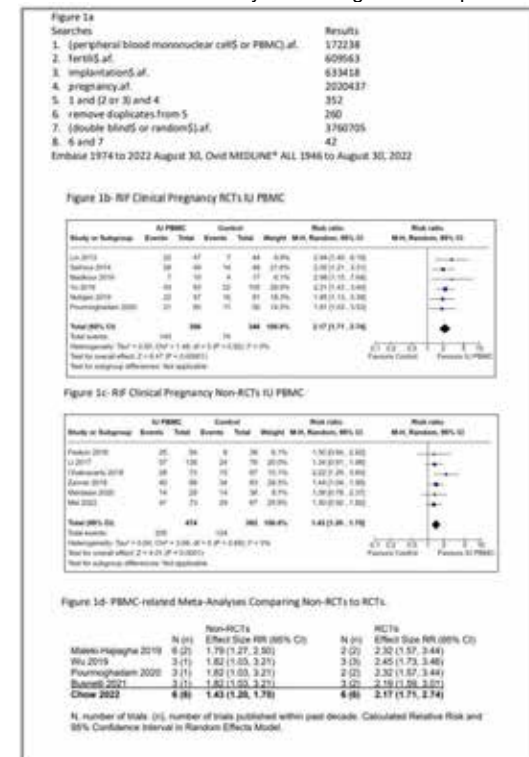
women between 23 and 42 years old. **Results:** We found oxidative damage by protein and lipid (per)oxidation at the primordial follicle stage. Additionally, metabolomics and lipidomics also showed different signs of oxidative damage: a shift in glutathione to oxiglutathione ratio and depletion of phospholipids. Age-related changes in polar metabolites suggested a decrease in mitochondrial function, as demonstrated by NAD<sup>+</sup>, purine and pyrimidine depletion, while glycolysis substrates and glutamine accumulated with age. Furthermore, our data suggested that oocytes of advanced maternal age likely use alternative energy sources such as the glycolysis and the adenosine salvage pathway and increased ATP production in cumulus cells. **Conclusion:** Our findings indicate that oocytes of advanced maternal age suffer from oxidative damage and mitochondrial dysfunction and make use of alternative energy sources.

**INTRAUTERINE PERIPHERAL BLOOD MONONUCLEAR CELLS DOUBLES CLINICAL PREGNANCY RATE IN WOMEN WITH RECURRENT IMPLANTATION FAILURE: AN EFFECT OBSCURED BY NON-RANDOMIZED CONTROLLED TRIALS – A META-ANALYSIS (PART II)**

**Ezri Chow<sup>1</sup>, Tony Kun Fai Chow<sup>2</sup>**  
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**Problem statement:** Intrauterine autologous peripheral blood mononuclear cells (PBMC) was first applied in patients with recurrent implantation failure (RIF) in 2006. Its acceptance has been slow due to the modest efficacy demonstrated by subsequent clinical trials. In Part 1 of our series, we demonstrated the efficacy of intrauterine platelet-rich plasma (PRP) was distinctly different between 12 RCTs compared to 9 non-RCTs. This study aims to determine the true efficacy of PBMC and examine if this was obscured by non-RCTs. **Methods:** A systematic search was conducted on the 31st of August, 2022 using OVID Medline and Embase. (Figure 1a) Eligible articles pertaining to the efficacy of PBMC upon clinical pregnancy in fertility research were retrieved from searches 6 and 8. Risk ratios (RR) and confidence intervals (95%CI) were calculated using Review Manager 5.4 (Cochrane Collaboration). **Results:** Search 8 identified 5 PBMC-related RCTs pertaining to RIF, with 4 meta-analyses that compared RCTs to non-RCTs, including one additional RCT. Search 6 identified 11 non-RCTs, 6 published within the past decade. **Clinical Pregnancy:** RCTs: 6 studies, 652 participants, RR=2.17(1.71, 2.74), X<sup>2</sup>p=0.92, I<sup>2</sup>=0%. Non-RCTs: 6 studies, 866 participants, RR=1.43(1.20, 1.70), X<sup>2</sup>p=0.69, I<sup>2</sup>=0%, showing two distinct, homogenous effect size. (Figures 1b and 1c). **Conclusion:** The pitfalls of non-RCTs in RIF research are being recognized as systematic reviewers report PBMC-related clinical pregnancy rates specifically in subgroups of RCTs and non-RCTs. (Figure 1d) Although higher efficacy in RCTs had been suggested, there was insufficient data and hence wide confidence intervals and uncertainty. To further compound this, the majority of reported non-RCTs were published over a decade ago. In an inherently progressive field that is RIF research, with constant improvements in stimulation protocols, preservation technologies, and IVF techniques, it may not be appropriate to assume that the baseline failure rate in RIF remains equal over time. In this study, we restricted comparisons to all clinical trials published in the past decade and found that clinical pregnancy doubled with PBMC treatment in RCTs with a distinctly reduced effect size in non-RCTs. We theorize that

a systemic problem exists in RIF research and that non-RCTs obscure the efficacy of investigated therapies.



**ORAL PRESENTATIONS**  
 (EMBRYO TRANSFER (ET) session)

**NO METHYLOME DIFFERENCES OBSERVED IN ART CHILDREN BORN AFTER EMBRYO CULTURE IN DIFFERENT CULTURE MEDIA**

**Rebekka Koeck<sup>1,2</sup>, Jorg Tost<sup>3</sup>, Florence Busato<sup>3</sup>, Dimitri Consten<sup>4</sup>, Jannie Van Echten-Arends<sup>5</sup>, Sebastiaan Mastenbroek<sup>6</sup>, Yvonne Wurth<sup>4</sup>, Heleen Zandstra<sup>7</sup>, Ron Van Golde<sup>7</sup>, John Dumoulin<sup>7</sup>, Han Brunner<sup>1,8</sup>, Masoud Zamani Esteki<sup>1,2</sup>, Aafke Van Montfoort<sup>7</sup>**

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- <sup>5</sup>Section of Reproductive Medicine, Department of Obstetrics and Gynecology, University Medical Center Groningen, Groningen, Netherlands
- <sup>6</sup>Center for Reproductive Medicine, Amsterdam Reproduction & Development Research Institute, Amsterdam Umc, Amsterdam, Netherlands
- <sup>7</sup>Department of Obstetrics and Gynaecology, GROW School for Oncology and Developmental Biology, Maastricht University Medical Centre+, Maastricht, Netherlands
- <sup>8</sup>Department of Human Genetics, Radboud University Medical Center, Nijmegen, Netherlands

**Problem statement:** A growing number of children born are conceived through in assisted reproductive technology (ART) procedures that have been linked to increased risks of adverse perinatal outcomes and altered growth profiles in the resultant children. These outcomes are also influenced by the



media used for embryo culture and this effect is hypothesized to be mediated epigenetically, e.g. through DNA methylation. Therefore, we investigated the methylome in ART offspring who underwent embryo culture in different media. **Methods:** We profiled the umbilical cord blood (UCB) methylome of 106 ART-neonates cultured in G5 or HTF, and the saliva methylome of 120 9-year-old ART children, cultured in G3 or K-SICM, using the Infinium Human Methylation EPIC BeadChip. Analyses were carried out separately on UCB and saliva samples using mixed effects linear models adjusted for potential confounders. Methylation outliers represent values more than three interquartile ranges from the upper or lower quartiles. **Results:** In both comparisons (UCB and saliva) we identified no significant methylation differences between the culture medium groups in terms of: (i) systematic differences at single CpG sites or regions, (ii) imprinted sites/genes or birth weight associated sites, (iii) stochastic differences presenting as DNA methylation outliers or differentially variable sites, and (iv) epigenetic gestational age acceleration (UCB samples only). **Conclusion:** The ART culture media investigated did not lead to methylome difference in the resultant neonates/children, suggesting that any culture medium specific epigenetic alterations resolve prenatally. To investigate environmental-epigenetic interactions occurring earlier during human development and their impact on development, (epi)genetic and transcriptomic profiling of single cells from preimplantation embryos is required.

#### DOES PROGESTERONE LEVEL INFLUENCE CLINICAL PREGNANCY RATE AFTER FRESH EMBRYO TRANSFER IN IVF/ICSI CYCLES?

Rita Claro Nunes<sup>1</sup>, Mariana Gamito<sup>2</sup>, Catarina Policiano<sup>1</sup>, Isabel Pereira<sup>1</sup>, Sandra Sousa<sup>1</sup>, Joaquim Nunes<sup>1</sup>, Giedre Lopes<sup>1</sup>, Marta Carvalho<sup>1</sup>, Fernanda Leal<sup>1</sup>, Carlos Calhaz-Jorge<sup>1</sup>, Ana Aguiar<sup>1</sup>

<sup>1</sup>Unidade da Medicina da Reprodução, Centro Hospitalar Universitário Lisboa Norte Hospital de Santa Maria, Lisbon, Portugal

<sup>2</sup>Ginecologia e Obstetria, Hospital Beatriz Angelo, Lisbon, Portugal

**Problem statement:** In controlled ovarian stimulation in In Vitro Fertilization (IVF)/ Intracytoplasmic Sperm Injection (ICSI) cycles, serum progesterone (P4) can peak too early, with an unexpected rise at the end of the follicular phase. This phenomenon might decrease implantation rate. It has been suggested that a cut-off of 1.5 ng/mL may have a negative effect on the clinical pregnancy rate (CPR) in GnRH-antagonist protocol (GnRH-ant) cycles. The aim of this study was to evaluate the association, if any, between P4 level at trigger day or the day before in IVF/ICSI cycles with GnRH-ant and CPR. **Methods:** Retrospective study of the IVF/ICSI performed between January 2019 and June 2022 in a tertiary hospital. Inclusion criteria were: female age 20 to 40 years-old, LH surge inhibition with GnRH-ant protocol, fresh embryo transfer and P4 level at trigger day or the day before. The measurements of P4 were performed in the morning (7 to 9 am) in all patients. Clinical pregnancy was defined as the presence of a gestational sac with an embryo with heartbeat at ultrasound evaluation at 6-7 weeks. P4 distribution was analyzed, and CPR was evaluated considering P4 as continuous variable and considering P475th centile and P41.5 ng/mL. Statistics were conducted using Mann-Whitney U test and Chi-square test. Statistical difference was considered significant when P<0.05. **Results:** A total of 346 IVF/ICSI fulfilled the inclusion criteria. The CPR was 32.7% (113 pregnancies). The median P4 level was 0.61 ng/mL [0.39-0.92]. There was no statistically significant difference in median P4 between the group of patients with clinical pregnancy and the non-pregnant group (0.65 ng/ml [0.41-0.93] vs 0.56 ng/mL [0.38-0.85], p = 0.14). In our sample, P4

75th centile, was 0.92 and the CPR above that value was 29.4%. When considering P41.5 ng/mL, CPR was 25%. We found no association between P4 and clinical pregnancy, when considering P475th centile or P41.5 ng/mL. **Conclusion:** Our data did not show an association between higher P4 levels at trigger and low CPR in fresh embryo transfer treatment, suggesting that P4 level at trigger may not be used as an isolated criteria for freeze-all.

## ORAL PRESENTATIONS

(HITECH IVF session)

#### IMPROVEMENT OF PREGNANCY RATES IN A SURROGATE MOTHERHOOD PROGRAM AFTER ENHANCEMENT OF THE LEYDIG CELLULAR SECRETORY FUNCTION OF THE MALE PARTNER

Ioannis Giakoumakis<sup>1</sup>, Diamantis Daphnis<sup>1</sup>, Kostas Kastrinakis<sup>1</sup>, Aris Kaltsas<sup>2</sup>, Nikolaos Sofikitis<sup>2</sup>

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**Problem Statement:** To evaluate the role of the pharmaceutical treatment of the male partner in infertile couples participating in a surrogate motherhood program.

**Methods:** Twenty one couples with severe oligoasthenoteratozoospermia participating in a surrogate motherhood program with donor oocytes were randomly divided into two groups A and B. Men of couples of group A did not receive any pharmaceutical treatment for three months (observation period). In contrast men of couples of group B received clomiphene citrate 50 mg per day for three months (experimental period). At the end of the observation period and the experimental period, couples of groups A and B, respectively, participated in ICSI programs using donor oocytes. Generated embryos were cultured up to the blastocyst (BL) stage. Up to three blastocysts were transferred per female surrogate recipient. **Results:** At the end of the 3-month period, peripheral serum testosterone, sperm concentration, % motile spermatozoa, and the (proportion of developed BLs per fertilized oocyte) X100 was significantly larger (P 0.05; Chi Square test; Yates correction) in group B than in group A. In addition finally the 100X (proportion of pregnant surrogate recipients per total number of surrogate recipients) was significantly larger in group B than in group A (P0.05). **Conclusions:** Pharmaceutical treatment with clomiphene citrate in oligoasthenoteratozoospermic couples participating in a surrogate motherhood program has a beneficial effect on sperm capacity to fertilize the oocyte and induce early embryonic development with capacity for implantation up to the delivery of a healthy offspring. This is of great clinical and social importance given the fact that in several countries it is mandatory in assisted reproductive technology programs, at least one of the two parents to be a biological one.

#### INTRAUTERINE AUTOLOGOUS PLATELET-RICH PLASMA INFUSION DOUBLES CLINICAL PREGNANCY RATE IN WOMEN WITH RECURRENT IMPLANTATION FAILURE: AN EFFECT OBSERVED BY NON-RANDOMIZED CONTROLLED TRIALS – A META-ANALYSIS (PART I)

Ezri Chow<sup>1</sup>, Tony Kun Fai Chow<sup>2</sup>

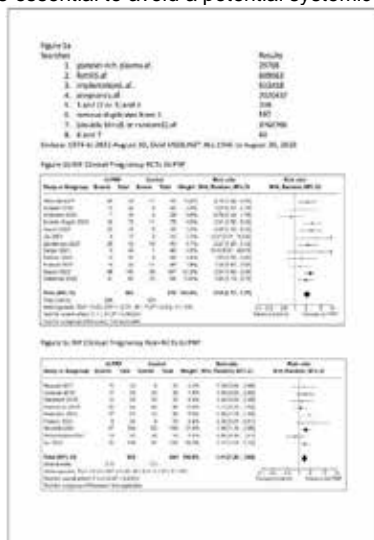
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**Problem statement:** Opinions diverge on the application of autologous platelet-rich plasma (PRP) in fertility treatment. Ranging from an easy-to-apply and safe procedure that can improve fertility outcomes in patients with reduced ovarian reserve and recurrent implantation failure (RIF), to “PRP another add-on treatment getting out of hand?” Despite multiple systematic reviews/meta-analyses, the efficacy of intrauterine PRP infusion in RIF remains ill-defined and experimental. This study aims to identify the source of controversy and determine its true efficacy. **Methods:** A systematic search was conducted on the 31st of August, 2022 using OVID Medline and Embase. (Figure 1a) Eligible articles pertaining to the efficacy of PRP upon clinical pregnancy in fertility research were retrieved from searches 6 and 8. Risk ratios (RR) and confidence intervals (95%CI) were calculated using Review Manager 5.4 (Cochrane Collaboration). Subgroup analysis was conducted to address heterogeneity, considered significant at  $X^2p<0.10$  and  $I^2>30\%$ . **Results:** Search 8 identified 14 PRP-related RCTs. Search 6 identified 13 non-RCTs. Pooled data of 27 studies, 2977 participants  $RR=1.73(1.47, 2.04)$ ,  $X^2p=0.01$ ,  $I^2=41\%$ , suggested moderate heterogeneity. RIF: Pooled data, 21 studies, 2472 participants,  $RR=1.69(1.43, 1.99)$ ,  $X^2p=0.05$ ,  $I^2=37\%$ . Subgroup analysis between RCTs and non-RCTs showed two distinct, homogenous effect sizes. (Figures 1b and 1c). RCTs: 12 studies, 1370 participants,  $RR=2.10(1.72, 2.57)$ ,  $X^2p=0.31$ ,  $I^2=14\%$ . Non-RCTs: 9 studies, 1102 participants,  $RR=1.41(1.20, 1.65)$ ,  $X^2p=0.57$ ,  $I^2=0\%$ . RCTs 3 RIF: 4 studies, 708 participants,  $RR=2.36(1.88, 2.98)$ ,  $X^2=0.80$ ,  $I^2=0\%$ .

**Conclusion:** Non-RCTs provide savings in cost and time that can lead to early awareness of innovative therapies. This however, may be counterproductive in RIF research due to flawed non-randomized controls: retrospective cohorts, women who refused consent to PRP, women without RIF, or having first IVF attempt. Interventional groups therefore may have a higher baseline risk of failure, resulting in apples-to-oranges comparisons that obscure the actual efficacy. Furthermore, non-RCTs are repeatedly referenced in reviews/meta-analyses and further contribute to the “conflicting” evidence. Randomization is fundamental in reducing patient selection bias and the RCTs in this analysis demonstrated that PRP doubles the clinical pregnancy rate in RIF patients. A debate on the role of non-RCTs in RIF research is essential to avoid a potential systemic problem.



**THE DETERMINANTS OF UNEXPECTED POOR OVARIAN RESPONSE IN YOUNG INFERTILE WOMEN (POSEIDON GROUP-1)**

**Ruya Tez**<sup>1</sup>, Ayten Sever<sup>1</sup>, Lale Karakoc Sokmensuer<sup>1</sup>, Gurkan Bozdogan<sup>2</sup>, Sezcan Mumusoglu<sup>1</sup>  
<sup>1</sup>Department of Gynecology and Obstetrics, Hacettepe University School of Medicine, Ankara, Turkey  
<sup>2</sup>Department of Gynecology and Obstetrics, Koc University School of Medicine, Istanbul, Turkey

**Problem Statement:** POSEIDON Group-1 refers to young infertile women (35 years old), with acceptable ovarian reserve markers [Antral Follicle Count (AFC)  $\geq 5$ ; anti-Mullerian Hormone (AMH)  $\geq 1.2$  ng/ml], and unexpected poor (4 oocytes) or suboptimal (4–9 oocytes) response to ovarian stimulation (OS). Although lack of specific definition criteria, normo-responders widely refers to infertile women with normal ovarian reserve markers providing 10-15 oocytes after OS. We aimed to determine the patients' demographic and OS related characteristics independently associated with unexpected hypo-response to OS, namely POSEIDON group-1.

**Methods:** Retrospective cohort study. A total of 2210 consecutive couples undergoing their first intra cytoplasmic sperm injection (ICSI) cycle at tertiary academic center during January 2014 – July 2021 were screened. Patients meeting POSEIDON group-1 (n=643) criteria were selected for study group and patients meeting normo-responder (n=340) criteria were selected for control group to compare the determinants of POSEIDON group-1. Exclusion criteria were azoospermia, pre-implantation genetic testing cycles, fertility preservation cycles, hypogonadotropic hypogonadism, body mass index (BMI) $\geq 35$ . For OS recombinant-FSH (n=618) and human menopausal gonadotropin (n=269) were used alone or in combination (n=96). Gonadotropin starting dose (150-300 IU/day) was adjusted according to patient's age, BMI and ovarian reserve markers. For pituitary suppression, GnRH-antagonist (n=748), long GnRH-agonist (n=175) or progestin primed ovarian stimulation (PPOS)(n=60) were used. Final oocyte maturation was triggered when follicles with recombinant-hCG (250mcg) and/or GnRH-agonist (0.2 mg, Triptorelin). **Results:** A total of 983 patients were included. As expected, cycle cancellation rate was significantly higher in POSEIDON Group-1 patients when compared with normo-responders (13.8 vs 7.1%, respectively, p<0.001). Multivariate logistic regression analysis was performed to determine the independent predictors of POSEIDON group-1. As female age (OR=1.05, 95%CI 1.02–1.08; p=0.001), AFC (OR=1.03, 95%CI 1.02–1.05; p<0.001), and BMI (OR=1.06, 95%CI 1.03–1.10; p<0.001) increased; the probability of POSEIDON group-1 was independently increased. Whereas indication of IVF, type of pituitary suppression protocol, type of and total dose of gonadotropin used were not associated with POSEIDON group-1. **Conclusion:** POSEIDON group-1 was independently associated with increasing female age, AFC and BMI. Type of pituitary suppression protocol, type of and total dose of gonadotropin used were not associated with POSEIDON group-1.

**METABOLIC AND ANGIOGENIC RECOVERY OF HUMAN SLOW FROZEN-THAWED OVARIAN TISSUE**

**Rebeka Eienkel**<sup>1</sup>, Andreas Schallmoser<sup>1</sup>, Nicole Saenger<sup>1</sup>  
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**Problem statement:** Cryopreservation of ovarian cortical tissue has become an important method in fertility preservation. Although freezing and thawing procedure preserves most follicles, the majority do not survive the re-transplantation process. A major obstacle of re-



transplantation is the rapid angiogenesis to accomplish sufficient blood supply. However, the biology of frozen-thawed human ovarian tissue especially in terms of metabolic behavior and VEGF expression has not been extensively studied, yet. **Methods:** Provided a signed consent, biopsy punches of ovarian cortical tissue from patients undergoing fertility preservation were cultured without freezing or after slow freezing and thawing in presence or absence of recombinant human FSH. VEGF-A expression was measured by ELISA and immunohistofluorescence. CellTiterBlue assay was applied for metabolic analysis. **Results:** After 48h of tissue culture, significantly less VEGF-A was measured in the supernatant of frozen-thawed tissue compared to fresh ovarian tissue (n=12-13). Directly after thawing metabolic activity was significantly reduced compared to fresh ovarian cortex from the same patient, but recovered over 48h (n=4-7). Similarly, during 48h tissue culture VEGF-A expression significantly increased after thawing (n=7). The addition of 17.5mIU/mL FSH slightly increased VEGF-A expression by follicles. In contrast, the use of 175mIU/mL FSH significantly decreased VEGF expression (n=4). **Conclusion:** Although freezing and thawing preserves tissue integrity and cellular viability, we showed that ovarian cortical tissue needs 48h to recover metabolically. This recovery also included an increase in VEGF-A secretion. Since VEGF induces angiogenesis, a tissue culture step after thawing might support a rapid establishment of blood supply. It remains unclear, whether the metabolic recovery might, on the other side, prolong the time of the tissue requiring blood supply. Additional FSH supplementation could support the VEGF secretion. However, higher FSH levels might impair ovarian VEGF expression. In women with high FSH levels e.g. due to diminished ovarian reserve, hormonal pre-treatment of the patients might be proposed. Additional research will be necessary to further improve re-transplantation success. Here, we show that human ovarian tissue needs 48h to recover metabolically after freezing and thawing. This also includes an increase in VEGF secretion, which is regulated by FSH.

## ORAL PRESENTATIONS

(Hall B, Saturday 16:00-16:30)

### AN OLD TOPIC REVISITED. DIAGNOSTIC HYSTEROSCOPY PRIOR TO THE FIRST IVF CYCLE. SYSTEMATIC REVIEW AND UPDATED META-ANALYSIS

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<sup>6</sup>Ultrasound Unit, Clinica Universitaria Navarra, Pamplona, Spain

**Problem statement:** There has been a considerable debate regarding the beneficial effect of performing a hysteroscopy before first IVF cycle. A meta-analysis published by Pundir in 2014 found significantly higher pregnancy rates when hysteroscopy was done before starting ART cycles. But in 2016 a multicentric RCT published by Smit failed to show any benefit of performing this diagnostic procedure prior to ART start. Since then, several studies addressing this issue has been done. The aim of this systematic review is to update the previous meta-analysis and synthesize the available evidence on this matter. **Methods:** This systematic review has been conducted following PRISMA guidelines. Databases searched from inception to June 2022 were: PubMed-

MEDLINE, WOS, The Cochrane Library, Google Scholar and main trial registries using a combination of the following keywords: 'assisted reproduction', 'live birth', 'clinical pregnancy', 'hysteroscopy' and 'uterine anomalies' among others. RCTs and observational studies comparing pregnancy and live birth rates between patients who had a diagnostic hysteroscopy before the first IVF cycle and patients who directly undergo to the IVF cycle were included. Quality of evidence of included studies was assessed using GRADE methodology. Odds Ratios(OR), with a 95% confidence interval(CI), were calculated, using the random effects model. Primary outcome was considered clinical pregnancy and secondary outcome live birth. PROSPERO number was requested. **Results:** The electronic search recovered 1455 studies. Twelve studies were included in the quantitative synthesis involving reproductive outcomes from 4726 patients undergoing their first IVF cycle and including six RCTs trials: Ben-Abid 2021, Alleyasin 2017, Smit, 2016, Elsetohy 2015, Shawky 2012 and El-Nashar 2011; one prospective cohort study: Trninic-Pjevic 2011; three retrospective cohort studies: Eserol 2021, Tanacan 2019 and Yu 2012 and two case-controlled studies: Killic 2013 and Doldi 2005. The OR of clinical pregnancy was significantly higher in patients who had a diagnostic hysteroscopy before the first IVF cycle, OR=1.52 (95%CI 1.23, 1.87; I2=57%). There were no significant differences in live birth among both groups (OR= 1.13; 95%CI, 0.91, 1.40;I2=15%). **Conclusion:** The results of this meta-analysis suggest a possible beneficial effect of hysteroscopy before starting ART cycles and are in line with the previous meta-analysis.

### A COMPARISON BETWEEN VAGINAL NOTES [NATURAL ORIFICE TRANSLUMINAL ENDOSCOPIC SURGERY] HYSTERECTOMY VERSUS VAGINAL HYSTERECTOMY (VANH). RANDOMIZED CONTROL TRIAL

Lucia Di Francesco<sup>1</sup>, Ashley Thakur<sup>1</sup>

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**Introduction:** Vaginal hysterectomy has been the preferred route for hysterectomies in benign gynecology diseases. However, poor visualization and limited space for manipulation are the significant limiting factors. The emerging of NOTES (Natural orifice transluminal endoscopic surgery) for gynecologic surgeries began in 2012 when Ahn et al first demonstrated its feasibility and safety. Following that, many authors have published their experiences of vNOTES in a series of gynecologic procedures. However, the novelty of the technique and its lack of surgical standardization result in higher heterogeneity among different studies. **Problem Statement:** The aim of this study is to compare the vNOTES hysterectomy with the total vaginal hysterectomy (TVH) in terms of surgical complications, operative time, length of hospital stay, estimated blood loss and conversion rate. **Methods:** Retrospective cohort study: Preliminary data. The women undergoing hysterectomy for benign diseases by vNOTES and Total Vaginal Hysterectomy (TVH) from January 2022 to September 2022 at BronxCare hospital in New York City were retrospectively analyzed. **Results:** From January 2022 to September 2022, we analyzed 5 women underwent vNOTES and 6 women underwent TVH. There were no statistically significant differences in age, body mass index, smoking, menopausal status, parity, number of previous abdominal surgeries and preoperative hemoglobin level between the two groups (table 1). Moreover, no statistically significant differences were found in terms of perioperative complications, conversions rate, blood transfusion and hospital stay. However, from the preliminary analysis, the mean operative times were 379.6 min (± 100.1 min) in the vNOTES group and 187.1 min (±40.7 min) in the vaginal



hysterectomy group (P = 0.001). Nonetheless, the indications for surgery in the two groups were mainly different, as in the vNOTES group 100% of the patients had symptomatic vaginal prolapse, where the mean indication for surgery in the vaginal hysterectomy group was AUB. Also, the mean estimated blood loss (EBL) in the vNOTES group was significant less than in the TVH group (108.3±49.1vs 250±122.4. P = 0.002) (Table 2). **Conclusions:** Our preliminary data showed that the early operative outcomes of vNOTES hysterectomy were comparable to those of the TVH group. However, our study showed also the importance of adequate patients' selection for the study analysis. Randomized controlled trials are needed to evaluate whether vaginally assisted NOTES hysterectomy is superior to the standard vaginal hysterectomy.

	TVH	Vnotes	T test
Age (Mean±SD)	58.8± 7.6	53.1 ± 9.1	0.30
BMI (Mean±SD)	32.2± 2.1	29.6±4.4	0.45
Smoking (%)	0%	0%	
Menopausal (%)	50%	50%	
Parity (Mean±SD)	2.1 ±0.7	2±1.2	0.78
N of abdominal surgery (Mean±SD)	1.1±1.1	1.8±1.3	0.41
Pre-op Hb (Mean±SD)	13±1.6	12.2±1.5	0.4

Table 1. Demographic characteristics

	TVH	Vnotes	T test
Peri-operative complication (%)	0%	0%	
Blood loss (cc) (mean ± SD)	250 ±122.4	108.3 ±49.2	0.02
Duration (min) (mean ± SD)	379.6 ±100.1	187.1 ±40.7	0.001
Hospital stay (N of days) (mean ± SD)	1.1 ± 0.4	1.2 ± 0.4	0.90
Blood transfusion (%)	0%	0%	
Conversion rate (0%)	0%	0%	
Indications for surgery	AUB	vaginal prolapse	
Patient #1	AUB	vaginal prolapse	
Patient #2	AUB +	vaginal prolapse	
Patient #3	anemia	+ AUB	
Patient #4	AUB	vaginal prolapse	
Patient #5	AUB	+ rectocele	
Patient #6	PMB	vaginal prolapse	

Table 2. Study outcomes  
AUB - Abnormal Uterine Bleeding  
PMB: Post-Menopausal Bleeding

### OUTCOME OF FERTILITY, PREGNANCY AND NEONATAL OF PATIENT WITH ADENOMYOSIS

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**Problems Statement:** Adenomyosis is a perplexing gynecological condition characterized by endometrial epithelial and stromal cells within the myometrium. In addition to the well-known effects of adenomyosis on pain and quality of life, it has recently been discovered that it can severely impact pregnancy and newborn outcomes. In a recent systematic study, adenomyosis was also linked to poor conception, pregnancy, and neonatal outcomes. However, this review did not include all eligible papers. No sensitivity analysis was undertaken to account for potential confounders such as age, number of prior pregnancies, previous mode of delivery, and endometriosis co-existence. Most significantly, pregnancy outcomes were not assessed based on the technique of conception, which could be a source of bias. Therefore, this study aimed to explore the relationship between adenomyosis and reproductive results after adjusting for various variables and examine the link between adenomyosis and pregnancy and neonatal outcomes **Methods:** A systematic review was conducted to understand better the Outcome of Fertility, Pregnancy and Neonatal of Patient with Adenomyosis. We searched Medline, Pubmed, and Cochrane for all studies that met the criteria. **Results:** In terms of reproductive outcomes, this systematic meta-analysis discovered that adenomyosis is associated with a lower clinical pregnancy rate and a higher miscarriage rate after ART, particularly when the ovaries are stimulated with a short GnRH agonist or antagonist protocol. Premature labor, preeclampsia, cesarean delivery, fetal malpresentation, SGA, low birth weight, and PPH are all associated with adenomyosis. The link could be confirmed after correcting these results for age and mode of conception **Conclusion:** We found a link between adenomyosis and poor reproductive outcomes, particularly following ART protocol downregulation. This link is less significant or missing in ART with mixed or ultra-long GnRHa protocols. Preterm delivery, preeclampsia, cesarean section, fetal malpresentation, SGA, low birth weight, and PPH are all linked to adenomyosis during pregnancy. Gynecologists should be aware of these risks to recommend good pregnancy controls and diagnose and treat pregnancy problems early. Detail in every step of the reproductive course, matched, controlled studies with accurate adenomyosis categorization are needed from fertility to postpartum time.

### A NEW SURGICAL APPROACH FOR THE TREATMENT OF POSTERIOR FOURCHETTE FISSURE: THE DOUBLE Z-PLASTY WITH V-Y ADVANCEMENT (JUMPING MAN FLAP)

Ana Rosa Araujo Andrade<sup>1</sup>, Oliveira Andreia<sup>1</sup>, Joao Morais<sup>1</sup>, Rosa Macedo<sup>1</sup>, Claudia Marques<sup>1</sup>

Departamento Da Mulher E Da Saude Reprodutiva, Centro Materno-Infantil Do Norte, Porto, Portugal

**Problem Statement:** Isolated, persistent, chronic posterior fourchette fissure (CPFF) is a cause of dyspareunia. We aimed at presenting a new surgical approach for the treatment of CPFF with associated dyspareunia. **Methods:** Data was collected through access to clinical records. **Results:** In the first case, a 44 year-old female was referred to our clinic for vulvar pruritus, CPFF and apareunia. On physical examination, a CPFF with lesions compatible with lichen sclerosis were noted. The patient had been submitted to the





excision of the fissure under local anesthesia and topical treatments, without improvement. A double Z-plasty with V-Y advancement was performed under general anesthesia, without complications (Images 1-3). Four months later, she noted an improvement in dyspareunia and the fissure had not recurred. The second case, a healthy 20 year-old female was referred for dyspareunia since the beginning of sexual activity. Upon physical examination, a CPFF was noted. An excision of the lesion under local anesthesia turned out unsuccessful; this was followed by a double Z-plasty with V-Y advancement. Four months later she reported painless penetration. The third patient, a 59 year-old woman was referred for long-term dyspareunia and CPFF. The same procedure was performed as first line treatment. Three months after the surgery the fissure had not recurred. The fourth case, a 42-year-old woman with Ehlers-Danlos syndrome, was referred to our clinic for superficial dyspareunia and CPFF. The patient was treated with topical lidocaine, pregabalin, amitriptyline, and nortriptyline, without improvement. We performed the same procedure and 2 months later she reported painless intercourse, no longer needing topical lidocaine or other lubricant. **Conclusion:** The evidence for the management of fourchette fissures is overall weak. We describe four successful cases of CPFF in patients who presented with dyspareunia. Surgical refashioning of the introit may help to avoid fissure recurrence. This new technique may be considered in selected patients with isolated, persistent, CPFF.

## ORAL PRESENTATIONS 1: INFERTILITY/ART/IVF



### A NOVEL CLASSIFICATION SYSTEM OF 4-CELL EMBRYOS FOR BETTER PROGNOSTIC OUTCOMES AND REDUCED INTER-CLINIC VARIABILITY

**Rishabh Hariharan**<sup>1,2</sup>, Chloe He<sup>1,3,4</sup>, Neringa Karpaviciute<sup>1</sup>, Ranya Derrick<sup>1,5</sup>, Celine Jacques<sup>6</sup>, Jerome Chambost<sup>6</sup>, Thomas Ebner<sup>7</sup>, Martin Rosselot<sup>8</sup>, Sophie Loubersac<sup>8</sup>, Koen Wouters<sup>9</sup>, Nikica Zaninovic<sup>10,11</sup>, Ryan Miller<sup>11</sup>, Jonas Malmsten<sup>11</sup>, Maria Badalotti<sup>12</sup>, Cristina Hickman<sup>1,13</sup>

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**Problem Statement:** Current convention categorises 4-cell embryo shapes as either tetrahedral or planar. Consensus regarding these shapes is that tetrahedral embryos are correlated with improved outcomes for both blastulation and pregnancy. However, our analysis of 1,463 embryos across 5 clinics from 4 countries shows significant variability in tetrahedral: planar embryo ratios ( $p < 0.05$ ). We aim to find the cause of this inter-clinic variability and propose a solution

through the creation of a novel classification system (the Hickman classification system, Fig. 1). This subdivides the 2 initial shapes into a total of 6 potential structures. Further, we aim to investigate its prognostic and diagnostic benefits. **Methods:** 1,463 embryos were analysed from 5 international clinics retrospectively. All embryos were labelled as either tetrahedral or planar based on inter-cellular contact points (ICCPs) by the parent clinics. Gardner score, blastulation, pregnancy and live birth rate data was also collected. Embryos were then re-annotated according to the Hickman classification system by 3 independent researchers in a blind fashion, after which a common consensus was reached. Novel shapes were then analysed via chi-squared test for significance with respect to embryo outcomes and inter-clinic variance. **Results:** The originally significant inter-clinic variability was normalised using Hickman classification, and new tetrahedral:planar ratios were no longer significant ( $p = 0.23$ ). 24% of all embryos were classified as 'pseudotetrahedral' ( $n = 249/1037$ ), a novel shape in which two cells are tetrahedral and two are planar in nature. The Hickman classification system is also a significantly better prognostic indicator for successful blastulation amongst tetrahedral embryos ( $p < 0.05$ ), and for both successful and unsuccessful blastulation amongst planar embryos ( $p < 0.05$ ). Finally, no significance was found regarding outcomes for pregnancy or live birth rates for either classification system. **Conclusion:** The Hickman classification system proposes an effective solution to inherent issues of inter-operator and clinic variability when labelling 4-cell embryos. Further, it bears strong prognostic benefits as well with regards to blastulation rates. Finally, use of this more detailed system provides a higher quality dataset, allowing easier implementation of artificial intelligence (AI) for automation of classification and for 3-dimensional blastocyst reconstruction.

Shape	Number of cells with:				Images
	0 ICCPs	1 ICCP	2 ICCPs	3 ICCPs	
Tetrahedral	0	0	0	4	
Planar	0	0	4	0	
Pseudotetrahedral	0	0	2	2	
Linear	0	2	2	0	
Open T	0	1	2	1	
Close T	0	2	0	1	

### IS DOUBLE FROZEN BLASTOCYST TRANSFER BETTER THAN SEQUENTIAL SINGLE FROZEN BLASTOCYST TRANSFERS IN WOMEN 35 YEARS OF AGE?

**Sinem Ertas**<sup>1</sup>, Kayhan Yakin<sup>1</sup>, Basak Balaban<sup>1</sup>, Bulent Urman<sup>1</sup>

Women's Health and Infertility Unit, VKV American Hospital, Istanbul, Turkey

**Problem Statement:** The utilization of a freeze-all policy with subsequent thawed embryo transfers is increasing worldwide. While avoiding ovarian hyperstimulation syndrome, this approach results in success rates that appear to be at least equivalent or superior to fresh transfers. Due to the recognition of increased maternal and fetal risks associated with multiple pregnancies, single embryo transfers are



preferred over double embryo transfers in fresh IVF (In vitro fertilisation) cycles. However, it is unclear whether the same strategy holds true after freeze-all cycles. To understand whether a D-FBT (double frozen blastocyst transfer) is superior to SS-FBT (sequential single frozen blastocyst transfers), we performed a retrospective analysis between January 2016 and December 2018, of 296 women 35 years of age who had all their embryos frozen and subsequently transferred. **Methods:** Inclusion criteria were women 35 years of age who had their entire cohort of embryos frozen at the blastocyst stage for different indications based on physician preference. All patients had at least two good-quality embryos in their frozen cohort. Preimplantation genetic testing cycles were excluded. Demographic data were extracted from the patient files and the electronic database. Women were categorized based on their mode of embryo transfer (D-FBT vs SS-FBT). Decision to adopt one or the other strategy was reached by the couple after counselling. The reason for selecting only women 35 years of age was due to the legislative rule of mandating single embryo transfers in younger women. The study's primary outcome was live birth rate (LBR) per woman after one double versus two sequential single embryo transfers. **Results:** Overall 296 women underwent 362 embryo transfer cycles (D-FBT=186; SS-FBT=176). When adjusted for female age cumulative LBR per woman was similar in D-FBT (46.2%) and SS-FBT (58.2%) ( $p=0.054$ , aHR=1.62, 95% CI:1.00-2.60). While one monozygotic twin delivery was observed in the SS-FBT group, 22 out of 86 (25.6%) live births after D-FBT were twins. **Conclusion:** Given the equivalent live birth rate and lower multiple pregnancy rate, SS-FBT should be preferred over D-FBT in women 35 years of age who have at least two good quality frozen blastocysts.

#### PERINATAL RESULTS AFTER FROZEN VERSUS FRESH EMBRYO TRANSFER: A COMPARATIVE COHORT STUDY

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**Problem statement:** According to literature, frozen embryo transfer has been associated with higher perinatal morbidity such as greater birth weight, higher prevalence of hypertensive pregnancy disorders, preeclampsia, postpartum haemorrhage... Our objective was to evaluate whether maternal-foetal morbidity in pregnancies obtained by in vitro fertilization differs according to the type of transfer used. **Methods:** retrospective cohort study consisting of 732 clinical pregnancies after in vitro fertilization (IVF) between 2016 and 2019 at our tertiary Hospital: 489 gestations who undergone fresh embryo transfer (FET) and 243 gestations obtained after cryotransfer (CT). Patient's baseline characteristics and treatment parameters as endometrium thickness and estradiol and progesterone serum levels, were measured. T-student, X2 test and regression models were used to analyse quantitative and categorical variables respectively by STATA14 program. **Results:** We found no significant differences between groups in baseline characteristics as age ( $p=0.373$ ), body mass index ( $p=0.821$ ), and hormonal basal levels FSH, LH, E2, AMH ( $p=0.085$ ,  $p=0.35$ ,  $p=0.089$ ,  $p=0.625$  respectively). As expected, E2 serum levels were higher in FET group (1707pg/ml Vs. 246,3pg/ml  $p=0.000$  IC95% 829,9–2093,4). No difference was observed regarding the endometrial thickness ( $p=0.213$ ). Estradiol valerate has been used at a dose of 6mg/day in all our CT. No difference was found in the number of embryos transferred. 74.2% of our

transfer are double embryo because most of the embryos are on day 2-3 culture. We observed a significant greater rate of miscarriage in the CT group (31.3% Vs. 15.5%  $p=0.000$ ), whereas, multiple gestation rate was significantly higher in the FET group (18.4% Vs. 9.6%;  $p=0.006$ ). No difference was found for fetal malformations. Regarding maternal morbidity we found no significant differences for: gestational diabetes ( $p=0.228$ ), preeclampsia ( $p=0.218$ ) or intrauterine growth restriction ( $p=0.943$ ). The birth weight was significantly different between groups: 3065.9g after FET Vs. 3243.9g after CT ( $p=0.006$ ; IC95% 77.4-278.7). No difference in neonatal gender was observed. **Conclusion:** Given the controversy in the literature and the results found, we consider that the choice of the type of transfer should be determined individually, taking into account the characteristics of the patients and their treatment, since in terms of foetal-maternal safety they seem equivalent. Birth weight has proven to be greater after CT

#### 'KEEP CALM AND CARRY ON' CHANCE OF A LIVE BIRTH BEYOND 5 ART CYCLES BASED ON A LARGE NATIONAL ART REGISTRY

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**Problem statement:** Although In vitro fertilisation has assisted many couples to achieve their dream of having a baby, repeated failed cycles are a reality that many couples face. A pertinent question asked by women is the likelihood of having a live birth after recurrent implantation failure. We explored this question by analysing Human Fertilisation and Embryology Authority (HFEA) database. **Methods:** A retrospective cohort study was done using HFEA database from 1999 and 2016. Fresh IVF/ICSI cycles were included in the analysis, excluding cycles with donor egg treatment and surrogacy. Live birth outcomes were compared based on female age and number of previous cycles (5 or more vs  $\leq 3$  cycles as control group). A subgroup analysis was done adjusting for age and previous live births using regression analysis. **Results:** A total of 861291 cycles were analysed out of which 800706 cycles were without previous history of livebirths. Age distribution of study sample varied from 18-50 years. Adjusted live birth occurrences were significantly low for the 5 or more IVF cycles group (odds ratio 1.66 (95% confidence interval 1.11-1.21)). The difference in success rate with increasing cycle number was prominent for women less than 40 years whilst for older women the success rate remained static. History of previous live birth increased the odds of having a live birth in higher order cycles (31.6% in 18-34 age group) compared to those without previous live birth (22.1%) (odds ratio 1.64(95% CI 1.50-1.79)). This shows that one in five women in younger age group can achieve a chance of having a baby beyond 5 cycles despite no previous live birth. In older women aged over 40 years, the chance of a live birth was 10% in those with a previous LB vs 6% in those with no previous LB in women undergoing their fifth or higher number of cycles. **Conclusion:** Success of IVF tends to decline with repeated attempts. Maternal age and history of previous livebirths are significant predictors of IVF success. However, despite no previous live births there is still a reasonable chance of success of having a baby beyond five



IVF cycles.

## MESENCHYMAL STEM CELLS AND DECELLULARIZED UTERUS TISSUE PROMOTES REGENERATION AFTER TRANSPLANTATION IN THE RAT BY SKEWING THE IMMUNE RESPONSE TOWARDS A REGENERATIVE STATE

**Edina Sehic**<sup>1</sup>, Mats Brannstrom<sup>1</sup>, Mats Hellstrom<sup>1</sup>  
*Obstetrics and Gynecology, Sahlgrenska Academy, Gothenburg, Sweden*

**Problem statement:** Developing bioengineered grafts for partial uterus repair. The extracellular matrix (ECM) that remains after uterus tissue decellularization has frequently been used as a scaffold for novel treatment applications to repair scarred or defect uterine tissue in rodent studies. The ECM is considered immune privileged due to close homology shared between different species, and a major objective is to also use patient-derived cells to create an immune inert bioengineered graft that stimulates a scar free regeneration and increases the fertility and reduces the risk of uterine rupture. Mesenchymal stem cells (MSCs) have extensively been used for the recellularization of decellularized tissue. However, the mechanisms and their immune modulating effects in this combination has not been examined. Therefore, we investigated the therapeutic role of MSCs for uterine repair when used together with an ECM derived scaffold for four months *in vivo* using the rat model. **Methods:** Previously established rat uterus perfusion protocol was used for the decellularization of the rat uterus. ECM scaffold segments (20x10mm) were recellularized with 1x10<sup>7</sup> green fluorescent protein (GFP) labelled MSCs/cm<sup>2</sup> and the bioengineered constructs were cultured for two weeks *in vitro*. These were then used to replace a naïve uterus segment of equal size, securing the graft by anastomosis in the proximal and distal parts of the naïve uterus tissue, respectively, and by continuous sutures in the naïve perpendicular mesodermal tissue. The grafts were then assessed 14, 30 and 120 days post transplantation, and the infiltrated immune cells were quantified using immunohistochemistry. The systemic levels of immunomodulatory cytokines and chemokines were also quantified in blood plasma three, seven, 15, 30 and 120 days after transplantation. **Results:** MSCs containing grafts contributed to a reduction of CD45+ leukocytes and CD8+ cytotoxic T-cells during the first month after engraftment and contributed to a higher density of pro-regenerative FOXP3+ T-regulatory cells and CD163+ class M2 macrophages. Additionally, recipients of these grafts had higher plasma levels of the anti-inflammatory cytokines IL-10, IL-12 and IL-13. **Conclusion:** MSCs act as an immunotherapeutic cell source together with decellularized uterus tissue and stimulate tissue regeneration after transplantation in the rat model.

## EXPLORING THE EXPERIENCES OF ENGLISH-SPEAKING WOMEN WHO HAVE MOVED TO ISRAEL AND SUBSEQUENTLY USED ISRAELI FERTILITY TREATMENT SERVICES: A QUALITATIVE STUDY

**Lucy Davies**<sup>1</sup>, Gilles de Wildt<sup>1</sup>, Yael Benyamini<sup>2</sup>, Rachel Adams<sup>1</sup>

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**Problem statement:** Israel's pronatalist culture results in a social expectation to have children and drives Israel's high fertility rate of 2.9. Israel's health policy reflects this expectation through funding unlimited fertility treatment for up

to two children. The societal pressure to have children exacerbates challenges of fertility treatment. Furthermore, the lack of financial burden creates a culture of perseverance following treatment failures. Whilst the experiences of Israeli women using fertility treatment have been studied, the experiences of women who migrated to Israel and were therefore raised in a different culture have not. This study aimed to address this gap in knowledge. **Methods:** This was a qualitative study using semi-structured interviews to investigate the experiences of English-speaking women who utilised Israeli state funded fertility treatment. Participants were located across Israel and were recruited using purposive sampling through social media. Data was analysed using framework analysis. **Results:** Since all respondents were Jewish, the population constituted 13 Jewish women. Three themes were identified: 1. Systemic factors: The lack of financial burden was positive, however, participants struggled to navigate the bureaucratic healthcare system, especially when experiencing a language barrier. 2. Influence of others: Encountering a cold bedside manner alongside contending with the cultural expectations of a pronatalist society was challenging. Participants utilised support from other migrants who appreciated the same culture shock. Understanding of healthcare professionals regarding shared religious values further improved treatment experiences. 3. Impact of journey: Participants often withdrew socially and the treatment process implicated upon their lives, jobs and relationships. **Conclusion:** Navigating a bureaucratic system and pronatalist culture are difficulties associated with fertility treatment in Israel. The lack of financial burden and an understanding of religious and cultural beliefs improved treatment experience. Better provision of resources in English and further research into supporting women who are navigating Israel's pronatalist culture is required.

## ASSOCIATION BETWEEN ON-DAY SERUM PROGESTERONE CONCENTRATION AND FROZEN EMBRYO TRANSFER (FET) OUTCOMES

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**Problem statement:** Recent studies suggest that pregnancy outcomes may be negatively affected by low serum progesterone (P) levels the day of FET. The P threshold of 10 ng/mL is the most reported, as it is the currently accepted level for physiological corpus luteal function. **Methods:** A retrospective cohort study comprising all FET between November/2021-July/2022 was performed in a tertiary center. Patients' treatment included estradiol 2mg/8h, starting two weeks after the administration of goserelin in the midluteal phase of the preceding cycle, until the endometrial thickness was adequate. Vaginal progesterone 400 mg/12h was initiated prior to FET according to the embryo development. Patients' P levels were evaluated on the FET day between 8-10 am. Patients who did not collect P on the FET day were excluded. Two different thresholds were considered in assessing the relationship between P levels and FET outcomes (pregnancy rate, miscarriage): (1) 10 ng/ml; (2)



quartiles (Q) - 25th, 50th and 75th percentiles (Q15.37; Q2: 5.37-8.60; Q3: 8.61-12.73; Q4 12.73 ng/mL). **Results:** A total of 145 FETs were performed, 95 of them meeting the inclusion criteria. Patient's mean age was 35 years-old and the main indication for FET was freeze-all cycles. Preferably, one blastocyst was transferred and the mean P level the FET day was 9.35 ng/mL. Considering the P threshold of 10 ng/ml, no significant results were found. By assessing the P levels into Q, statistical results in pregnancy rates were found between them ( $p=0.004$ ). Comparisons between quartiles shown Q1 patients had lower pregnancy rates in contrast to Q2 ( $p=0.001$ , OR 18) and Q4 ( $p=0.003$ , OR 15) patients. By comparing Q1 with the remaining quartiles (Q2+Q3+Q4), Q1 patients had a pregnancy rate of 4% versus 39% in patients with P levels  $\geq 5,37$  ng/mL ( $p=0.002$ , OR 14). **Conclusion:** P levels 5,37 ng/mL were associated with worse pregnancy rates, corresponding to half of the threshold reported in literature. FET protocols differ between centers, which may impact the P levels obtained, suggesting each center should define its own threshold. Further research is also needed to characterize the ideal progesterone supplementation and its role in monitoring artificial cycles.

#### THE INFLUENCE OF MACROPROLACTINEMIA IN HYPERPROLACTINEMIA

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**Problem statement:** The term macroprolactinemia describes a state in which there is a predominance of macroprolactin. This state can be suspected when a patient with hyperprolactinemia lacks typical symptoms such as amenorrhea, galactorrhea and infertility. Macroprolactin is mostly identified as an antigen-antibody complex that has high stability and predominantly consists of monomeric prolactin and immunoglobulin G (IgG). In patients who have predominance of macroprolactin, the typical symptoms of hyperprolactinemia are rarely present. Long-term surveillance of these patients has shown that macroprolactinemia can be a long-lasting condition, since IgG-type antibodies have high capacity and low affinity. Pathogenesis of macroprolactinemia is thought to be an extrapituitary, post-secretory phenomenon of anti-prolactin autoantibodies. Macroprolactin cannot cross the endothelial membrane and reach the receptors in target cells centrally and peripherally, hence there is the typical lack of bioactivity in vivo. Consequently, this condition is mostly asymptomatic. However, a small percentage of patients experience symptoms such as menstrual cycle irregularities and subfertility. **Methods:** This paper is a review article which is based on the selection of relevant articles based on the publication date from PubMed by entering keywords into search box. This review will describe different features of macroprolactinemia, explain pathophysiology of the condition, provide separate approaches in diagnosis and management of these patients and examine the importance of macroprolactinemia in hyperprolactinemia. **Results:** The results have shown that the prevalence of macroprolactinemia was highest in idiopathic hyperprolactinemia (30.56%). In cases with pituitary adenoma, the prevalence of macroprolactinemia was 26.32% and in drug-induced cases the prevalence was 16.67%. **Conclusion:** All serum samples with hyperprolactinemia need to be tested for the presence of

macroprolactin, since macroprolactinemia is an important cause of hyperprolactinemia. Patients with normal levels of free prolactin, in most cases, do not need further evaluation or treatment, due to the fact that macroprolactin has low biological activity. Patients who have elevated levels of free prolactin in their serum should undergo further evaluation, and the exact pathological state should be determined. If needed, dopamine agonists are included in the therapy of macroprolactinemia with the improved symptoms, which further suggest bioactivity of macroprolactin.

**Keywords:** hyperprolactinemia, macroprolactin, macroprolactinemia, prolactin

#### PRONUCLEAR TRANSFER IN WOMAN WITH DIMINISHED OVARIAN RESERVE: DOES PNT IMPACT EMBRYO EUPLOIDY?

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**Problem statement:** A significant decrease has been determined in the quantity and quality of oocytes in women with a diminished ovarian reserve. These patients mostly tend towards egg donation. Germline nuclear transfer may positively affect embryo quality and embryo development in these patients. In this way, these patients have the chance to maintain their genetic generation. Another problem in these patients is the high aneuploidy rates of developing embryos due to advanced maternal age. Since germline nuclear transfer affects the morphokinetic development of embryos, it may also have a positive effect on the genetic self-repair mechanism in the embryo. In general, the nuclear transfer technique has a direct effect on the total number of usable embryos. **Methods:** In our study, 29 patients with a mean age of 39.4 years and diminished ovarian reserve, who previously had 5 IVF/ICSI attempts or more and for whom no blastocyst or euploid blastocyst could be obtained before, underwent nuclear transfer from eggs that were taken from a fertility-proven oocyte donor and fertilized with the same patient's sperm after fertilization at the zygote stage. During the procedure, single-step cell culture mediums were concentrated with Cytochalasin B and Nocodazole, and the nuclear transfer was carried out in these solutions. HVJ-E transfection reagent was used in the fusion stage of nuclei. After the procedure, blastocyst development was observed using the same culture medium and incubator, and PGT-A was performed on the embryos. **Results:** While the patients included in the study had mean oocyte number of 4.7, they achieved a fertilization rate of 87.59%, a blastocyst rate of 49.16%, and a post-PGT-A euploid blastocyst rate of 69.4%. The initial nuclear transfer clinical pregnancy rate was determined as 48.2% in the patient group. While the patient group achieved 8 live births, there are 7 ongoing pregnancies. **Conclusion:** Diminished ovarian reserve also affects oocyte quality and fertilization rate. As the decrease in mitochondrial activity associated with advanced age affects the morphokinetic development of the embryo, the rate of oocyte-related aneuploidy is increased. The data obtained after nuclear transfer show a significant increase in blastocyst rate and the post-PGT-A blastocyst rate.

#### FALLOPIAN TUBE PATENCY DIAGNOSED BY LAPAROSCOPIC CHROMOPERTUBATION IN INFERTILE WOMEN WITH ENDOMETRIOSIS: A RETROSPECTIVE COHORT STUDY ABOUT THE INFLUENCE OF ENDOMETRIOSIS STAGES AND INCIDENTAL ENDOMETRIOSIS



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**Problem statement:** Endometriosis seems to have a strong negative effect on female fertility. The exact pathomechanism is not yet fully understood. In particular, the impact of endometriosis on tubal patency remains poorly studied. With this study, we aimed to assess the rate of tubal occlusion diagnosed via laparoscopic chromopertubation in infertile women with endometriosis and compare the results to infertile women without endometriosis. **Methods:** In this retrospective cohort study, conducted at the Medical University of Vienna, 275 infertile women with endometriosis and 49 infertile women without endometriosis undergoing diagnostic laparoscopy for primary or secondary infertility with chromopertubation between January 2012 and December 2020 have been investigated. All women with laparoscopically and histologically confirmed endometriosis of any stage were eligible for inclusion. For the control group, all women undergoing the same surgical procedure without endometriosis but with at least one laparoscopically and histologically confirmed follicular ovarian cyst, were included.

**Results:** During the laparoscopic assessment of tubal patency, significantly more fallopian tubes were occluded in the endometriosis group compared to the control group (25.8 versus 15.3%;  $p = .029$ ). Unilateral and bilateral occlusion was found significantly more often in patients with endometriosis ( $p = .021$ ). In the multivariate analysis, only the rASRM stage showed a significant association with bilateral occlusion (OR 1.400, 95%CI: 1.018–1.926;  $p = .038$ ). Both, a higher rASRM stage (OR 2.181, 95%CI: 1.191–3.995;  $p = .012$ ) and secondary infertility (OR 1.514, 95%CI: 1.156–1.983;  $p = .003$ ) were associated with an increased risk for any kind of fallopian tube occlusion. **Conclusion:** In conclusion, in infertile women, endometriosis seems to be associated with an increased risk for fallopian tube occlusion. While the prevalence of bilateral tubal occlusion is surprisingly high in patients with minimal or mild endometriosis, it appears to be significantly higher in women with moderate and severe endometriosis.

**Conflict of interest:** All authors declare that there is no conflict of interest related to this work.

#### DOES SERUM AMH LEVEL AFFECT THE INCIDENCE OF MULTINUCLEAR EMBRYOS IN ICSI CYCLES?

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**Problem statement:** The relationship between serum AMH (Anti-mullerian hormone) levels and the appearance of a multinuclear embryo (MLN) in the results of 888 ICSI (Intracytoplasmic sperm injection) cycles of patients between ages of 19-45 who applied to ART (Assisted reproductive technology) Clinic were analyzed retrospectively. Cycles with at least one MLN embryo were defined as the study group ( $n = 237$ ), cycles without MLN as the control group ( $n = 651$ ). Clinic and laboratory parameters were evaluated. Univariate and multivariate logistic regression analyses were used to determine the risk factors affecting the dependent qualitative variable. Statistical significance level was taken as 0.05. **Results:** Mean age of the patients were  $32,22 \pm 5,29$ . AMH levels (ng/ml) of the

patients were categorized as follows; AMH5 were 12,0% ( $n = 107$ ). Effect of AMH on MLN was found to be a significant risk factor ( $p < 0,001$ ). One unit increase of AMH increases the risk of MLN existence by 1,12 times. According to univariate logistic regression analysis; the variables of AMH, female age, a+b motile sperm%, Kruger criteria, FSH, AFC, mean oocyte number, mature oocyte ratio and denudation time were found to be significant risk factors. According to multivariate logistic regression results; mean oocyte number, mature oocyte ratio and denudation time were found to be significant together. The mean MLN embryo/total embryo ratio was  $34 \pm 0,18$  in the group with clinical pregnancy, while the mean MLN embryo/total embryo ratio was  $47 \pm 0,3$  in the group without clinical pregnancy ( $p = 0,010$ ). **Conclusion:** Multinucleation is defined as a blastomer containing more than one nucleus and the presence of MLN in the embryo has been associated with poor embryo development and ART results, the exact mechanism of MLN has not been discovered yet. Parameters that can predict MLN embryo formation before treatment are very important for pregnancy rate. According to our result, it has been determined that serum AMH level can be used as a predictive marker for MLN embryo. The present study is the first study to describe the relationship between serum AMH value and the appearance of MLN embryos.

#### DO MALE STRESS BIOMARKERS TRANSMITTED INTO FEMALE REPRODUCTIVE TRACT BY SEMINAL PLASMA IMPACT ON ICSI OUTCOMES?

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It is considered that transmission of seminal plasma (SP) into female reproductive tract can be useful to increase the efficiency of artificial reproductive technologies. However, it is not taken into account that the male stress patterns, which span from potentially adaptive to maladaptive neuroimmunoendocrine reactions, may affect the composition of SP. Activation of central and peripheral nervous mechanisms being short-time adaptive physiological stress, is involved in all successive steps of realization of male sexual function culminating at orgasm and ejaculation. Chronic background stress may dysregulate a well-balanced action of the neuroendocrine and immune systems at coitus or masturbation. The objective of this pilot prospective observational study was to determine whether the activity of three systems closely implicated in male stress functioning (i.e., sympathetic nervous system [SNS], hypothalamic-pituitary-adrenal [HPA] axis and immune system) related to seminal markers and pregnancy establishment in women exposed to their partners' SP on the day of ovum pick-up (Day-OPU) in the intracytoplasmic sperm injection (ICSI) cycle. The study included 20 couples with tubal infertility, control group of healthy men ( $n = 10$ ), and fertile sperm donors ( $n = 5$ ). Blood serum, saliva and SP were collected from male partners on the day of ovum pick-up for assessment of surrogate markers of SNS activity (i.e., epinephrine, norepinephrine, dopamine and alpha-amylase), HPA axis activity (i.e., cortisol) and proinflammatory interleukin-18 levels. Retrospective analysis of stored samples from ICSI failure group ( $n = 11$ ), ICSI success group ( $n = 9$ ), and control groups was performed. SNS of HPA axis activation at masturbation was revealed in fertile sperm donors and in ICSI



success groups. Overactivation of SNS, reduction of HPA axis reactivity and signs of the inflammatory response were revealed in ICSI failure group. Stress reactions manifested by immunohormonal composition of SP. Receiver operating characteristic analysis showed that the seminal cortisol, norepinephrine and norepinephrine/cortisol ratio are good predictors of pregnancy establishment (AUC of 0.789, 0.848 and 0.867, respectively). The study results allow us to suggest that seminal stress-related patterns specify positive and negative impact of SP on pregnancy establishment, but more studies are necessary to understand the causative relationship between seminal factors and ICSI outcomes.

## ORAL PRESENTATIONS 2: GYNECOLOGY

### FEMTECH MEET BIOTECH: THE USE OF MACHINE LEARNING TO ENABLE PREDICTIVE ALGORITHMS FOR REPRODUCTIVE AND GYNAECOLOGICAL CONDITIONS THROUGH DIGITAL DIAGNOSTICS AND AT-HOME HORMONE TESTING.

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**Problem Statement:** A healthy reproductive cycle, leading to a successful pregnancy requires a complex calculus of ovulatory, menstrual, lifestyle factors and hormone levels. While there are some known associated symptoms with the diagnosis of common gynaecological pathologies and reproductive conditions, their biological relevance and pathophysiology are not well understood. The majority of symptoms are highly pervasive yet varied among individuals. The resulting difficulty in interpreting relevant combinations of symptoms and menstrual patterns can lead to delays in diagnosis and referrals for secondary care or fertility treatment. **Methods:** A virtual health assessment containing 1500 variables and risk factors for reproductive pathologies was created to assess relevant biometrics regarding health, such as age, BMI, medical history, symptoms, menstrual cycle patterns, exercise frequency and ethnic background. Internally embedded algorithms enabled weighted signposting for potential diagnoses based on current clinical diagnostic criteria and international guidelines for 9 reproductive pathologies. Tailored endocrinology panels were created for a given suspected diagnosis to enable further confirmation. Upon completion of capillary blood tests analysing a varied selection of endocrine markers, including AMH, FSH, LH, Oestradiol, Prolactin, TSH, FT4, Testosterone, SHBG, PRG, Anti-TPO, TG, FT3, 54,000 variables of outcomes were created. **Results:** A supervised machine learning approach was applied to a database of 4311 women who completed both the virtual health assessment and blood test. This algorithm was trained to select for data where the pathology of interest was chosen a priori. Algorithmic development using a bottom-up approach starting with simplest model structures first ensured a computationally efficient search of model space for the prediction of pathologies. At each stage of development, the best models represented an abstraction of the data available, which could be meaningfully communicated to our clinicians. The combination of algorithms applied to data regarding tests can detect (at present) 9 of the most common benign gynaecological pathologies. **Conclusion:** The combination of four disciplines: endocrinology, reproductive science, clinical gynaecology and machine learning can leverage data to create digital biomarkers. Disruptive technologies in

consumer health landscapes have the potential to harness diverse, stratified and population-wide data points that can inform the prediction of diagnoses and fertility outcomes.

### THE IMPACT OF BODY MASS INDEX AND LIFESTYLE FACTORS ON SERUM CONCENTRATIONS OF REPRODUCTIVE AND THYROID HORMONES IN PREMENOPAUSAL WOMEN

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**Problem Statement:** The impact of BMI, exercise, smoking, drug and alcohol use on reproductive and thyroid hormones has little or conflicting evidence. We therefore aimed to investigate the association between these factors and serum hormone concentrations. **Methods:** Capillary blood samples were taken from 932 eumenorrheic Hertility Health users on menstrual cycle day 3 between Sept 2020 and June 2022. Serum concentrations of Anti-Müllerian hormone, Estradiol (E2), Luteinising Hormone (LH), Follicle-Stimulating Hormone, free Thyroxine, Thyroid-Stimulating Hormone (TSH) and Prolactin (PrI) were measured via chemiluminescence immunoassay. Women self-reported their height, weight, exercise frequency, weekly alcohol consumption, recreational drug use and smoking status. Women with PCOS or premature ovarian insufficiency were excluded from analysis. Following stratification into two age groups (18-30 and 31-40), data was log-transformed and the Pearson correlation coefficient (r) between pairs of variables was calculated; p values 0.05 were considered statistically significant. **Results:** In 18-30 year olds, BMI negatively correlated with E2 (r=-0.13, p=0.02, n=308) and LH (r=-0.24, p0.01, n=306) and positively correlated with TSH (r=0.12, p=0.04, n=292). Exercise frequency positively correlated with LH (r=0.16, p=0.02, n=201) and drug use negatively correlated with PrI (r=-0.2, p=0.02, n=151). In 31-40 year olds, BMI negatively correlated with E2 (r=-0.11, p0.01, n=548), LH (r=-0.20, p0.01, n=545) and PrI (r=-0.12, p=0.03, n=352). **Conclusion:** These data suggest BMI has a weak but significant negative association with reproductive hormones and a weak positive association with TSH. Exercise frequency and drug use have a small positive association with reproductive hormones, whilst alcohol consumption and smoking status did not appear to have a significant impact. Further investigation into these associations is necessary.

### ROLE OF VASCULAR ENDOTHELIAL CELL GROWTH FACTOR ON PATHOPHYSIOLOGY OF UTERINE ADENOMYOSIS

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**Problem statement:** Uterine adenomyosis is defined as the presence of ectopic endometrial tissue in the myometrium of the uterus and is a known cause of chronic pelvic pain, heavy menstrual bleeding and subfertility. However, its pathogenesis is not completely established. Several reports have suggested that vascular endothelial cell growth factor (VEGF) may be associated with the progression of adenomyosis. **Methods:** We analyzed 22 premenopausal patients with a focal type uterine adenomyosis who received an adenomyomectomy between December 2019 and April 2020 at our hospital. During these surgeries, samples were obtained from the uterus of each patient that included the



adenomyosis lesion, the myometrium without adenomyosis, and endometrial tissue. Immunohistochemistry stain of VEGF and RT-PCR of VEGF expression was compared in each three points of the uterus. And microvascular density in the adenomyosis lesion between the ectopic endometrial gland and myometrial stroma. **Results:** VEGF expression was found to be increased in adenomyotic lesions and myometrium compared to the eutopic endometrium (p0.0001). In addition, RT-PCR indicated higher VEGF expression in the myometrial and adenomyosis tissues than in the eutopic endometrium (p0.05). Microvascular density (MVD) measurements in each patient between the eutopic endometrium with an endometrial component and stroma in the adenomyosis tissue indicated a significant increase in the stroma comprising the myometrium (p=0.02). **Conclusions:** VEGF contributes to the progression of uterine adenomyosis and may be more strongly activated in the stromal component of the myometrium than in the endometrial (eutopic or ectopic) compartment of the adenomyosis in the same uterus. This suggests that VEGF plays a significant role in the muscular component of the endometrium during the progression of adenomyosis.

#### NOVEL TECHNIQUE OF VAGINOPLASTY DEVELOPING NORMAL VAGINA, ROLE OF STEMNESS MARKERS AND TRANSLATIONAL GENES

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**Aims and Objectives:** To study development of neo-vagina by metaplastic conversion of peritoneum, To identify translational Stemness markers using NANOG/OCT4/SOX2 from serial neo-vaginal mRNA, cDNA and to study role of WNT and HOXA genes in patients undergoing vaginoplasty. **Material and Methods:** 75 MRKH Syndrome women underwent laparoscopic peritoneal vaginoplasty (LPV). Two patients underwent serial neo-vaginal biopsies on day 0, 7-9, 12-14, 21 and 33. Fifteen MRKHs and twelve controls were subjected for neo-vaginal biopsy to detect genes upregulation. Remaining patients were evaluated anatomically and functionally. Results: The translational stemness markers NANOG, OCT4 and SOX2 responsible for neo-vaginal formation were identified. Their appearance, concentration at different stages of conversion were demonstrated. The neo-vagina has shown up-regulation of these translational stemness markers. The study demonstrates expression of the specific genes (WNT4, WNT5A and WNT7A) and their role in formation of the neo-vagina. In the subjects stemness markers (NANOG, OCT4 and SOX2) appeared from day 9 to 14 of the neo-vaginal biopsies and after achieving the peak declined later. Genetic analysis showed low values in HOXA 9,10,11,13 and up-regulation of WNT 4A,5A,7 genes in neo-vagina. **Conclusions:** Study shows peritoneal metaplastic conversion to normal vagina. Identified the translational stemness markers and genes responsible. The neo-vagina has shown up-regulation of these genes. The study demonstrates expression of the specific genes (WNT4, WNT5A and WNT7A) and their role in formation of the neo-vagina. Furthering this research, activating these genes may lead to treatment of developmental defects of Mullerian duct, obviating the need of transplant.

**Ongoing Research:** Autologous mesothelial stem cells from Fat programmed to be smooth muscle cells and their use in developing Mullerian structures

**Keywords:** Absent vagina, genetics, Mayer-Rokitansky-Kuster-Hauser, progenitor cell, vaginoplasty

#### SAFETY AND EFFICACY OF AN INNOVATIVE ATRAUMATIC CERVICAL STABILIZER FOR IUD INSERTION: RESULTS FROM A RANDOMIZED, SINGLE BLIND CONTROLLED STUDY

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**Objectives:** The purpose of this study is to evaluate whether Aspivix<sup>TM</sup> cervical vacuum tenaculum can be employed to hold and manipulate the cervix during IUD insertion with a similar efficacy and usability, lower patient reported pain and a superior safety (less bleeding) as known for the comparator single-tooth tenaculum (Pozzi forceps). **Method:** 100 participants (50 per arm) from the outpatient clinic presenting for IUD insertion will be randomized and blinded towards the intervention tool, either Aspivix<sup>TM</sup> cervical vacuum tenaculum or the Pozzi forceps. Tolerability in terms of patients' reported pain and will be recorded on a pain score (100-point VAS) sheet at the following steps of the IUD insertion procedure: Before procedure (Baseline); during speculum placement; Aspivix<sup>TM</sup> vacuum application or at time of placement of tenaculum (control arm); during application of cervical traction when inserting the IUD; During Aspivix<sup>TM</sup> release or removal of the tenaculum (control arm) and 5 minutes after speculum removal. Incidences of tissue lesions will be assessed and compared. All patients will be followed up 3-5 days post IUD insertion with a phone call assessing pain, bleeding and other adverse events. Degree of satisfaction from the procedure will be evaluated. **Results:** Enrollment was completed in February 2022 and preliminary results will be announce for the first time at the European Congress of Contraception & Reproductive Health in May 2022. **Conclusions:** Aspivix<sup>TM</sup> cervical vacuum tenaculum is a new and promising tool which can hold and manipulate the cervix during IUD fitting. This prospective randomized study will evaluate its efficacy, usability and safety profile compared to standard single-tooth tenaculum (Pozzi forceps).

#### NON PHARMACOLOGICAL APPROACH TO AND TREATMENT OF DYSMENORRHEA

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Dysmenorrhea is the medical term by which the pains associated with the menstrual cycle are indicated; According to the WHO, dysmenorrhea affects up to 81% of women and has been detected in 67-90% of women aged between 17 and 24 years. Despite being an underestimated disorder, even by the patients themselves, it is able to severely interfere with the quality of life of those who suffer from it. Hence our choice to try to define an osteopathic approach that can alleviate symptoms, improve the quality of life of patients and reduce the intake of drugs during the menstrual period. The study was conducted on 8 patients, selected by questionnaire and corresponding to pre-established criteria. In the light of the results obtained in osteopathic treatment for the management of symptoms related to dysmenorrhea, good results would seem to be found. In fact, patients reported an overall improvement after the treatments performed expressing positive feedback. The possibility therefore remains open that osteopathy can be a valid support to traditional medical and pharmacological therapies. Considering the limitations that this study presents, due to availability and number of patients,



cadence of menstrual cycles and reduced time frame available for the study itself, more in-depth studies with greater participants are recommended.

### PREVALENCE OF SEXUAL DYSFUNCTION IN WOMEN WITH TYPE 1, 2 DIABETES AND THYROID DISORDER: A CROSS-SECTIONAL STUDY IN TAIF CITY, SAUDI ARABIA

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**Problem statement:** Women with diabetes mellitus or thyroid disorders are at risk of sexual dysfunction. This study aimed to estimate the prevalence of female sexual dysfunction (FSD) in women with diabetes and/or thyroid disorders and the impact of disease control on the Arizona Sexual Experience Scale (ASEX). **Methods:** A cross-sectional study for female patients who had a routine clinic visit were included. The Arizona Sexual Experience Scale (ASEX) was used to evaluate for female sexual dysfunction (FSD). Those with a total score of  $\geq 19$  or scored  $\geq 5$  on any item or  $\geq 4$  on three items were considered to have FSD. **Results:** A total of 253 female patients with a mean age of  $39.1 \pm 7.3$  years were included. Two-thirds of the participants have no FSD. More than half (57.7%) of the participants had a strong desire for sex, and about 20% of the participants were unsatisfied with their orgasm. Compared to those with no FSD, those with FSD had lower body mass index (BMI) ( $P = 0.375$ ), more likely to have a master's degree or higher ( $P = 0.117$ ), diabetes ( $P = 0.879$ ), hypothyroidism ( $P = 0.625$ ), diabetes-related microvascular and macrovascular complications ( $P = 0.049$ ), higher Hemoglobin A1C (HbA1c), fasting glucose, and thyroid stimulating hormone (TSH) ( $P = 0.731$ ,  $P = 0.161$ , and  $P = 0.561$ , respectively), lower total cholesterol and Low density lipoprotein (LDL) ( $P = 0.368$  and  $P = 0.339$ , respectively), and exercise more regularly ( $P = 0.929$ ). **Conclusion:** One-third (32.5%) of the study participants had a FSD. Those with type 1 diabetes had the highest ASEX scores. We detected non-significant negative correlations between total ASEX score and both body mass index (BMI) and thyroid stimulating hormone (TSH), as well as a non-significant positive correlation between total ASEX score and both HbA1c and fasting glucose value.

The authors have no conflicts of interest to declare.

### A CASE REPORT: ISOLATED TUBAL TORSION

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Isolated tubal torsion is a rare cause of acute abdomen. Hematosalpenx, hydrosalpenx, tubal ligation, pelvic inflammatory disease, paratubal cysts and some ovarian pathologies may cause this clinical picture. It may present with nonspecific findings such as abdominal pain, nausea, vomiting, and fever. In abdominal ultrasonography, there is a long, curved cystic appearance that tapers as it approaches the uterine horn, but this appearance may not always be seen.

A 36-year-old patient was admitted with the complaint of groin pain that started on the left side of the abdomen the day before. On physical examination, defense and rebound were positive. In the transvaginal ultrasonography of the patient endometrial thickness is 8.2mm, right ovary is normal, arteriovenous blood supply is present, in the left adnexal area 45.1x 45.5mm cystic mass was detected which is pre-diagnosed as hemorrhagic cyst or endometrioma and Douglas was empty. Pelvic Doppler ultrasound showed a normal appearance in the right ovary, and an appearance compatible with a 45x50mm endometrioma in the left ovary whose vascularization could not be evaluated clearly was observed. The patient was taken to emergency surgery with a preliminary diagnosis of tubal torsion. In the exploration of the patient who underwent diagnostic laparoscopy the uterus was normal, the left tube was edematous and torsioned, and a 5 cm hemorrhagic cyst was observed in the left ovary. Left salpingectomy was performed. The cyst in the left ovary was dissected, its contents aspirated. Isolated tubal torsion is a rare condition in patients with acute abdominal and pelvic pain. While it may come with complaints such as decreasing and increasing pain, nausea and vomiting seen in ovarian torsion, continuous pain and acute abdomen may occur. A dilated tube with the appearance of a normal ovary and a curved tube showing the sign of a vortex is crucial in the preoperative radiological diagnosis of isolated tubal torsion. Salpingectomy may be necessary in late diagnosed cases because of the common irreversible vascular damage. In order to avoid salpingectomy, early diagnosis and early surgery decision are important to apply just the detorsion of tuba.

### VAGINAL NATURAL ORIFICE TRANSLUMINAL ENDOSCOPIC SURGERY (VNOTES) IN A MORBIDLY OBESE PATIENT WITH ENDOMETRIAL HYPERPLASIA WITH ATYPIA

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Obesity is associated with several comorbidities affecting gynecologic health and has an impact on surgical outcomes. Gynecologic surgery in women with morbid obesity is technically challenging when done through abdominal approach and is associated with longer operative time, greater blood loss, and increased risk for surgical site infection, venous thromboembolism and wound dehiscence. Vaginal natural orifice transendoscopic surgery (vNOTES) is a novel procedure whereby access to the peritoneal cavity is through the vagina. It avoids disruption of muscles and fascia and eliminates the risk for trocar-related complications such as wound infection, bleeding and hernia. It also overcomes the limitation of vaginal surgery, such as limited visualization and difficulty in performing adnexectomy. It offers a safe and effective alternative to laparoscopy or laparotomy, especially in patients with obesity. vNOTES offers a shorter operating time, shorter hospital stay and lesser postoperative pain. We report a case of a 32-year old gravida 2 para 2 (2-0-0-2), morbidly obese Filipino woman with a BMI of 52, who underwent vNOTES hysterectomy with bilateral salpingectomy and bilateral uterosacral fixation after medical management for endometrial hyperplasia with atypia. She had an unremarkable postoperative course, and was discharged improved. vNOTES is a safe and effective approach for patients with morbid obesity requiring gynecologic surgery.





## A RARE MULLERIAN ANOMALY WITH ONE VAGINA, DOUBLE CERVIX, BICORNUATE UTERUS AND RUDIMENTARY HORN

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**Introduction:** The prevalence of mullerian duct anomalies in the general population has been reported as 0.1% to 3.8%. As most congenital anomalies are either asymptomatic or have nonspecific symptoms, majority of them are detected incidentally. Hence, its prevalence is likely underestimated.

**Background:** A 51-year-old patient with two weeks history of postmenopausal bleeding was referred to outpatient hysteroscopy clinic. She was on HRT and was up to date with cervical smear. She had an early miscarriage and a termination of pregnancy for social reasons. She was generally fit and well. **Presentation:** On examination, vulva and vagina were normal; however, she seemed to have two cervix and there was ongoing bleeding from one of them. An MRI pelvis was arranged to ensure there were no congenital malformations. MRI scan did not show any abnormality apart from a distorted cavity with fibroids and endometrial thickness of 5.1mm. She underwent diagnostic hysteroscopy and biopsy. Findings were confirmed that she had two cervixes. The cervix on the right connected to rudimentary uterine horn and other on the left was connected to the endometrial cavity of the bicornuate uterus. Both cervixes were stenosed and active bleeding was noted from both of them. The right side of the bicornuate uterus had a fibroid polyp whereas the left had smooth endometrium. The procedure was challenging. MyoSure was performed with partial removal of fibroid. Endometrial biopsies were taken from rudimentary horn and bicornuate uterus and sent for urgent histology, which was reported normal. Some of the specimens were inadequate for diagnosis which were from rudimentary horn. However, due to continuous uterine bleeding, she had total abdominal hysterectomy and bilateral salpingo-oophorectomy later on, of which the histology showed leiomyoma and adenomyosis.

**Conclusion:** Rare anomalies present diagnostic and therapeutic challenge in addition to those encountered with the more common mullerian anomalies. Evaluation of the internal and external contours plays a key role in making a diagnosis and correctly classifying a uterine anomaly. Traditionally MRI has been considered the means of diagnosing congenital uterine anomalies with accuracy of up to 100% but occasionally MRI can also mislead.

## LAPAROSCOPIC ADENOMYOMECTOMY IN THE SINGLE UTERUS OF THE UTERUS DIDELPHYS

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**Problem statement:** A 31-year-old primipara woman with dysmenorrhea and hypermenorrhea and a known history of uterus didelphys and left kidney agenesis was referred to our hospital. Ultrasonography revealed adenomyosis in the right uterus. She had a plan to have another child and wanted to preserve fertility. **Methods:** Laparoscopic adenomyomectomy was performed in the right uterus with conservation of the original structure of uterus didelphys. Transient occlusion of uterine artery (TOUA) was employed in the right uterine artery, which inhibited the circulation to the right uterus. A horizontal incision was made on the fundus to reveal the endometrium. Using a hook-shaped monopolar electrode, wedge resection of the right side uterus which has adenomyosis was performed to reduce the size of the uterus

and ease the procedure of uteroplasty. After that, the adenomyotic lesion between the endometrial side to the serosa was more deeply excised for further complete excision. For reconstruction of the uterus, it was sutured layer by layer with continuous barbed suture.(Figure) Excised adenomyotic lesion was removed by using the port site. **Results:** The incised adenomyosis lesion weighed 20 g, operative time was 55 min, and estimated blood loss was 50 mL. After 5-day hospitalization, the patient was discharged without any notable complications. After 7 months of the surgery, symptoms, and adenomyoma on ultrasonography were improved. **Conclusion:** To the best of our knowledge, this is the first report of laparoscopic adenomyomectomy surgery performed on a patient with uterus didelphys. The patient was discharged without major complications after the operation, and improvement in symptoms has been maintained since the past 13 months after the operation. Although it would be necessary to monitor subsequent pregnancy and delivery in the present patient, it is proposed that laparoscopic adenomyomectomy can be considered as a feasible treatment option for patients with uterus didelphys who want to preserve fertility with through sufficient explanation and consultation.

**Disclosure Statement:** All authors declare that they have no conflicts of interest or conflicting financial ties.



## RARE PRESENTATION OF GENITAL TB IN ADOLESCENT GIRL AS PRIMARY AMENORRHEA WITH PYOCOLPOS

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**Problem Statement:** Genital tuberculosis is the most mysterious form of Extrapulmonary tuberculosis represents 15-20% of EPTB. The spread is generally through haematogenous or lymphatic routes. **Case Report:** 14 year old female presented with severe pain abdomen in outpatient department of our hospital. Pain was insidious in onset and aggravated one week back. History revealed she had primary amenorrhea. In family, father had history of pulmonary Tuberculosis. On examination general condition fair, GPE normal. Abdomen was soft and there was no distension. A pelvic mass of 20 weeks size midline cystic with restricted mobility was present in pelvis. Vulval inspection revealed. Per vagina - thick vaginal septum present. Per rectal examination revealed bulging of posterior vaginal wall into the rectum. USG showed vagina appears distended with fluid containing fine internal echoes collection measuring 15.8x8.8x10.6 cm approximately. Uterus is pushed up and is seen lying at the level of umbilicus and bilateral adnexa and ovaries are normal. Fluid containing fine echoes is seen distending vaginal cavity s/o hydrocolpos. Routine investigations were normal limits. The girl was planned for drainage in view of Imperforate hymen with hydrocolpos. Under anaesthesia when a small incision was given over the intact hymen. About 700ml -800 ml pus drained out. It was



sent for gram staining, AFB smear-culture and CBNAAT. Z-N stain of the pus showed plenty of Acid-Fast Bacilli. CBNAAT showed tubercle bacilli. Antitubercular therapy started, and follow-up is continuing. **Discussion:** This case is unique and interesting

- the age of presentation makes it a rare one
- the clinical picture was such that one will be tempted to diagnose as hematocolpos leading to primary amenorrhea

Only two cases reported near same presentation in extreme age group. MRI should be used as investigation of choice to differentiate it from other causes of primary amenorrhea. CBNAAT is very quick for testing and can detect rifampicin resistance within 2 h with 100% specificity. **Conclusion:** The clinicians should always keep Female Genital Tuberculosis in mind and should take detailed history, careful examination and perform appropriate investigations to reach to a diagnosis.

### ORAL PRESENTATIONS 3: FETOMATERNAL MEDICINE

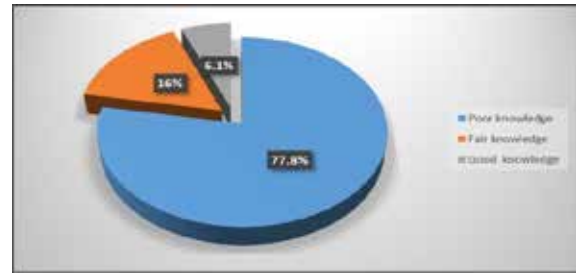
#### ASSESSMENT OF FEMALES' AWARENESS ABOUT GESTATIONAL DIABETES MELLITUS IN JEDDAH, SAUDI ARABIA - A CROSS-SECTIONAL STUDY

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**Problem statement:** Gestational diabetes mellitus (GDM) is one of the most prevalent issues that affects the health of pregnant mothers and their fetuses. Despite the fact that the frequency of GDM in Saudi Arabia is rapidly increasing, the level of knowledge of GDM and its neonatal and maternal complications among females in Jeddah remains unknown. This study aimed to assess the awareness about GDM among married females in Jeddah, Saudi Arabia. **Methods:** A cross-sectional study was done on all women in reproductive age and an electronic questionnaire was used. Data about participants' demographics, parity, body mass index (BMI), pregnancy, family and personal history of chronic diseases, gestational diabetes were collected. Their knowledge about effect of gestational diabetes on mother and on neonatal outcomes and their source of information about GDM were assessed. Level of knowledge about GDM was reported as good knowledge if the study participant correctly responded to more than or equal to 75% of knowledge assessment tools, fair if responded to 50%–75% and poor for 50%. **Results:** The mean age of the participants was 37.99 ± 9.44 years and 77.8% of them had poor knowledge about GDM and 6.1% had good knowledge. Multipara women with a university education had a significantly higher mean knowledge level and the most common source of participants' knowledge about GDM was social media. **Conclusion:** Females' knowledge about GDM was significantly low in Jeddah. Health education campaigns and mass media education are urgent to increase their awareness about GDM. Health care practitioners should focus on popularizing GDM and raising awareness of its consequences.



#### THE PREVALENCE AND IN-DEPTH ANALYSIS OF MATERNAL MORTALITY IN THE TERTIARY HOSPITAL IN SOUTHERN THAILAND: A 16-YEAR EXPERIENCE

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**Problem statement:** Maternal mortality reviewing system has been suggested as a fundamental approach to improve the quality of maternal care and reduce maternal death. This study aimed to evaluate the prevalence, causes and in-depth analysis of maternal mortality. **Methods:** A retrospective study was conducted. Medical records of all women, who died during pregnancy or within 42 days of termination of pregnancy, from 1 January 2006 to 31 December 2021, in Songklanagarind Hospital, were reviewed. **Results:** There were 51,910 live births, 71 pregnancy-related deaths, and 67 maternal deaths. The maternal mortality ratio (MMR) was 129.1 per 100,000 live births. The maternal deaths included 31 (46.3%) direct maternal deaths and 36 (53.7%) indirect maternal deaths. The leading causes of death were cardiac disease (17/67), hypertensive disorders in pregnancy (9/67), and postpartum hemorrhage (7/67). The most common direct causes of maternal death were hypertensive disorders in pregnancy (29.0%), postpartum hemorrhage (22.6%), and amniotic fluid embolism (19.4%). The most common indirect causes of maternal death were cardiac disease (47.2%), hematologic disease (13.9%), and dengue hemorrhagic fever (13.9%). The median (min-max) maternal age was 29 (15-44) years. Of 67 maternal deaths, 91.0% were referred from community and provincial hospitals, 59.7% occurred at 32 to 40 weeks of gestation, 28.4% had pre-existing diseases, and 20.9% had cardiopulmonary arrest before arrival. Among 17 women with cardiac disease, 9 (52.9%) were WHO class III-IV. **Conclusions:** The MMR was high and the three leading causes of maternal death were cardiac disease, hypertensive disorders in pregnancy and postpartum hemorrhage.

#### SPLenic ARTERY ANEURYSMS IN PREGNANCY: A SYSTEMATIC REVIEW

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**Problem Statement:** Splenic artery aneurysms (SAA) are rare phenomena strongly associated with pregnancy. However, there is no consensus on managing either asymptomatic or ruptured SAA in pregnancy. This systematic



review aimed to explore the presentations, investigations, management modalities and mortality of SAA in pregnancy to inform optimal SAA management. **Methods:** MEDLINE, EMBASE and Scopus were screened from January 2000 to October 2020 for case reports and series describing SAA in pregnancy until 6 weeks postpartum. IBM SPSS Statistics Version 27 was used for statistical analysis, and reverse power calculations were completed on each data subset. **Results:** 84 cases were identified, 75 (89.3%) of which described SAA rupture. The average maternal age was 31.1±5.2 years. 47 (64.4%) women were multiparous and significantly older ( $p=0.001$ ). Ruptured SAA presented significantly later ( $p=0.032$ ) at an average gestation of 31.3±7.8 weeks compared to 24.8±9.9 weeks for unruptured SAA. The commonest presentations were abdominal pain (58.7%), collapse and hypovolemic shock, nausea and vomiting, and shoulder-tip pain. 11 (14.7%) cases reported the double-rupture phenomenon of initially contained blood loss in the lesser omental sac. In ruptured SAA, 49 (67.1%) women underwent preoperative imaging, predominantly transabdominal ultrasound (93.9%). Those presenting with abdominal pain were more likely to have had imaging ( $p=0.034$ ). 61 (81.3%) ruptured SAA were managed surgically via emergency laparotomy. Only 3 (5.0%) women did not undergo concurrent delivery. Aneurysm size was not associated with likelihood of rupture. In unruptured SAA, 5 (55.6%) were diagnosed incidentally. Management of unruptured SAA ranged from surgical (5, 55.6%) and endovascular repair (3, 33.3%) to conservative until postpartum (1, 11.1%). All unruptured SAA were non-fatal, unlike ruptured SAA, which was associated with 25.7% and 50.0% maternal and foetal mortality respectively. **Conclusion:** This review provided an updated summary on SAA in pregnancy, corroborating that SAA rupture is commoner in multiparous women, at later gestations, typically presents with abdominal pain, is largely diagnosed via ultrasound and managed operatively. Notably, maternal and foetal mortality was lower than previous reports of 75% and 95%. Given its rare and unpredictable nature, we propose the following algorithm to aid obstetricians in prompt diagnosis and management of SAA.

#### PERFORMANCE OF FETAL ULTRASOUND AND MAGNETIC RESONANCE IMAGING IN PREDICTING BIRTHWEIGHT ACCORDING TO THE TEST-TO-DELIVERY INTERVAL

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**Problem statement:** The estimation of fetal weight (EFW) by fetal magnetic resonance imaging (MRI) is a promising tool for birth weight (BW) prediction. Nevertheless, influencing factors that could modify its performance have not been studied yet. The purpose of this study was to test the influence of the test-to-delivery interval (TDI) on the performance of US and MRI.

**Methods:** This was a secondary analysis of a prospective, single-center, blinded cohort study that compared MRI and US for the prediction of macrosomia in singleton pregnancies (PREMACRO study). Patients older than 18 and having an estimated due date based on the first trimester US were included. Exclusion criteria were: unconscious or severely ill women, multiple pregnancy, major fetal abnormality, preterm labor, preterm rupture of membranes, neonatal weight measured 6 hours after birth, failure to complete the imaging

examination, intrauterine fetal demise, and loss of follow-up. Included patients underwent US and MRI for EFW between 36+0/7 and 36+6/7 weeks of gestation (WG). They were grouped into three groups: TDI 2 weeks (group 1), TDI ≥2 and 4 weeks (group 2), and TDI ≥4 weeks (group 3). The correlation between EFW on US or MRI and BW according to the TDI was examined. Pearson's coefficient of correlation R was calculated. An initial significant p-value was set at 0.05 and it was corrected by Bonferroni correction when indicated. **Results:** 2378 patients were eligible for final analysis: 313 (13.16%) in group 1, 1440 (60.56%) in group 2, and 625 (26.28%) in group 3. There was a strong positive correlation between MRI-EFW and BW percentiles in group 1 ( $R=0.934$ , 95% confidence interval [95%CI]: 0.918-0.947), it dropped significantly but remained strongly positive in groups 2 and 3 ( $p=0.001$ ). In contrast, the correlation between US-EFW and BW percentiles was highly positive only in group 1 and dropped immediately with TDI 2 weeks. **Conclusion:** The performance of MRI in the prediction of BW is maximal when the delivery occurs within two weeks of the examination and it declines slightly beyond this period, in contrast to the performance of US which decreases drastically with time.

**Disclosure of Interests:** none



#### PROPHYLACTIC RADIOLOGIC INTERVENTIONS TO REDUCE POSTPARTUM HEMORRHAGE IN WOMEN WITH PLACENTA ACCRETA SPECTRUM DISORDER: A MULTICENTER COHORT STUDY

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**Problem statement:** Placenta accreta spectrum disorder (PAS) is associated with considerable maternal morbidity and mortality caused by severe postpartum hemorrhage. The role of prophylactic radiologic interventions to reduce blood loss in these women is controversial. We aimed to quantify the association of prophylactic radiologic interventions with total blood loss in women at high risk of PAS with or without ultrasonographic signs of PAS. **Methods:** We conducted a retrospective cohort study of women at high risk of PAS with or without abnormal ultrasonography who underwent planned cesarean section in 69 Dutch hospitals between 2008 and 2013. Women were considered to be at high risk of PAS in case of placenta praevia/ low-lying placenta combined with a history of cesarean section(s). We assessed the association of prophylactic radiologic interventions on total blood loss using a regression model. We also assessed associations with maternal mortality and morbidity, the latter defined as:



transfusion requirement, hysterectomy, ICU admission and length of hospital stay. Results were adjusted for placenta percreta(yes/no). **Results:** A total of 350 women with high risk of PAS were included: 61 with abnormal ultrasonography of whom 22 received the prophylactic intervention and 289 with normal ultrasonography of whom 21 received the prophylactic intervention. Women with abnormal ultrasonography without prophylactic intervention(n=39) had a median blood loss of 2500 mL(interquartile range, IQR 1200-5000) vs 1750 mL (IQR 775-4000) in women with the prophylactic intervention(n=22); the difference in total blood loss after correction for confounding was -589 mL(95% CI -979 -+47, p=0.07). Women with normal ultrasonography without prophylactic intervention(n=268) had a median blood loss of 725 mL(IQR 500-1500) vs 1000 mL(IQR 550-1750) in women with prophylactic intervention(n=21). In the group with normal ultrasonography the difference in total blood loss after correction for confounding was negligible(- 98 mL(IQR -224 - +235), p= 0.51). **Conclusion:** Prophylactic radiologic interventions prior to planned cesarean section might be associated with reduced blood loss in women with ultrasonographic signs of PAS. To determine the place of prophylactic radiologic interventions in intrapartum management strategies for women with at high risk of PAS, more research on efficacy and safety is needed.

#### LATE-ONSET FETAL GROWTH RESTRICTION (FGR) – IS IT WORTH ITS DIAGNOSIS?

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**Problem statement:** Fetal growth restriction (FGR) occurs when fetus do not reach their growth potential. In last years, the importance of performing a systematic ultrasound in late 3rd trimester has been discussed in order to identify late-onset FGR and prevent associated adverse neonatal outcomes.1,2. **Methods:** A retrospective study of full-term newborns from singleton pregnancies with birth weight below the 10th percentile (Hadlock curves) during a period of 3 years was performed. The sample was divided into 2 groups: group 1 – undiagnosed FGR; group 2 – diagnosed FGR (late-onset). Maternal, delivery and newborn data were evaluated and compared. Data analysis was performed with SPSS@ 28version; significance was set if p value 0,05. **Results:** A total of 615 pregnant women were included: 453 cases in group 1 and 162 cases in group 2. Groups were similar in their baseline characteristics (maternal age, Body Mass Index, smoking status and presence of hypertensive gestational disease and gestational diabetes). The proportion of spontaneous labor was higher in group 1 (87,4% vs 12,6%  $\chi^2(2)=46,27$ ; p0,001). Mean gestational age at birth was lower in group 2 (t(611)=9,63; p0,001) as well the mean percentile at birth (t(613)=9,92; p0,001). No differences were found between the groups regarding type of labor or early neonatal outcomes (admission to NICU, need for oxygen supply or intubation, Apgar score at 1 and 5 minutes). No differences were found in neonatal outcomes when percentile 3 (n=209) was used as cutoff. **Conclusion:** In our sample, late FGR detection was diagnosed in only 26.3%, demonstrating the diagnostic challenge of late-onset FGR, already described in the literature. As would be expected, when detected, the proportion in labor induction was higher. The diagnosis of FGR often leads to additional monitoring and earlier termination of pregnancy, which is evident in our sample, given that the mean gestational age at birth was significantly lower. Moreover, the birth percentile was significantly lower when FGR was diagnosed. Despite that, immediate neonatal

outcomes were similar between groups, even when establishing the 3rdpercentile as cutoff value. In this way, our data, did not demonstrate the potential advantages of diagnosis of late-onset FGR.

#### MODE OF DELIVERY IN UNCOMPLICATED MONOCHORIONIC DIAMNIOTIC PREGNANCIES AND PERINATAL OUTCOMES: A SINGLE-CENTER RETROSPECTIVE COHORT STUDY

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**Problem statement:** The aim of this article is to assess the effect of mode of delivery on uncomplicated monochorionic diamniotic (MCDA) pregnancies on perinatal morbimortality. **Methods:** A retrospective analysis of all MCDA pregnancies followed in a tertiary hospital during a 10-year period (January 1st, 2012, to December 31st,2021) was performed. Chorionicity and amnionicity were confirmed via first trimester ultrasound when available and placental pathology. The study included pregnancies whose birth occurred between 32.0 and 37.6 weeks of gestation. Fetuses with growth discordance 20% at birth, twin-twin transfusion syndrome, genetic malformations, TAPS or TRAP were excluded. One hundred and one pregnancies were selected out of 167 MCDA pregnancies. Planned vaginal delivery was proposed to all pregnant women with first fetus in vertex presentation and without contraindication to vaginal delivery. Induction of labor was performed at 36-37 weeks of gestation. Primary outcomes included: perinatal mortality, 1 and 5-min APGAR score 5, neonatal intensive care admission, neonatal sepsis, respiratory complications and intraventricular hemorrhage. **Results:** During the study period, 70 women (69,3%) had a planned vaginal birth and 68,6% of those had a vaginal delivery. Successful vaginal delivery rates were similar regardless of induced or spontaneous onset of labor. There was no significant difference on mode of delivery and low APGAR scores, neonatal care admission, neonatal complications or neonatal death. Neonatal intensive care admission was higher in the cesarean group vs vaginal delivery group (Fetus 1 – 35,4% vs 30,8%; Fetus 2 – 35,4% vs 28,8%), as well as respiratory complications on at least one twin (20,4%vs 15,4%). On the other hand, neonatal sepsis (2% vs 7,7%) and ventricular hemorrhage on at least one twin (6,1% vs 7,7%) were more frequent on the vaginal delivery group. There were two cases of mortality (2,0%), one after emergent cesarean section for acute intrapartum transfusion syndrome and one after vaginal delivery at 28 days of life related to multiorgan failure after necrotizing enterocolitis. **Conclusions:** Our results suggest safety of planned vaginal delivery for uncomplicated monochorionic diamniotic gestations with first twin in vertex presentation and over 32 weeks, with low morbimortality and high vaginal delivery rates.

#### PERINATAL AND POSTNATAL OUTCOMES OF MONOAMNIOTIC MONOCHORIONIC TWIN GESTATION: A 10 YEAR COHORT

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**Problem statement:** Monoamniotic monochorionic (MM) pregnancy occurs in 0,01% of spontaneous pregnancy and represents 1% of twin pregnancies. High perinatal morbimortality has been reported. The aim of this article is to



report perinatal outcomes of this rare condition. **Methods:** A retrospective analysis of all MM pregnancies followed in a tertiary hospital during a 10-year period (January 1st, 2012, to December 31st, 2021) was performed. Chorionicity and amnionicity were confirmed via first trimester ultrasound and placental pathology. Medical files were reviewed for obstetrical and neonatal outcomes. **Results:** There were eleven MM pregnancies. Two cases of thoracopagus twins were terminated at 13-14 weeks and excluded from analysis. Of the remaining nine MM pregnancies there were ten live-births (55,5%). Mean gestational age at birth was 30,52 weeks and mean birth-weight 1361,5g. All twins were born via cesarean section. Planned cesarean section was performed between 32-34 weeks. Cord entanglement was found in 66,7% of cases. One pregnancy was complicated with neonatal death 3 days after spontaneous preterm birth at 24 weeks. Neurodevelopment was normal at 48 months for 8 live-births. Miscarriage occurred in 8 fetuses (44,4%) before viability, with a mean gestational age of 17,5 weeks: 2 cases with cord entanglement, one case of twin anemia-polycythemia sequence and one with amniotic band syndrome with cord compression. **Conclusion:** Monochorionic monoamniotic twins are a high-risk group for perinatal complications and fetal demise. In our cohort surviving twins had normal neurodevelopment and there were no cases of fetal demise during third trimester.

#### MATERNAL OBESITY AND STRESS CAN DIRECTLY AFFECT PREIMPLANTATION EMBRYO DEVELOPMENT

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**Problem statement:** Lifestyle disorders such as obesity and stress are considered contributing factors to the decline in human fertility, and we investigated whether the periconceptional period may be a critical window of exposure. We investigated whether oocytes and preimplantation embryos produce cell receptors capable of binding maternal stress mediators and cytokines released from maternal adipose tissue, and whether activation of these receptors can affect further development. **Methods:** RT-PCR, immunohistochemistry and Western blot analysis were used to study expression of selected cell receptors in oocytes and preimplantation embryos. The mouse model was used for *in vitro* functional studies of identified receptors. Intergenerational mouse obesity model and mouse restraint stress model were used to investigate effects of maternal obesity and stress on preimplantation embryo development *in vivo*. **Results:** We found that mouse oocytes and preimplantation embryos expressed several types of "stress receptors" (adrenergic and glucocorticoid receptors) and their activation *in vitro* significantly impaired early embryo development. In glucocorticoid receptors, we found significant differences between the effects of natural and synthetic agonists. When investigating the effects of adiponectin (a cytokine with paradoxically lower secretion in obese than in non-obese individuals), we found a positive effect of adiponectin receptor activation on mouse pre-implantation embryos *in vitro*, and an effect on glucose uptake was identified as one of the possible mechanisms. Our results suggest that adiponectin maintains the glucose supply for early embryos under hypoinsulinaemic conditions, for

example, in mothers suffering from type 1 diabetes mellitus. Our *in vivo* experiments supported the results of our gene expression studies and *in vitro* analyses, showing significant effects of maternal stress and obesity on early embryonic development and some physiological parameters in adults. **Conclusion:** Our results show that oocytes and preimplantation embryos produce cell receptors capable of binding maternal stress mediators and cytokines released from adipose tissue. Consistent with the Developmental Origins of Health and Disease (DOHAD) hypothesis, our results indicate that exposure to maternal stress or obesity during very early pregnancy can have a negative impact on embryonic development with consequences reaching into postnatal life. Funding: APVV-18-0389, VEGA 2/0092/19, DAAD-SAV, EU COST Action FA1201, GRK 2155 PromoAge.

#### VALUES IN DECISIONS AT THE LIMITS OF VIABILITY – PERSPECTIVES OF PARENTS AND PREMATURELY BORN ADULTS

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**Problem statement:** Decision-making for infants born at the limits of viability is complex and parental values should guide these decisions whether to start palliative comfort care (PCC) or early intensive care (EIC). However, little is known about those values. Compared to the parental perspectives, the perspectives of prematurely born adults themselves have even more scarcely been reported. The two-fold aim was to give an overview of all parental values described in literature (I) and to describe the perspectives of prematurely born adults on what they consider of importance in decision-making at the limits of viability in the context of their experience of life (II). **Methods:** (I) A scoping review was performed with a literature search in 6 databases, including articles when they contained parental perspectives in prenatal decision-making at the limits of viability. Extracted data were discussed with a group of experts (psychologist, gynaecologist, neonatologists and experienced parents of a 24-week born infant). (II) Focus group interviews with prematurely born adults were conducted, recorded, transcribed and analysed by two researchers. Preliminary results were discussed with a group of the participants. **Results:** (I) Twenty-two articles were included. An overview of the themes is recorded in Figure 1. (II) Four focus groups with 5-6 participants each were conducted, born between 240-300 weeks of gestation in the period 1965-2002. Themes derived from the data such as 'quality of life', '(protect against) long term outcomes', 'survive', 'giving a chance' or 'religion' matching results found in the scoping review. Other themes found were 'looking at the infant' or 'uncertainty'. Discussing PCC was considered acceptable. Interviewees indicated there should be more focus on the consequences of preterm birth throughout their entire life, in healthcare, school and care for their parents. **Conclusion:** Multiple values important in decision-making were found. Some of these were open to interpretation. Furthermore, some values seemed result of more explicit/rational deliberation, where others were more intuitive.



The perspective of prematurely born adults has so far been underrepresented in research. Explicitly exploring and elaborating on values important in decision-making may increase understanding and could potentially improve shared decision-making.

### UTILIZATION, PATTERNS, AND ADEQUACY OF ANTENATAL CARE DURING THE COVID-19 PANDEMIC: A CROSS-SECTIONAL SURVEY AMONG FILIPINO WOMEN

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**Problem Statement:** The COVID-19 pandemic resulted in unprecedented challenges to healthcare systems worldwide, including interruption of antenatal care services. This study aims to determine the effects of the pandemic on the utilization of antenatal care of Filipino women. **Methods:** A prospective cross-sectional study was conducted among postpartum women using an online self-administered questionnaire. Women aged 18 to 45 years who delivered in 2021 were recruited. The participants answered a structured questionnaire to assess their access, perceptions, and utilization of antenatal care. Utilization of antenatal care was evaluated using standard measures, including the timing of initiation of antenatal care, number of subsequent visits, and place of consults. Factors affecting the adequacy of antenatal care were determined for each variable through simple logistic regression. **Results:** A total of 318 women were enrolled in the study. All the respondents agreed on the necessity of antenatal care. However, only 46.37% had six or more in-person antenatal visits, with the majority attended to by midwives at community health centers. Most respondents (71.38%) initiated antenatal care during the first trimester. Almost half reported deferral of antenatal visits mainly due to lockdown restrictions, transportation problems, and financial issues. Positive predictors of adequate antenatal care were prior pregnancies, live births, having living children, spousal support, history of obstetric complications, and use of private vehicles. **Conclusions:** Despite an overall positive perception of the necessity of antenatal care, utilization has been inadequate in more than half of the respondents. Various individual, facility, and policy-level factors affected the utilization of services during the pandemic. There is a need to augment antenatal care services in the country by mitigating barriers to access. The public health response should strengthen collaborative efforts with primary-level healthcare to increase service provision, especially to more vulnerable populations.

### CORRELATION OF PRENATAL CARE COMPLIANCE WITH FETAL OUTCOMES IN TERMS OF APGAR SCORE, BIRTH WEIGHT AND PRETERM DELIVERIES AMONG TEENAGE PREGNANCY PATIENTS

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Teenage Pregnancy is currently a cause of concern in the Philippines because of its alarming rising incidence and association with adverse fetal and maternal outcomes. This study aimed to determine the correlation of prenatal care compliance with fetal outcomes in terms of APGAR score, birth weight, preterm deliveries and incidence of non-reassuring fetal status during labor among teenage pregnant patients. Adequate prenatal check-up is defined by the World Health Organization as more than 4 pre-natal check-ups for

non-high risk pregnancies and more than 8 pre-natal check-ups for high-risk pregnancies. This was a retrospective, cohort study that included 150 teenage pregnant patients who consulted at the Perinatology Teen Mom Clinic of the UP-Philippine General Hospital and delivered from January 2017 to December 2019. A comprehensive medical chart review was done. There was a significant relationship between adequate prenatal checkup and 1st minute APGAR score (p-value 0.01) and incidence of preterm deliveries (p-value .002). There was no relationship between adequate prenatal check up and 2nd minute APGAR score (p-value 0.07), birthweight (p-value 0.07) and incidence of non-reassuring fetal status during labor (p-value 0.227). In conclusion, poor pre-natal compliance may be associated with a low 1st minute APGAR score and increased risk of pre-term delivery, but not associated with a low 5th minute APGAR score, increased risk of non-reassuring status during delivery, and increased risk of inappropriate gestational age at birth such as small for gestational age and large for gestational age.

**Keywords:** Teenage pregnancy, prenatal care compliance, APGAR score, birthweight, preterm delivery, non-reassuring fetal status

### VAGINAL BREECH DELIVERY FOLLOWING FAILED EXTERNAL CEPHALIC VERSION - IS IT SAFE?

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**Problem statement:** The present study aimed to determine whether a vaginal breech delivery following failed external cephalic version (Breech-failed-ECV) is associated with an increased risk for adverse maternal and neonatal outcomes. **Methods:** A retrospective study was conducted at a single university-affiliated medical center with approximately 7,000 deliveries per year between 2015-2022. The study group comprised patients who underwent a failed attempt of ECV and underwent a trial of breech delivery. Outcomes were compared to women who had a trial of breech delivery with no ECV trial (breech-no-ECV) and women who underwent a successful ECV and a trial of labor in vertex presentation (ECV-Vertex). The primary outcome was a successful vaginal delivery. Secondary outcomes were pH 7.1, NRFHR, APGAR 5min, NICU admission, meconium, prolapse of cord, placental abruption and PPH. Data were analyzed using Fisher's exact test and chi-squared tests. **Results:** There were a total of 229 patients in the study, 42 patients in the Breech-failed-ECV, 102 in the Breech-no-ECV, and 85 in the ECV-Vertex groups. No clinically significant differences were found regarding parity, gestational age at delivery and birth weight. The two breech groups did not differ in the rate of vaginal delivery (80.9% Breech-failed-ECV, vs. 80.4% Breech-No-ECV). The ECV-Vertex had a statistically significant higher rate of a vaginal delivery (p=0.025). Both Breech groups had a higher rate of cesarean section, meconium, NRFHR, and NICU compared to ECV-Vertex (5.88% Vs 18%, p=0.003; 9.41% Vs 20.8%, p=0.028; 3.5% Vs 12.5, P=0.03; 0% Vs 4.86%, p=0.047). A failed trial of ECV was not associated with an increased rate of adverse maternal and neonatal outcomes compared to the breech-no-ECV group (p0.05). **Conclusions:** A trial of ECV did not affect the rate of a successful vaginal breech delivery or the rate of adverse maternal and neonatal outcomes compared to a vaginal breech delivery without a trial of ECV. As the highest rate of a successful vaginal delivery was achieved following a successful ECV, a trial of ECV can be safely offered to



patients who consider a vaginal breech delivery without affecting obstetrical outcomes.

Maternal and neonatal outcomes

	Successful-ECV-Vertex	Breech-failed-ECV	Breech-no-ECV	P value
Vaginal delivery	91.76%	80.95%	80.39%	0.025
PH<7.1	0%	4.76%	0.98%	0.301
NRFR	3.53%	16.67%	10.78%	0.032
APGAR 5min <7	0%	0%	0%	NA
NICU admission	0%	7.14%	3.92%	0.04
Meconium	9.41%	7.14%	26.47%	0.002
Prolapse of cord	0%	0%	2.94%	0.3
Placental abruption	0%	0%	3.92%	0.141
PPH	4.71%	4.76%	6.86%	0.930

## ORAL PRESENTATIONS 4: INFERTILITY/ART/IVF, DIAGNOSTIC PROCEDURES, OTHER

### INFERTILITY/ART/IVF

#### ETIOLOGICAL FACTORS FOR BIOCHEMICAL PREGNANCY IN INTRACYTOPLASMIC SPERM INJECTION CYCLES

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**Problem statement:** Biochemical pregnancy (BP) is one of the possible outcomes in which assisted reproductive treatments (ART) may end up with. Although several attributable factors have been proposed, exact etiology for biochemical pregnancies after ART has not been revealed. The aim of the study was to investigate possible factors which may be related with occurrence of BP in intracytoplasmic sperm injection (ICSI) cycles. **Methods:** A retrospective single center study was performed on the clinical data of ICSI cycles between January 2018 and June 2022. Only cycles with single embryo transfer were included. Cycles which ended up with negative pregnancy (NP, n=172), clinical pregnancy (CP, n=127), miscarriage (M, n=35) and biochemical pregnancy (BP, n=27) were compared with respect to basal characteristics, ART cycle characteristics, semen quality parameters and laboratory outcomes.

**Results:** A total of 361 cycles who met the inclusion criteria were evaluated. Among the cycles which ended up with BP (n=27), the most common indication was male factor infertility (n=15, 55.5%). Semen volumes were similar between the groups. Sperm concentration was significantly lower in BP group when compared with NP and CP group (Z=2.743; p=0.037 and Z=3.361; p=0.005, respectively). Although reached a borderline p value, total progressive motile sperm percentage was found to be lower (19%) in BP group (X<sup>2</sup>=7.811; p=0.050). Fertilization rate was lower in NP group when compared with CP and M group (Z=4.280; p=0.0001). **Conclusion:** The study suggests that poorer semen quality parameters may be related to higher rates of BP in ICSI cycles.

#### THE DIFFICULT CASES OF ADENOMYOSIS IN WOMEN UNDERGOING IN VITRO FERTILIZATION TREATED WITH LONG PROTOCOL: A CASES SERIES REPORT

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**Problem statement:** Conservative treatment of adenomyosis related unclear. Two options are available for women with adenomyosis associated infertility: surgery or IVF and intracytoplasmic sperm injection (IVF/ICSI). There is currently no established consensus on IVF in adenomyosis patients.

**Methods:** This is a case series of two IVF patients. **Results:** Two patients came to our Fertility Clinic. First patient was a 37-years old POAO with history of adenomyosis resection, myomectomy, bilateral cystectomy endometriosis. She had been married for 1.5 years. Her AMH was 0.84 ng/ml, estradiol 25.14 pg/ml and thromboelastography hypercoagulation. Her husband was teratozoospermic. The patient underwent IVF with long protocol stimulation Buserelin 0.2 mg, FSH 300 IU, LH 75 IU (13x). The patient conceived after fresh embryo transfer and is currently at 6 months of gestation. Second patient was a 30-years old POAO with history of adenomyosis resection (OSADA procedure) and myomectomy two times, left cystectomy endometriosis, bilateral tubes obstruction. She had been married for 6 years. Her AMH was 1.48 ng/ml, estradiol 13.63 pg/ml and thromboelastography hypercoagulation. Her husband was normozoospermic. The patient underwent IVF with long protocol stimulation Buserelin 0.2 mg, FSH 300 IU, LH 75 IU (12x). The patient conceived after frozen embryo transfer and is currently at 6 months of gestation as well. Both patients were given luteal support and low molecular weight heparin (LMWH) injection after embryo transfer. **Conclusion:** IVF for adenomyosis-related infertility is appropriated with reasonably promising outcomes.

**Keywords:** adenomyosis, adenomyosis resection, in vitro fertilization, long protocol

#### ATTITUDES TOWARD ANONYMITY OF GAMETE DONATION IN DONOR OOCYTE RECIPIENTS IN SPAIN

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**Problem statement:** In Spain, the law requires anonymity in gamete donation. Most patients living in southern European countries (e.g., Spain) face tremendous difficulty in sharing their problem with close relatives. However, there is no information on the preferences of the patients regarding the disclosure of the origins to their children. The aim of this study was to find out how the oocyte recipients feel towards informing their child about the circumstances of their conception and their access to the identity of the donor.

**Methods:** This prospective, cross-sectional multicenter study on recipients treated by donated gametes was carried-out in twelve Spanish IVF centers. A self-administered questionnaire was sent out to a total of 57 women which were



asked to indicate their responses on a 7-point Likert. 57 (100%) women anonymously completed the questionnaire. The participants were asking for their socio-demographic characteristics, their opinions concerning secrecy or disclosure of the method of conception towards the child, what type of information should the child have access to – identifying or non-identifying – and whether they intend to inform their child and relatives about his/her origin. Statistical analysis was performed with Chi square test for dichotomous variables and one-sample T-Student for Likert items.  $p < 0.05$  was considered significant. **Results:** Unlike homosexual or single women, 60% of heterosexual couples refuse to inform their offspring about the origin of their gametes and 47,5% would not tell anyone. Patients do not want to know the identity of donors (0,276  $p < 0,001$ ) and they consider that knowledge about the origin of the gametes (0,278  $p < 0,001$ ) or the identity of the donor (0,178  $p < 0,001$ ) is not important to a child. Patients do not believe that the donor has the right to know the identity of the offspring (0.098  $p < 0.001$ ), but they agree with his/her right to anonymity (0.679). **Conclusion:** Most heterosexual patients who undergo treatment with donated gametes in Spain consider that their children should not know the identity of the donors. The impact of the disclosure of origins to children born by gamete donation could depend on the characteristics of the society in which donation takes place.

#### IN VITRO GROWTH (IVG) OF HUMAN OVARIAN FOLLICLES IN FROZEN THAWED OVARIAN CORTEX TISSUE CULTURE SUPPLEMENTED WITH FOLLICULAR FLUID UNDER HYPOXIC CONDITIONS

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**Problem statement:** Despite its clinical success rates, transplantation after ovarian tissue cryopreservation (OTC) remains a matter of concern. Certain cancer subtypes may lead to the transfer of malignant cells when transplantation of affected ovarian tissue is conducted. IVG and subsequent isolation of vital follicles obtained from frozen thawed tissue for further in vitro maturation (IVM) would expand current fertility protection techniques while reducing the risk of retransplanting malignant cells. **Methods:** A total of 216 cortical biopsies from 3 patients were included in this study in 4 treatment groups. After freezing, thawing and 8 days of hypoxic tissue culture supplemented with different concentrations of human follicular fluid (HuFF) and follicle stimulating hormone (FSH), follicles were isolated enzymatically and stained with calcein in order to determine follicular viability. Numbers and size of vital follicles were assessed by fluorescence microscopy (Ti2, Nikon) and specified by computer assisted, semi-automated measurement (NIS Software, Nikon). To estimate the effect of in vitro culture on apoptosis, tissue sections were stained for nicked DNA (TUNEL) prior and after tissue culture. **Results:** Analysing 3025 vital follicles, we observed significant differences [ $P < 0.01$ ] regarding follicle size when hypoxic tissue culture was supplemented with HuFF compared with the control group on day 1, individual follicles reached sizes of 100µm. **Conclusions:** The results implicate that HuFF contains valuable factors contributing to significant IVG of follicles in human ovarian tissue and could be regarded as an additional tool in personalized fertility restoration prior retransplantation of ovarian tissue.

#### EFFECT OF ADENOMYOSIS ON IN VITRO FERTILIZATION OUTCOMES

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**Problem Statement:** Adenomyosis is a benign disorder in which basal endometrial glands and stroma are found in the myometrium with reactive hyperplasia of myometrial smooth muscle cells. Several studies evaluate the effect of adenomyosis on the success of in vitro fertilization (IVF). There are several theories, such as impaired uterotubal transport, decreased sperm function due to high levels of nitric oxide (NO) in the uterine cavity, implantation disorders, changes in uterine contractility, and several other causes. The objective is to systematically review and determine the effect of adenomyosis on the fertility and success of In Vitro Fertilization (IVF). **Methods:** A structured search was carried out in the PubMed data source. The keywords used in the investigation are “Adenomyosis”, “In Vitro Fertilization”, and “Infertility”. The references included include all related articles and reviews as well as meta-analyses. **Results:** There were ten studies evaluating the success of IVF in women with and without adenomyosis. The implantation rate, pregnancy per cycle, pregnancy per embryo transfer and live birth in women with adenomyosis were significantly lower than in women without adenomyosis. Miscarriage rates in women with adenomyosis are higher compared to women without adenomyosis. An evaluation of 4 studies comparing fertilization results in a group of women with adenomyosis who were not treated and a group of women with adenomyosis who received treatment in the form of surgery or gonadotropin-releasing hormone (GnRH) agonist medical therapy was also evaluated. Surgical treatment or medical therapy with GnRH agonists has increased clinical pregnancy rates in women with adenomyosis. **Conclusion:** Adenomyosis has a detrimental effect on outcomes of women undergoing IVF programs. The use of long-term GnRH agonist therapy shows significant benefits.

#### ENVIRONMENTAL POLLUTION: THE IMPLICATION OF CERTAIN ENDOCRINE-DISRUPTING CHEMICALS IN MALE FERTILITY AETIOLOGY

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Exposure to pollutants originated from (or used in) industrial processes seem to contribute towards reduced reproductive health status. This can be even more obvious in populations occupationally exposed and/or living in polluted areas. The Portuguese city of Estarreja encloses the 2nd largest chemical complex of the country and local contamination of heavy metal(loid)s was reported, with a preponderance of As and Hg. Despite the efforts made to mitigate such contamination, it is unknown if male fertility is compromised in this scenario. Both in vivo(1) and in vitro(2) approaches were used. For (1), 280 samples were collected from men who filled a comprehensive medical, lifestyle and exposure questionnaire. Several samples were excluded due to eligibility criteria and the remaining were divided in exposed





(Estarreja;n=10) and control groups (n=88). As and Hg levels in seminal fluid were measured by ICP-MS. For (2), samples were exposed up to 24h (37°C and 5%CO<sub>2</sub>) with As and Hg doses found in these men, as well as others described in literature. Spermograms were performed according to the WHO guidelines. Sperm functional markers such as viability (eosin Y), mitochondrial function (JC-1), chromatin/DNA status (Diff-Quik staining), acrosome integrity (PSA-FITC staining) and ROS production (DHE) were also addressed. Comparisons between the control and exposed groups from the in vivo approach showed no differences in semen volume, pH, sperm viability, concentration, motility and morphology; yet the sample size is still small. Similarly, no differences were obtained when looking for arsenic e mercury levels (nM range) between groups. Nonetheless, and although the values were smaller than reported in other regions of the world, the in vitro study showed they were sufficient to, by acting synergistically, decrease motility, chromatin integrity and increase ROS production. Higher physiological doses produced a more pronounced effect with ultimately loss of viability. It seems that the counteractive measures implemented in Estarreja decreased As and Hg exposures to levels similar to the general population. Yet, these levels seem to jeopardize male fertility. Special attention should be made to the potential adverse effects of mixtures in studies using relevant concentrations, as this seems to lack and may have wilder implications in the aetiology of male infertility.

#### PREGNANCY OUTCOME AFTER IN-VITRO FERTILIZATION IN PATIENTS WITH GENITAL TUBERCULOSIS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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**Background:** Female genital tuberculosis (FGTB) remains a significant yet underdiagnosed etiology of infertility. FGTB exerts widespread damage, particularly in the Fallopian tubes, requiring in vitro fertilization (IVF) for successful conception. However, experience for IVF in FGTB is relatively limited compared to other pathologies. This meta-analysis aims to summarize pregnancy outcomes following IVF program in patients diagnosed with FGTB. **Methods:** Studies reporting pregnancy outcomes in patients diagnosed with FGTB underwent IVF program were identified from PubMed and Google Scholars database from January 11, 2021 to June 28, 2021. Pregnancy outcome parameters analyzed in this meta-analysis were implantation rate, pregnancy per patients, pregnancy per embryo transfer, miscarriage rate, and live birth rate. Systematic review and pooled analysis were done to summarize pregnancy outcomes in FGTB patients. Meta-analysis were done for 6 studies comparing FGTB patients with patients experienced infertility for other causes underwent the same IVF program using Mantel Haezel Risk Ratio with fix effect or random effect model for dichotomous data and Mean-Difference for continuous data with 95% Confidence Interval. **Results:** Fourteen studies with 882 FGTB patients underwent IVF program were included in this study. Pooled analysis showed the rate of implantation was 20.9% [95% CI 9.8% - 32.0%]. Clinical pregnancy was successfully achieved in 45.2% [95% CI 35.7%-54.7%] of the

patients or 25.0% per embryos transferred. Miscarriage were detected in 25.3% [95% CI 14.4% - 36.2%]. Patients with endometrial damage had lower chance of getting pregnant compared to patients with tubal damage only. Meta-analysis shows no differences in pregnancy outcomes of FGTB patients compared to other infertility causes treated with IVF. **Conclusion:** IVF for FGTB offers similar outcomes in clinical pregnancy and live birth rates compared to other infertility etiologies. However, prognosis remains guarded when significant tubal and endometrial damage is present.

#### MATERNAL BODY MASS INDEX DOES NOT SIGNIFICANTLY INFLUENCE IN VITRO FERTILIZATION OUTCOMES

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**Problem Statement:** Excess body mass index (BMI) is detrimental to in vitro fertilisation (IVF) but evidence for adverse effects is conflicting with few data for the Indonesian IVF population. This study aims to fill that gap. **Methods:** This is a retrospective cohort study at a private fertility centre in a private hospital in Bandung, Indonesia. We recruited all IVF patients undergoing fresh embryo transfer and frozen embryo transfer (FET) between 03/08/2018 and 30/06/2021. We excluded patients with multiple IVF cycles and unavailable case notes. There were 2 BMI categories: WHO and Asia-Pacific with 4 classifications (underweight, normal, overweight and obese). In WHO grouping, underweight, normal, overweight and obese adopted the respective BMI ranges: 18,5; 18.5-24.9; 25-29.9; =30. In Asia-Pacific grouping, underweight, normal, overweight and obese adopted the respective BMI ranges: 18,5; 18.5-22.9; 23-24.9; =25. **Results:** This study recruited 475 patients. Average age was 33.3 years and there were no significant differences in patient ages according to WHO and Asia-Pacific groupings (p=0.566; 0.152). 74.3% (353/475) had primary infertility and 73.7% (350/475) had normal BMI. In the WHO grouping, there were no significantly different distributions of infertility etiologies (ovulatory, tubal, uterine, endometriosis and male-factor) across the groups (p=0.061; 0.485;0.357;0.324 and 0.206). There was a significant difference in the number of day-3 embryos with obese patients reporting significantly fewer embryos (p=0.026). In the Asian grouping, there was a significant difference in male-factor infertility (p=0.016) but no significant differences in the other etiologies (p=0.077;0.407;0.267;0.686). There were also no significant differences in oocytes retrieved, day-3 embryos and blastocysts produced (p-values=0.204, 0.126 and 0.945 respectively). WHO BMI grouping (normal vs. overweight/obese) did not significantly affect biochemical pregnancy rates among our IVF patients (OR 0.849, 95%CI 0.556-1.297), likewise the Asia-Pacific grouping (OR 0.791, 95%CI 0.551-1.136). In total, 105 patients gave birth, all of which through caesarean section. When assessed according to WHO grouping, there were no significant differences in neonatal birthweights and birth lengths (p=0.156; 0.050 respectively). Similar findings on birthweights and birth lengths were found when stratified according to Asia-Pacific grouping (p=0.314; 0.321 respectively). **Conclusion:** Maternal BMI did not significantly affect maternal and neonatal IVF outcomes.

**Disclosure of interests:** none



## PRESENCE OF ISTHMOCELE IN PREVIOUS CESAREAN SECTION AND ITS EFFECT ON IMPLANTATION FACTORS

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Isthmocele, a long-term complication of cesarean delivery, the number of which has increased exponentially over time, is not just a wound defect. The etiology of this structure, which triggers many mechanisms, has not been clearly clarified. We want to reveal the change of biochemical markers in the mechanism of isthmocele causing secondary infertility. A total of 31 patients who applied to Eskisehir Osmangazi University Faculty of Medicine, Department of Obstetrics and Gynecology with the complaint of abnormal uterine bleeding and diagnosed with or not diagnosed isthmocele in transvaginal ultrasonography (TVUSG) were examined. Patients' age, previous number of cesarean sections, myometrial thickness at the incision, isthmocele area, distance from the incision to the external cervical os, and levels of interleukin-6 (il-6) and leukemia inhibitory factor (LIF), which are involved in embryo implantation, were compared. The obtained data revealed the differences between the patient and control groups. In the analysis of the patient group, the mean interleukin-6 level was 140.71 ng/L, while it was 148.86 ng/L in the control group. Moreover, the mean LIF level was 290.58 ng/L in the patient group, whereas it was 309.47 ng/L in the control group. Hence, the hypothesis that isthmocele causes secondary infertility by changing the endometrial cavity environment has been supported. However, for statistically significant results, studies should be supported by providing homogenization of groups with larger sample groups. We do not yet know exactly how the isthmocele occurs and what consequences it brings. There is no previous study on the biochemical effects of isthmocele, which we think causes secondary infertility by various mechanisms. Supporting this study, which we have done as the first in the world, conducting different studies in the future will help to further illuminate the biochemical processes.

## CONTROVERSIES IN IVF MANAGEMENT OF ENDOMETRIAL TUBERCULOSIS RELATED INFERTILITY: SERIAL CASE REPORTS FROM INDONESIA

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**Problems Statement:** Female genital tuberculosis (FGTB) especially endometrial Tuberculosis (TB) often leads to endometrial scarring or even Asherman's syndrome which leads to infertility. We present three cases of endometrial tuberculosis-related infertility to highlight the management of the irreversible damage caused by TB infection on the endometrium. **Methods:** Three cases of endometrial tuberculosis-related infertility. The first case is a 30-years old patient with repeated IVF failures due to insufficient endometrial receptivity. She underwent laparoscopic surgery on 2019 with histopathology result of salpingitis tuberculosis. In 2021 she received long protocols in In Vitro Fertilization (IVF) resulting in 5 excellent and 2 good embryos. We freeze all of the embryos, but after 2 cycles of Frozen Embryo Transfer (FET) the endometrium was not receptive for transfer despite all of the maximum regimens. She was given Platelet Rich Plasma (PRP) and estradiol to stimulate endometrial

growth. The second and third cases are respectively a 37 and a 34 years old patients with amenorrhea due to Asherman's Syndrome, primary infertility, and have a prior diagnosis of TB and were given TB medications. Both of them underwent adhesiolysis with hysteroscopy, endometrial sampling resulting in endometrial TB, and underwent Intrauterine Device (IUD) insertion in conjunction with estradiol regimen before entering the IVF cycle. **Results/Discussion:** Incidences of tuberculosis-related infertility are increasing lately. Nowadays despite the major antibiotics regimens, endometrial problems caused by FGTB are still hard to manage and the damage caused by the infection tends to be irreversible. Unfortunately, even extensive FGTB tends to be asymptomatic, and may be similar to or mimics other diseases. It usually leads to missed or late diagnosis of FGTB. Awareness of FGTB is still poor, even in Indonesia. It is important to suspect the possibility of FGTB in all women with previous pulmonary TB infection. Early diagnosis and comprehensive treatment are important to prevent irreversible injury to the female genital. **Conclusion:** Public awareness of FGTB, early diagnosis, and treatments are important in managing endometrial tuberculosis as antituberculosis therapy is not ineffective in restoring advanced endometrial scarring.

**Keywords:** Female genital tuberculosis, infertility, endometrial tuberculosis, IVF

## DIABETES AND REPRODUCTION

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**Problem Statement:** Diabetes is considered one of the most prevalent chronic illnesses which affect the physical and psychological health of the worldwide population. There is evidence that indicated that the prognosis of the disease can be impactful in terms of the reproductive health of both men and women. Fertility is affected among individuals who have been diagnosed with this condition. Considering the rise in diabetes prevalence, it has now become important to understand clinical aspects of the disease and incorporate interventions that might be beneficial in terms of protecting the reproductive health of diabetic people. The aim of this study is to delve deep into the pathophysiological mechanisms and relevant interventions to conserve the fertility and reproductive health of people with diabetes. **Methods:** A literature search was performed and 40 articles were obtained on this topic. The time limit for article publication was set in between 2012 and 2022. Databases used for this study were PubMed and Cochrane Library. Articles that were published in the English language were incorporated into this study. Systematic Review was performed based on the collected articles and the researchers performed thematic analysis for analysing the data. **Results:** Conventional parameters regarding sperm count and quality of diabetic patients were found to be worse as compared with non-diabetic individuals. Reduced sperm viability and enhanced sperm DNA fragmentation were the results of the diabetes mellitus type 2 induced inflammatory state and enhanced oxidative stress. Low ejaculate volume and mitochondrial damage brought on by diabetes mellitus type1 resulted in reduced sperm motility. In the context of female fertility and reproductive health, it was discovered that the reproductive period of females with diabetes might be decreased as a result of delayed menarche or premature menopause. A fertile woman who has been diagnosed with diabetes might experience menstruation-related abnormalities, which may include secondary amenorrhea and oligomenorrhea. **Conclusion:** There is evidence that the disease's prognosis may have an effect on both men's and women's reproductive health. A literature search (Web-



based) was performed and 40 articles were obtained on this topic. The fertility of both men and women might be affected due to the prognosis of diabetes.

### THE CORRELATION BETWEEN ANTRAL FOLLICLE COUNT AND ANTI MULLERIAN HORMONE WITH FOLLICLE OUTPUT RATE (FORT) ON CONTROLLED OVARIAN HYPERSTIMULATION IN IVF PROGRAM AT RSHS IN 2021

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**Problem statement:** This study was conducted to determine the correlation between Antral Follicle Count (AFC) and Anti-Müllerian Hormone (AMH) with Follicle Output Rate (FORT) in woman receiving controlled ovarian hyperstimulation in the invitro fertilization (IVF) program. **Method:** This study was a correlation analytic study to assess the correlation between AMH, AFC, and FORT using a retrospective type of probability sampling method, involving 30 patients undergoing IVF cycle between January 1 – December 31, 2021 at a public assisted reproductive technology clinic. The data were obtained from medical records of IVF patients with the FSH dose of 225-375 IU. Subject details such as identity, characteristic, medical history, history of previous therapy, levels of examined ovarian reserve markers (AFC and AMH), dose follicle stimulating hormone (FSH) administered, number of preovulatory follicle and number of oocytes produced were recorded. **Result:** There was a significant positive correlation between AMH ( $r=0.68$ ;  $p\leq 0.001$ ), AFC ( $r= 0.761$ ;  $p\leq 0.001$ ) dan FORT. **Conclusion:** AFC and AMH have a significant relationship with FORT. The ability of correlation between AFC and AMH with FORT was 26,7%.

**Keywords:** Antral follicle Count (AFC), Anti-Müllerian Hormon (AMH), Invitro fertilization (IVF), Follicle Output Rate (FORT)

## DIAGNOSTIC PROCEDURES

### REDUCED ACCURACY OF GOLD TOP BLOOD COLLECTION TUBES FOR REPRODUCTIVE HORMONE PROFILING IN CAPILLARY BLOOD SAMPLES

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**Problem statement:** While evidence of concordance between reproductive hormone measurements in venipuncture and capillary serum exists, variation between blood collection tubes has not been investigated. We compared the performance of two capillary and venipuncture blood collection tubes (red top and gold top) and assessed variation between two leading tube manufacturers. **Methods:** To compare tube types, two venipuncture and two finger prick capillary samples were concurrently collected from 11 premenopausal women into red top and gold top tubes. In all four sample types, serum concentrations of Anti-Müllerian Hormone (AMH), Estradiol (E2), Follicle-Stimulating Hormone (FSH) and Luteinising Hormone (LH) were measured via chemiluminescence immunoassay. To compare capillary tube manufacturers, the same hormones were measured in a second cohort of 8 premenopausal women using Greiner and Becton Dickinson (BD) red top tubes. Data was log-transformed prior to statistical analysis via paired t test and subsequent Cohen's d (d) to calculate effect size; p values=0.05 were considered significant. **Results:** Gold top capillary tubes produced higher AMH ( $p0.001$ ,  $d=0.12$ ), FSH ( $p0.001$ ,  $d=0.30$ ) and LH ( $p0.001$ ,  $d=0.29$ ) measurements

compared to gold top venipuncture tubes. Measurements of AMH ( $p0.001$ ,  $d=0.22$ ), FSH ( $p0.001$ ,  $d=0.29$ ) and LH ( $p=0.008$ ,  $d=0.13$ ) were higher and E2 measurements were lower ( $p=0.012$ ,  $d=0.34$ ) in gold top compared to red top capillary tubes. No significant differences were found between red top capillary tubes and venipuncture tubes. Greiner red top tubes produced moderately lower E2 measurements than BD ( $p=0.046$ ,  $d=0.04$ ), however no other significant differences were found. **Conclusion:** This suggests that gold top, but not red top, capillary blood collection tubes yield significantly different measurements than venipuncture tubes and measurements are not manufacturer-dependent. Further investigation into gold top tubes is required.

### REDEFINING LABORATORY REFERENCE RANGES FOR FEMALE REPRODUCTIVE AND THYROID HORMONES

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**Problem statement:** Reference ranges for analytes usually represent the 95% confidence intervals of a small population. We establish a more robust statistical framework that considers continuous quantiles derived from a large dataset in order to better define reference ranges of reproductive and thyroid hormone levels. **Methods:** Capillary blood samples taken on menstrual cycle day 3 of 2180 UK-based women aged 18 to 53 years were assayed for Anti-Müllerian hormone (AMH), Estradiol (E2), Luteinising Hormone (LH), Follicle-Stimulating Hormone (FSH), Free Thyroxine (FT4), Thyroid-Stimulating Hormone (TSH) and Prolactin (PrL). Women who had a previous diagnosis or symptoms of polycystic ovary syndrome, hypo- or hyperthyroidism, hypothalamic hypogonadotropism or menopause were excluded from analysis. Women who were 35 years old, had a BMI 30 or 18.5 kg/m<sup>2</sup>, a menstrual cycle length of 21 or 35 days or a period length of 8 or 3 days were also excluded, resulting in 292 healthy women to represent a model cohort for statistical analysis. All data were log-transformed prior to Shapiro-Wilks tests for normality of distribution. Summary statistics were derived from these distributions. **Results:** Measurements of AMH, E2, FSH, FT4, TSH and PrL levels did not significantly deviate from normality at the confidence level of 0.05. We report the mean, standard deviation (SD) and the Standard Error of the Mean (SEM) of log transformed values to indicate the uncertainty due to finite sample sizes: logAMH (mean = 3.085, SD = 0.670, SEM = 0.040), logE2 (mean = 4.902, SD = 0.393, SEM = 0.026), logLH (mean = 1.788, SD = 0.375, SEM = 0.025), logFSH (2.039, SD = 0.289, SEM = 0.019), logFT4 (mean = 2.772, SD = 0.128, SEM = 0.008), logTSH (mean = 0.753, SD = 0.478, SEM = 0.029), logPrL (mean = 5.949, SD = 0.560, SEM = 0.047). **Conclusions:** This empirical data confirms that hormone measurements are log-normally distributed, permitting the mean and standard deviation of log-transformed values to fairly represent the data. Normal distribution confirms this dataset can be used to derive robust reference ranges to better interpret hormone values from the female population.

### PREOPERATIVE SONOGRAPHIC SLIDING SIGN FOR PREDICTION OF INTRA-ABDOMINAL ADHESION BEFORE REPEAT CESAREAN DELIVERY

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**Problem statement:** To evaluate the usefulness of uterine sliding sign for prediction of intra-abdominal adhesion in women undergoing repeat cesarean section (CS) and the association of sliding sign with other operative and neonatal outcomes. **Methods:** A prospective cohort study was conducted in pregnant women with at least one prior CS. Transabdominal ultrasound was performed and classified as positive or negative sliding sign. Surgeons were blinded to the sonographic result and were instructed to assess intra-abdominal adhesions. Sensitivity, specificity, PPV, and NPV were calculated. Operative and neonatal outcomes of positive and negative sliding sign groups were compared. Factors associated with intraoperative adhesions were analyzed. **Results:** We recruited 380 women. The sensitivity and specificity of uterine sliding sign to detect moderate to thick adhesions was 60.6% and 91.9%, respectively. Negative sliding sign were significantly associated with higher incidence of adhesions, longer skin to delivery time, total operative time, and lower 5-minute Apgar score in the newborns. Negative sliding sign and history of 2 or more prior CS are the significant predictors of moderate to thick adhesions. **Conclusions:** Uterine sliding sign is an independent predictor of intraoperative adhesions, with acceptable sensitivity, high specificity and NPV.

**Conflict of interest:** None to be declared.

## OTHER

### INTRODUCTION OF A STANDARDISED PROFORMA TO OPTIMISE POST-OPERATIVE ANALGESIA AFTER CAESAREAN SECTION

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Pain following caesarean section can influence recovery, patient satisfaction, breastfeeding success and mother-child bonding. Since the introduction of enhanced recovery protocols, mothers are often discharged 24 hours later. We identified concerns within our hospital with mothers tolerating poorly controlled pain in order to achieve earlier discharge and subsequently suffering significant pain at home with inadequate analgesia. **Methods:** We conducted a prospective audit of analgesic prescribing and post-operative pain scores after a caesarean section. Mothers were seen on a post-operative day one, their pain score recorded on a verbal analogue score from 0-10 and their prescription chart reviewed. A follow-up phone call was then made on post-operative days 3-7 to enquire about pain scores and analgesic use at home. Following this, a standardized proforma for prescribing after the caesarean section was introduced, including the addition of dihydrocodeine that patients can take home following discharge. There were educational update sessions for anaesthetists and midwives and then a re-audit was conducted months later. **Results:** Data were collected from 50 women before and after the introduction of the change. An initial audit showed that there was considerable variation in prescribing with four women prescribed no regular analgesia at all and inconsistency in the dose of oral morphine prescribed. Women were not given any form of analgesia to take home after discharge and were advised to take regular paracetamol and ibuprofen. However, 31/50 (62%) reported that they needed additional analgesia and eight women (16%) even sought a prescription for additional analgesia from elsewhere. After the introduction of the change, prescribing was more consistent with all patients prescribed regular analgesia. 46/50 patients were given dihydrocodeine on discharge. Mean pain scores on postoperative day one

improved from 5.16 to 3.9, and at home improved from 6.18 to 2.58. The use of dihydrocodeine at home significantly improved patients reporting of severe pain at home from 24% to zero. **Discussion:** Lack of strong analgesia out of the hospital and the increased demands on activity levels mean that women are frequently in more pain at home after discharge. The introduction of a standardized prescription proforma, including the use of to-take-out dihydrocodeine, was successful in improving patient pain scores, and the requirement for additional analgesia, both in hospital and at home.

### NHS-FUNDED IVF TREATMENT CRITERIA EXCLUDES MAJORITY OF THOSE ACTIVELY TRYING TO CONCEIVE

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**Problem statement:** The UK's Women's Health Strategy has committed to an overhaul of National Health Service (NHS)-funded In Vitro Fertility (IVF) treatment criteria and abolition of the postcode lottery. However, a strategic plan and committed timeline is lacking for the rollout. Meanwhile, the current system and strict eligibility criteria may disadvantage those in need of such support. **Methods:** The most common criteria requirements for funding eligibility from Integrated Care Boards (ICBs) was applied to actively trying Hertility Health customers to assess how fit for purpose the current criteria for NHS-funded IVF treatment is. **Results:** As of August 2022, ten of twenty-nine ICBs had fertility policies published on their website. The most common criteria for eligibility were: aged 18-42; Body Mass Index (BMI) 19-30; serum Anti-Müllerian Hormone (AMH) 5.4 pmol/L; serum follicle-stimulating hormone (FSH) 8.9 IU/L; non-smoking; and having no living children. The above criteria were assessed in 780 England-based Hertility Health customers who reported they were actively trying to conceive between September 2020 and August 2022. Of these, 675 had no underlying gynaecological conditions (Group A). The remaining 105 customers (Group B) had a diagnosis of one or more of the following: endometriosis, pelvic inflammatory disease, Fallopian tube blockage, polycystic ovary syndrome, and premature ovarian insufficiency. The majority of Group A (65.25%) did not fit the above criteria for NHS-funded IVF treatment, irrespective of the time they had been trying to conceive (TTC). Additionally, 78.86% of Group A had been TTC for 12 months. Similarly for Group B, 74.3% would be ineligible for NHS-funded treatment, and 42.67% had been TTC for 12 months. **Conclusion:** The majority of customers with or without a pre-existing reproductive health condition would not be eligible for NHS-funded IVF treatment based on biochemical and/or demographic criteria. Furthermore, most customers had been TTC for 12 months at the point of analysis and therefore would not be referred for further investigations despite not fulfilling the NHS-funding criteria, suggesting that the criteria and 12 month TTC time prior to further investigations is not fit-for-purpose.



## ORAL PRESENTATIONS 5: GYNECOLOGICAL ONCOLOGY, GYNECOLOGY

### GYNECOLOGICAL ONCOLOGY

#### SQUAMOUS CELL CARCINOMA MODERATELY DIFFERENTIATED ARISING FROM A MATURE CYSTIC TERATOMA - A CASE REPORT

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Squamous cell carcinoma (SCC) arising from a mature cystic teratoma (MCT) is a rare entity and this malignant transformation occurs in about 1 -2% of cases. SCC is the most common malignant transformation (MT) from MCT and due to its rarity, preoperative diagnosis and treatment options constitute a big challenge. Presented is a case a 30 year old, nulligravid, with a two month history of hypogastric pain which turned out to be an ovarian rupture with unique preoperative serum tumor markers and ultrasound findings. Histopathologic findings revealed squamous cell carcinoma arising from a mature cystic teratoma.

#### CASE REPORT: A CASE OF UTERINE TUMOUR RESEMBLING OVARIAN SEX CORD TUMOUR WITH LUNG METASTASES

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**Problem statements:** Endometrial stromal sarcomas account for 0.25% of all uterine malignancies. Uterine Tumour Resembling Ovarian Sex-Cord Tumours (UTROSCTs) are a rare type of neoplasm arising from the endometrial stroma. Epidemiology, aetiology, pathogenesis, management and natural history of UTROSCTs are still a question of debate, as there is little available data in the literature and the diagnosis is made exclusively on histopathologic examination. Although rare, the possibility of UTROSCTs should be kept in mind, when a patient presents with abnormal bleeding and an enlarged uterus. **Methods:** A 27 year old lady, P1, presented to the Emergency Department with one week history of worsening abdominal pain with irregular cycles for the past year with worsening heavy menstrual bleeding. Examination revealed a palpable suprapubic mass with an otherwise soft abdomen, while a TVUS noted a large vascularised multicystic anterior wall mass, described as a large infiltrating multicystic myometrial tumour on MRI. Baseline bloods including tumor markers, hormone profile and a pap smear were normal. **Results/discussion:** Case was discussed during a multidisciplinary team meeting and it was decided to proceed with examination under anaesthesia together with a pipelle biopsy. Rigid Hysteroscopy was performed with good views. Due to the ambiguity of results and images we proceeded with laparotomy for total abdominal hysterectomy and right oophorectomy. The specimen was sent for histology, whereby after consultation with a Tertiary Referral Centre for Gynaecological Cancers, a diagnosis of UTROSCT was made. Patient was being followed up by the Gynaecology team and the Oncology team with 6 monthly MRI Pelvis and CT Thorax to exclude local recurrence/metastasis. During one of the scans, mets to the lung were noted, a wedge biopsy was taken which confirmed the diagnosis. **Conclusions:** Patient currently undergoing chemotherapy with poor prognosis.

#### I'M TOO YOUNG FOR THIS!

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**Introduction:** Endometrial cancer (EC) is a postmenopausal disease and occurs in only 4% of women 40 years and below. <sup>1</sup>A local study was conducted which showed only 12.4% of EC patients to be 40 years old and younger. <sup>2</sup>Fortunately, most patients in this age group present with a low grade endometrial carcinoma with excellent prognosis. <sup>3</sup>Because of this young age group, issues on fertility sparing approach in the form of hormonal treatment is emerging. With the rarity of EC in this age group, and given their fertility sparing concerns, conservative approach is a reasonable option for selected patients. This paper aims to share this unusual case in the medical field with the hope of being able to contribute with the establishment of a consensus on the management of EC in the young, that is fertility preserving. **Case:** KE is a 36 year old Gravida 0 with primary infertility, complaining of menorrhagia. She has a body mass index of 31.9 kg/m<sup>3</sup>. Her ultrasound showed thickened endometrium, hyperechoic with cystic spaces measuring 1.8 cm. Sampling was done which showed Endometrioid Adenocarcinoma. Abdominal CT scan showed a non enhancing unilocular, cystic mass measuring 3.5 x 2.5 cm, on the left ovary. There was no discrete uterine nor abdominopelvic mass, nor lymphadenopathy. She then underwent Exploratory Laparotomy, Extrafascial Hysterectomy, with evaluation of lymph nodes. Her histopathology results confirmed the diagnosis. **Discussion:** Endometrial carcinoma develops due to unopposed estrogen exposure. Risk factors include obesity, nulliparity, early menarche, polycystic ovarian syndrome, and sequential use of contraception. <sup>5</sup>The standard treatment for EC is surgery. However, in some parts of the world, medical treatment is being applied with the most common regimen consisting of medroxyprogesterone acetate at 50 to 600 mg daily and megestrol acetate at 160 mg daily. <sup>1</sup>On literature review, hormonal treatment has been shown to be successful in patients with a FIGO 1A staging. <sup>5</sup>Factors to consider when doing conservative management include grade of disease, depth of myometrial invasion, presence of adnexal masses, and their future child bearing plans. <sup>4</sup>**Conclusion:** A consensus on a fertility sparing treatment should be made for young patients with EC.

#### SUCCESSFUL MENARCHE AFTER GNRHA TREATMENT IN A PATIENT WHO DEVELOPED OVARIAN HYPERTHECOSIS SECONDARY TO JUVENILE GRANULOSA TUMOR

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**PROBLEM STATEMENT:** Primary amenorrhea is among the many consequences of having a functional ovarian tumor. This abnormality is expected to resolve upon removal of the source, however, menarche did not happen to our index patient. We present an 18yo girl who consulted for primary amenorrhea. She has a BMI of 30kg/m<sup>2</sup>, stands 152cm, has breast and pubic Tanner stage 2, hirsutism (MFG: 11), and very dark skin fold in the neck area. Her external genitalia



looked grossly normal. She underwent EL, right salpingo-oophorectomy for Juvenile Tumor Stage 1A, 2 years prior to consult. Although no adjuvant treatment was needed for her malignancy, she was advised to wait for her menstruation to come afterward. 2 years after the operation, she has not menstruated. Among her laboratory results, the pertinent were her increased testosterone, DHEA-S, cholesterol and presence of impaired fasting glucose. Her transrectal ultrasound showed slightly enlarged ovarian volume (15cc) and appeared to have generally dense stroma with multiple, peripherally located follicles of 1cm, while her abdominal CT scan revealed normal findings. **METHODS:** This is a case study done in a private oncology clinic. The patient failed to menstruate after a trial of progesterone withdrawal and 2 cycles of oral contraceptive pills. Eventually, she was given Leuprolide acetate 3.75mg IM every 4 weeks x 3 doses followed by cyclic EE + CPA pills. **RESULTS:** Two months after the last dose of GNRHa, while on cyclic OCP, she eventually had her menstruation. Her testosterone began to decrease, and her sugar, cholesterol, and DHEA-s became normal. On surveillance of her ovarian malignancy, her remaining ovary decreased in size and is now described as normal despite prolonged use of OCP. She still presents with hirsutism which is expected to gradually decrease in 12 months' time. **CONCLUSION:** Extreme steroid production from the juvenile granulosa tumor lead to the patient's hyperandrogenic state causing the primary amenorrhea. GNRHa was helpful in suppressing ovarian activity and stopping the pathophysiology of ovarian hypethecosis. OCP did not show any adverse effect with regard to the patient's malignancy.



#### ONLINE MULTIDISCIPLINARY TUMOR BOARDS IN LOW-AND-MIDDLE-INCOME-COUNTRIES TO ACHIEVE HEALTH EQUITY: A PARSGO INITIATIVE

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**PROBLEM: STATEMENT:** The disparities to reach proper cancer care have been further increased during the Coronavirus pandemic especially in the low-and middle-income countries (LMIC). Hence, the importance of online multidisciplinary tumor boards (OMTB) became more evident. Pan-Arabian Research Society for Gynecologic Oncology (PARSGO) aims to provide new perspectives on the management of patients with gynecologic cancer in the pan-Arabian and African region. Our goal is to evaluate presented cases at the PARSGO OMTB that was initiated with collaboration with International Gynecologic Cancer Society (IGCS), PARSGO's strategic alliance partner. **METHODS:** We prospectively collected PARSGO OMTB data from 1st July 2019 until 31st May 2022. We used the REDCap Version 9.5.1 web application for data collection and analysis. We included the LMICs only in pan-Arabian and pan-African Regions. We analyzed the descriptive statistics and impact of the OMTB on patients' managements. **RESULTS:** In total, we identified 107 cases. The mean age was 45 years (±16.9). More than half of the patients (n=58, 55.8%) were consulted from Egypt, the third most populated country in the region. Gynecologic oncologists accounted for the majority of the participants. Majority of the patients had ovarian cancer

(55.7%). BRCA status was unknown at 95.2%. Patients' wishes were missing in the majority of cases. Surgical diagnostics and surgical treatment were initially considered in 69.1% and 76.3% of the cases, respectively, whereas upon OMTB, they went down to 36.4% and 50.0%, respectively. **CONCLUSION:** We detected disparities in prevention and treatment options among women with gynecologic cancers from LMICs. We invite experts and colleagues to join PARSGO OMTB to achieve health equities in LMICs among women with gynecologic cancers.

## GYNECOLOGY

### UNILATERAL OVARIAN AND FALLOPIAN TUBE AGENESIS WITH EXTRAGONADAL DERMOID CYST

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The unilateral absence of both ovary and ipsilateral fallopian tube without a concomitant uterine or renal deformity is very rare. Its incidence has been difficult to determine but Sivanesaratnam (1986), suggested it to be 1:11,240 cases. Theories explaining this phenomenon include 1) a congenital defect in development involving both the Mullerian and mesonephric system and 2) acquired through an ischemic event involving the torsion of adnexal structures and subsequent resorption of the ovary during fetal life or early childhood. The objective of this paper is to present a case of unilateral absence of the ovary and fallopian tube in a 32-year-old Gravida 3 Para 2 (2012) who underwent elective laparoscopic surgery for a dermoid cyst which intraoperatively turned out to be extragonadal in origin. The clinical significance of the unilateral absence of both ovary and ipsilateral fallopian tube has yet to be fully understood especially its implications for future fertility.

**Key Words:** unilateral ovarian and fallopian tube agenesis, extragonadal dermoid cyst

### IMPACT OF LIMITED REPRODUCTIVE HEALTH AWARENESS ON PCOS DIAGNOSIS TIMELINES AND NEED FOR IMPROVED PATIENT EDUCATION

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**Problem statement:** Polycystic ovary syndrome (PCOS) is a common endocrine condition estimated to affect up to 20% of women worldwide. Despite its prevalence and debilitating symptoms, a diagnosis can take over 2 years and appointments with 3 different healthcare providers. Our study investigated the barriers which contribute to a delay in the diagnosis of PCOS. **Methods:** A cross-sectional survey was conducted on people aged 18 or older with a self-reported suspected or confirmed PCOS diagnosis in January 2022. It assessed general demographic information, the influence of symptoms on quality of life and their experiences with receiving a diagnosis. Of the 341 responses, 184 with a confirmed PCOS diagnosis were included in the analysis. **Results:** Despite the majority of participants reporting that their symptoms impacted various aspects of their life, only 7.6% had sought medical help immediately, whilst 57.6% waited for up to 2 years. Although the majority (36.4%) were diagnosed after consulting only one doctor, 22.8% needed to visit 2 different doctors, 26.0% visited 3 different doctors,



22.8%, and 10.9% visited over 4 different doctors. The most common reason(s) stated for this delay in diagnosis was not realising their symptoms needed help (59.8%), symptom dismissal (31.0%) and lack of information regarding routes to care (18.3%). Anxiety (74.4%), irregular menstrual cycles (65.2%) and weight-related concerns (64.6%) were the most commonly reported symptoms, although this did not translate to what was focused on during consultations. The most commonly discussed long-term health risk associated with PCOS was fertility issues. Following consultation(s), 53.8% of participants were not satisfied with the information provided to manage their diagnosis and 89.1% of participants looked for extra information afterwards; the majority of these people (46.7%) relied on social media. When asked which support pathways would have improved symptom management, 32.0% selected educational resources. **Conclusion:** This study suggests that lack of reproductive health awareness can delay the diagnosis of PCOS. Heavy reliance on unregulated channels such as social media to obtain reproductive health information highlights the need for better accessibility to educational resources about reproductive health.

#### EXPLORING WOMEN'S PERSPECTIVES ON DISMISSAL OF REPRODUCTIVE HEALTH SYMPTOMS BY MEDICAL PROFESSIONALS

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**Problem statement:** Women make up 51% of the United Kingdom (UK) population, yet literature shows that they experience poorer health outcomes due to lack of support by healthcare system. Our study investigated the experiences of women accessing help for their reproductive health symptoms in the UK. **Methods:** A cross-sectional survey commissioned by Hertility Health was conducted on 1511 UK-based women aged 20-40, by Perspectus Global in March 2022. It assessed general demographic information and individual perspectives on the management of reproductive and women's health. **Results:** Almost all (93.6%) participants agreed that women's health problems weren't taken as seriously as those affecting men. The majority of participants (86.4%) reported either they or someone in their life had encountered occasional to constant dismissal of reproductive health-related issues by medical professionals. It was noted that younger participants (aged 20-30) were more likely to be dismissed and not to seek help for women's health-related issues compared to those aged 30-40 (78.6% vs 69.8%). In most cases (74.1%) this dismissal was by a doctor, 47.0% of whom were male and 30.0% were female. The most commonly dismissed symptoms were period-related, namely period pain (71.0%), irregular periods (51.0%), heavy periods (49.0%) and PMS symptoms (33%). Of people aged 20-30, 22.8% reported menopause-associated symptoms being dismissed. Other topics of dismissal included fertility-related concerns (33.0%), miscarriage and baby loss (32%) with 7.0% saying they struggled to get pregnant with no support from their GP. Almost all (94.3%) participants reported a lack of information or support about reproductive health issues. **Conclusion:** Our findings support the presence of gender bias within reproductive healthcare. Dismissal of symptoms by doctors is common and younger people appear more likely to be dismissed. Further research is needed to understand the potential consequences of this. This highlights the need for improved medical training around women's health-related issues. The majority of individuals feel there is a lack of support services for reproductive health, highlighting the need

for access to information resources about reproductive health.

#### MOSAIC TURNER'S SYNDROME AS THE CAUSE OF PRIMARY OVARIAN INSUFFICIENCY

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**Problem statement:** Primary ovarian insufficiency (POI) is the depletion or dysfunction of ovarian follicles with cessation of menses before age 40 years (1). The etiology of this condition may vary, including chromosomal abnormalities, damage from chemotherapy or radiation therapy, or premutation in the FMR1 gene for fragile X. Less frequently, it can result from infiltrative or infectious processes, pelvic surgery, or autoimmune diseases. In many cases, the etiology remains unknown (1). **Methods:** A case report was performed through access to clinical records and exam reports of the patient. **Results:** A 31-year-old single woman, otherwise healthy except for a previous history of thrombophlebitis and a smoking habit (6 cigars daily), was referred to a Gynecologist for complains of secondary amenorrhea and intermittent vasomotor symptoms. She had a previous history of a 1st trimester miscarriage at 27 years old. Menarche occurred at 13 years of age and she had experienced irregular menses since menarche. Her last menstrual period had occurred 14 months prior to the appointment at our clinic. She was not using contraception. Height and weight were 170cm and 58kg, respectively. The gynecological exam revealed no abnormalities, but upon pelvic ultrasound examination the ovaries displayed reduced dimensions with a low antral follicle count. A thorough investigation was performed, revealing FSH 73,9 mUI/mL, LH 41,5 mUI/mL, E2 5pg/mL, AMH 25 pmol/L (similar results found 6 months prior). Prolactin and TSH were normal. Cytogenetic analysis revealed a karyotype of Turner syndrome mosaicism with 45,X (2 cells)/46,XX (78 cells). Premutation in the FMR1 was excluded. Considering the results, a diagnosis of POI was made and the patient initiated hormonal replacement therapy. **Conclusion:** When compared to the classical form, mosaic karyotype TS cases are more likely to present spontaneous puberty, normal levels of serum sex steroids and gonadotropins and follicles in ovarian biopsies. The chance of spontaneous conceiving in women with TS was reported as 2-10 %, most of which are the cases of mosaic pattern (2). X chromosome monosomy and mosaicism are encountered in 1.5 % of all amenorrhea cases although the incidence of TS mosaicism in the general population still remains challenging (3).

#### ACCIDENTALLY AND INTENTIONALLY CUT THE URETER DURING GYNECOLOGICAL PROCEDURE: A CASE REPORT

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**Problem Statement:** Ureteral reimplantation or ureteroneocystostomy is the gold standard definitive treatment for surgical complications or diseases involving the distal ureter. Gynaecological conditions that affect the urinary system may necessitate ureteral dissection, resection, and/or repair or possibly cause ureteral injury. **Clinical Case:** Two cases of ureteral reimplantation during challenging gynaecological procedures. In the first case, ureteral injuries were induced by significant pelvic adhesions in undetected endophytic cervical cancer patients. In the second case, the ureter was intentionally cut due to hydroureter with narrowing



of the distal left ureter due to adhesions induced by DIE. In both cases, massive adhesions in the abdominal and pelvic areas were the primary risk factors. **Result:** We performed non-stenting and non-refluxing tensionless ureteroneocystostomy in both patients using the Lich-Gregoir technique. The postoperative status was satisfactory, and there was no post-operative morbidity. **Conclusion:** Ureteral reimplantation is a favourable procedure for ureteral obstruction or injuries. Urological complications and the placement of ureteral stents are unnecessary if the correct method is performed.

**Keywords:** Gynecological Surgery, Iatrogenic, Ureteral Reimplantation, Ureteroneocystostomy

### TURNER SYNDROME ASSOCIATED WITH MAYER-ROKITANSKY-KUSTER-HAUSER SYNDROME: A CASE REPORT AND REVIEW OF LITERATURE

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Turner syndrome and Mayer-Rokitansky-Kuster-Hauser syndrome are the most common causes of primary amenorrhea. However, müllerian agenesis in patients with Turner syndrome is rare, with only 15 reported cases worldwide. We describe an 18-year-old female who presented with primary amenorrhea, absent secondary sexual characteristics, short stature, webbed neck, and shield chest. Workup revealed hypergonadotropic hypogonadism, absence of uterus and ovaries, and hypothyroidism. She had a 45,X karyotype and was diagnosed with a very rare case of Turner syndrome with associated Mayer-Rokitansky-Kuster-Hauser syndrome. Early detection of the etiology of amenorrhea is critical for prompt management and initiation of hormonal replacement. She was counseled on the possible systemic problems associated with her condition. The importance of regular follow-up and continuous care were also emphasized. With the coexistence of these two conditions, adoption is the only option to having children in the Philippines, where oocyte donation and uterine transplantation are currently not available.

### STRUMA OVARIII ASSOCIATED PSEUDO-MEIGS' SYNDROME WITH CONCOMITANT ABDOMINOPELVIC TUBERCULOSIS MASQUERADING AS OVARIAN MALIGNANCY

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Pseudo-Meigs' Syndrome (PMS) is a rare disease characterized by the triad of (1) an ovarian neoplasm, other than a fibroma or thecoma, (2) ascites, and (3) pleural effusion. Tumors such as struma ovarii, mucinous and serous cystadenomas, and germ cell tumors have been linked with the condition. Struma ovarii, known as ovarian goiter, is a specialized mature teratoma derived from germ cell layers wherein thyroid tissue (50%) has predominantly overgrown other elements. Due to its clinical features combined with the elevation of serum cancer antigen 125 (CA-125) levels, it is often mistaken and treated as a malignant ovarian tumor. Despite its presentation, this entity has an excellent prognosis when surgical excision of the tumor is performed. This paper presents an unusual case of a 41-year old, Gravida 10 Para 10 (10-0-0-9) who was diagnosed as a case of struma ovarii associated pseudo-Meigs' syndrome with concomitant abdominopelvic tuberculosis and elevated CA-125 resembling an ovarian malignancy. The results of the imaging, blood work-up together with the history and physical

examination findings in the index case pointed to a malignant tumor. After 1 month of initiating Anti-Koch's medication, she underwent an extensive surgical procedure of exploratory laparotomy, total hysterectomy with bilateral salpingo-oophorectomy with staging procedure, appendectomy, halban culdoplasty, uterosacral fixation under continuous lumbar epidural anesthesia. The post-operative course was uneventful. There was resolution of the ascites and pleural effusion and completion of Anti-Koch's medication after a follow-up of 6 months. Increasing awareness in the occurrence of benign complex pelvic masses which mimic malignant conditions is essential in reaching for a correct diagnosis. Physicians should be knowledgeable to determine what type of mass they are dealing with. Thus, considering pseudo-Meigs' syndrome and carrying out laboratory examinations such as frozen section, could aid in accurately diagnosing and planning surgical management appropriate for the patient.

### ORAL PRESENTATIONS 6: FETOMATERNAL MEDICINE

#### TWO SUBTYPES OF SURGERY-CATEGORIZED UPPER-LATERAL INTRACAVITARY PREGNANCY IDENTIFIED BY MRI, A RETROSPECTIVE STUDY

Weili Xie<sup>1,2</sup>, Huan Yang<sup>2</sup>, Shuo Shao<sup>2</sup>, Ning Zheng<sup>2</sup>

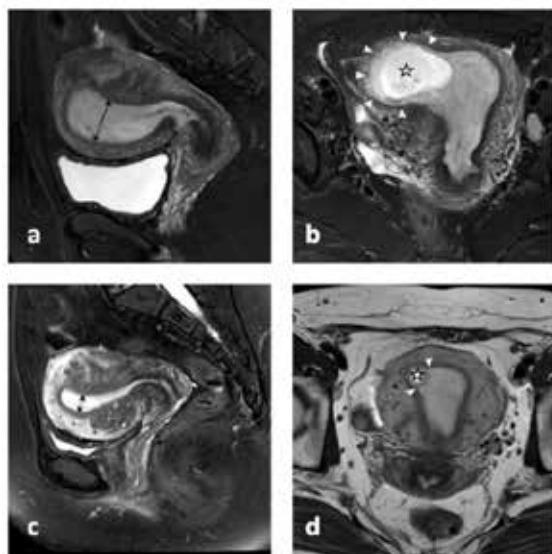
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**Problem statement:** Adopting either surgery-based or ultrasonography-based diagnostic criteria for upper-lateral intracavitary pregnancy (ULIP), previously named angular pregnancy, results in distinct pregnancy outcomes. We aimed to use preoperative MRI and correlated clinical characteristics to explore the potential causes of the heterogeneous unfavorable pregnancy outcomes of the surgery-categorized ULIP. **Methods:** This retrospective study involved 23 women with surgically and pathologically confirmed ULIP from January 2016 to March 2022. Two board-certified radiologists, blinded to the patients' information, independently reviewed the MRI images, and determined each MRI feature, including endometrial thickness (EMT) and peri-gestational sac (GS) endometrial interruption. Disagreements were resolved by discussion to achieve a consensus. Based on the cutoff value of EMT (11.5 mm), the patients were divided into above-cutoff EMT (n=17) and below-cutoff EMT (n=6) groups. **Results:** Two subtypes of surgery-categorized ULIP were identified. Type-I ULIP (n=17; EMT≥11.5 mm), when compared to the type-II ULIP (n=6; EMT<11.5 mm), demonstrated lower incidence of peri-GS endometrial interruption (2/17 [12%] vs 6/6 [100%]; P=0.001), higher logarithmic β-human chorionic gonadotropin (β-hCG) concentration (4.7±0.4 mIU/ml vs 4.2±0.6 mIU/ml; P=0.01), and lower dilatation and curettage rate (4/17 [24%] vs 5/6 [83%]; P=0.02). The below-cutoff EMT negatively correlated with β-hCG concentration (Odds ratio [OR]=0.05; P=0.03). The peri-GS endometrial interruption negatively correlated with EMT (OR=0.6; P=0.01) and logarithmic β-hCG concentration (OR=0.08; P=0.04). **Conclusions:** Surgery-categorized ULIP comprised two previously undefined obstetric entities with distinct imaging and clinical characteristics.







**MRI in two patients with either type-I (a and b) or type-II (c and d) upper-lateral intracavitary pregnancies (ULIP).**

(a) Uterine sagittal fat-suppressed, T2-weighted imaging showed an endometrial thickness (double-headed arrow) of 22.6 mm in type-I ULIP. (b) Uterine coronal fat-suppressed, T2-weighted imaging showed a gestational sac (star) and continuous peri-gestational sac endometrium (arrow heads) in type-I ULIP. (c) Uterine sagittal fat-suppressed, T2-weighted imaging showed an endometrial thickness (double-headed arrow) of 8.6 mm in type-II ULIP. (d) Uterine coronal T2-weighted imaging showed a gestational sac (star) and interrupted peri-gestational sac endometrium (arrow heads) in type-II ULIP.

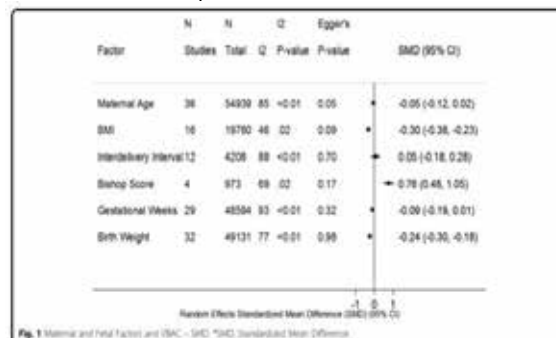
**IDENTIFICATION OF POTENTIAL FACTORS CONTRIBUTING TO SUCCESSFUL VAGINAL BIRTH AFTER CESAREAN SECTION (VBAC)- A META-ANALYSIS AND SYSTEMATIC REVIEW APPROACH**

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**Problem statement:** The aim of this study was to systematically analyze the peer-reviewed journals and articles to identify the connection between successful vaginal birth procedures after cesarean sections in previous deliveries. Data analysis was conducted for fetal and maternal factors to clarify the conflict between successful vaginal birth after cesarean section. **Methods:** The research was performed with a Meta-analysis of Observational Studies in Epidemiology (MOOSE) recommendations. Relevant pieces of literature published in Nursing and Allied Health Literature, Embase, Medline, and Cumulative index were included in the study. The literature was analyzed by two authors (Yanxin Wu and Yachana Kataria) to avoid any bias in selecting literature to be incorporated in the meta-analysis and study being conducted. Newcastle-Ottawa Scale was utilized to assess the risk of bias. Only those pieces of literature were selected for the study in which the sample population was women adopting the vaginal birth method after at least one previous encounter of low-transverse cesarean section. **Results:** A total of 94 studies were incorporated into the research comprising 66 retrospective observational studies and 28 prospective cohort studies. Randomized trials were not

recognized. A sample population of pregnant ladies included ranged from 28 to 75,086. Fetal and maternal factors were identified to be associated with successful VBAC procedures. Statistical significance of the previous VBAC, Bishop Score, White race, adjusted OR, and previous encounter to VB before CS were identified and will be provided in the article. Standard Mean Differences (SMD) were calculated for associated factors like birth weight, age, Body Mass Index (BMI), and Bishop Score. Statistical data was provided for the associated risk factors with VBAC. In addition, epidural anesthesia, fetal macrosomia, etc., were identified as barriers to successful VBAC procedure



Source: <https://link.springer.com/article/10.1186/s12884-019-2517-y> [1]

**Conclusion:** It was concluded that a successful VABC procedure could be a result of various factors, including birth weight, Bishop Score, diabetes, and previous vaginal birth. In addition, age, labor induction, obesity, and Hypertensive disorders complicating pregnancy (HDCP) can also be considered facilitators of VBAC. The results are considered beneficial for pregnant women with experience of cesarean section planning to adopt the vaginal birth method.

**10 YEARS OF TRIPLET PREGNANCIES – A TERTIARY CENTER EXPERIENCE**

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**Problem statement:** Triplets and other higher order multiple gestations are associated with notably increased maternal and fetal risks. Due to widely available assisted reproductive technology (ART), the rate of high order multiple pregnancies is higher than the naturally occurring rate. ART, particularly in vitro fertilization (IVF) and controlled ovarian hyperstimulation, accounts for almost 80 percent of triplet and higher order multiple pregnancies. Preterm birth is the most common cause of mortality and morbidity in triplet gestations, both spontaneous and iatrogenic. **Methods:** Between January of 2011 and December of 2021 there were a total of 15 triplet pregnancies delivered in our tertiary center. Data on these cases was collected and the general clinical data, prenatal examination and pregnancy outcomes were analyzed retrospectively. **Results:** We analyzed 15 women with a mean age of 32 years. 60% were primipara. 26,7% of pregnancies were dicorionic triamniotic and 66,7% were trichorionic triamniotic. 1 of the cases (6,7%) was monochorionic triamniotic. 50% of cases resulted from ART (13,3% from ovarian hyperstimulation). In 40% of cases, fetal growth restriction of at least one of the fetuses occurred. 93,3% of women were admitted to a specialized maternal care unit during pregnancy and 86,7% completed antenatal



corticosteroid therapy. Preterm membrane ruptured occurred in 20% of cases. The mean gestational age at birth was 32 weeks, and all babies were delivered via cesarean section. Mean Apgar Index at the 10th minute was 9 for all 3 fetuses, 95,5% of which required hospitalization in a specialized intensive neonatal care unit. There were no cases of intrauterine fetal demise, nevertheless one case of delivery at 24 weeks resulted in the loss of all three newborn babies. **Conclusion:** Triplet and higher order multiple pregnancies are becoming more frequent due to the dissemination of ART. There is a higher incidence of pregnancy complications and perinatal mortality when compared to singleton and twin pregnancies. An accurate early diagnosis, enhanced management, monitoring and adequate customized treatment are essential in improving potentially adverse outcomes.

### INDUCING LABOR AND ROUTE OF DELIVERY IN TWIN PREGNANCIES WHEN THE SECOND TWIN IS IN BREECH

Ines Gil Dos Santos<sup>1</sup>, Ines Castro<sup>1</sup>, Carolina Moura<sup>1</sup>, Antonio Braga<sup>1,2</sup>, Rosa Maria Rodrigues<sup>1</sup>, Daniela Goncalves<sup>1,2</sup>, Jorge Braga<sup>1,2</sup>

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**Problem statement:** The rate of planned cesarean delivery for twin pregnancies remains high, despite guidelines supporting trial of labor for pregnancies with a vertex-presenting twin. This might be influenced by concerns related to the birth of the 2nd twin, particularly if in nonvertex presentation. Some institutions preclude induction of labor in these cases, as some studies suggest it might be associated with lower rates of successful vaginal delivery. In our institution, induction of labor is permitted. This study aimed to evaluate the route of delivery in pregnancies with such characteristics after induction of labor as well as fetal and maternal outcomes. **Methods:** We analyzed 71 twin pregnancies who underwent induction of labor (26,57%) between January 2018 and December 2021 in our institution. Clinical data on pregnancy management and outcomes was collected and analyzed retrospectively. We divided pregnancies into 2 groups: 2nd twin vertex-presentation (56) and 2nd twin non-vertex presentation (15); the 1st twin was in vertex in all cases. We described each group individually and compared results regarding route of delivery and other outcomes between groups. **Results:** In the first group, mean maternal age was 33,43 years. 70% were primipara and 79% were dichorionic (DC) pregnancies. Mean gestational age at birth 36,24 weeks. The 1st twin was born vaginally in 72% of cases and the 2nd in 70%. Mean Apgar Index (AI) after the 1st min was 8 for both twins. In the second group, mean age was 33,20 years, 53% were primipara. 87% of pregnancies were DC. Mean GA at birth was 36,87 weeks. Vaginal delivery occurred in 73% of cases for the 1st and for the 2nd twins. Mean AI after the 1st min was 9 and 8 for the 1st and 2nd twins, respectively. There were no significant statistical differences in the rate of cesarean delivery between groups ( $p=0,781$ ) nor in the rate of pregnancy complications. **Conclusion:** The two groups had comparable rates of vaginal delivery. Despite the somewhat limited sample size, these findings seem to support induction of labor in cases of a non-vertex presenting second twin, with no apparent impairment on vaginal delivery success.

### PROGRAMMABLE BIRTHS IN GESTATIONAL DIABETES MELLITUS: MINIMIZING RISKS — IMPROVING MATERNAL AND PERINATAL OUTCOMES

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**Background.** Modernity is characterized by an avalanche-like increase in the frequency of gestational diabetes mellitus (in 4–5 times over the past 20 years). The main tasks of the work in the risk strategy of gestational diabetes mellitus are: prediction of pregnancy complications and the searching for new technologies for their delivery. To date, there are still very controversial questions about the timing and methods of delivery of patients with gestational diabetes mellitus. Due to the high incidence of unfavourable perinatal outcomes in gestational diabetes mellitus, the percentage of cesarean sections in some countries reaches 60%, which leads to maternal morbidity and a decrease in the reproductive health of the population. Aims — is to improve of maternal and neonatal outcomes based of the rational choice of delivery technology in gestational diabetes mellitus. **Methods.** A retrospective analysis of delivery methods was performed in 9769 patients with gestational diabetes mellitus at full-term gestation. **Results.** The developed and implemented programmed delivery technique was an alternative to cesarean sections, it allowed to reduce the frequency of abdominal delivery, while improving maternal and neonatal outcomes. The frequency of cesarean sections in programmed delivery was 2 times lower than in the presented facilities and significantly lower than in the population (10.0–10.7%). In the programmed delivery group there was a significant reducing morbidity of hypoglycemia in newborns compared to planned caesarean section — by 2 times and respiratory distress syndrome — by 2.5 times ( $p 0.05$ ). The indices of cerebral status impairment, birth traumatism corresponded to physiological childbirth and did not exceed the average population. **Conclusions.** The method of programmed delivery presented in this paper was one of the reserves for reducing the frequency of cesarean sections and allowed to personalize delivery in respiratory distress syndrome.

**Keywords:** gestational diabetes mellitus, programmed delivery, cesarean section

### MATERNAL AND NEONATAL OUTCOMES IN LATE PRETERM PREECLAMPSIA: A THREE YEAR RETROSPECTIVE STUDY

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**Problem Statement:** The timing of delivery of patients with preeclampsia remains to be a subject of debate. Balancing maternal safety and the risk and benefits of delivering a preterm baby is needed. The primary objective of this study was to determine the adverse maternal and neonatal outcomes of pregnant women with hypertensive disorders between 34 – 36 6/7 weeks age of gestation at the Philippine General Hospital. **Methods:** This was a retrospective cohort study using socio-demographic data, maternal and neonatal outcomes of women with pregnancy-induced hypertension. Patient medical records review was done to source in-patient data to determine if the patients were managed expectantly, induced at a specific age of gestation or were delivered immediately due to a maternal or neonatal indication. **Results:** A total of 156 patients were included in this study. Most of the patients ( $n = 122, 78.2\%$ ) with late preterm preeclampsia were delivered immediately upon admission and 25% had adverse maternal outcomes including



Hemolysis, Elevated Liver enzymes and Low Platelets (HELLP) syndrome, eclampsia, abruptio placenta, posterior reversible encephalopathy syndrome, pulmonary edema and maternal death. Around 16.7% of patients who underwent expectant management had maternal complications. Neonatal adverse outcomes in both immediate and expectant management group were comparable at 36.9% and 40%, respectively. Around 50.6% of neonates were admitted at the neonatal intensive care unit (ICU) and majority were due to prematurity. **Conclusion:** Recommendation to do expectant management versus immediate delivery on preeclamptic patients in late preterm remains to be individualized. More data are needed to draw conclusions on the risk and benefits of induction of labor at a certain age of gestation in patients with stable fetomaternal condition. Doing randomized control trials for planned early delivery versus expectant management for late preterm preeclampsia are needed in the local setting.

### VERY EARLY AND EXTREME PRETERM LABOR – WHAT IS THE OPTIMAL MODE OF DELIVERY?

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The optimal mode of delivery in preterm births has long been subject of discussion. While some authors point towards the protective effect of caesarean, others stress the importance of vaginal labor for lung maturity. Nevertheless, findings regarding maternal and neonatal outcomes remain inconclusive. We performed a case-control study in pregnant women with spontaneous single preterm labor below 32 weeks of gestational age. Data were retrieved from digital platforms regarding obstetric and neonatal outcomes. These women were divided according to their mode of delivery and object of comparison. Group 1 consisted of 24 pregnant women who delivered vaginally and group 2 of 11 women who underwent C-section. Most were admitted due to premature rupture of membranes and/or threatened preterm labor. Corticosteroids were administered in 97% of the pregnancies, and magnesium sulfate in 40%. No significant differences were found between groups regarding the latter. Mean gestational age at delivery was 29 weeks in group 1 and 30 weeks in group 2 ( $p=0.114$ ). Average weight at birth and APGAR at 5 minutes weren't significantly different between groups. Non-vertex presentation deliveries occurred in 8% in group 1 and 81% in group 2. 17% of the newborns in group 1 required resuscitation measures, in opposition to 45% in group 2 ( $p=0.07$ ). All neonates required ICU admission. One traumatic lesion was registered in group 1 (septal bone deviation). All major neonatal complications (jaundice, sepsis, respiratory distress syndrome, retinopathy, necrotizing enterocolitis and intracranial bleeding) were more frequent in group 1, but none of the differences were statistically significant. The average number of days of hospitalization wasn't significantly different between groups. Three of the newborns ended up deceased, 2 of them belonging to group 1. No maternal complications were registered in neither of the groups. The severity of preterm labor (extreme or very early), and birth weight (low, very or extremely low) weren't considered predictive of APGAR at 5 minutes, as shown by a regression analysis. Although neonatal complications were more frequent in vaginal deliveries, our results show no significant differences between groups. Nevertheless, differences regarding the fetal presentation at delivery might have constituted a source of bias.

### RISK OF PREECLAMPSIA AND FGR IN CHRONIC HYPERTENSIVE PREGNANT WOMEN – APPLICABILITY OF A LOWER BLOOD PRESSURE THRESHOLD

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In 2017, the American College of Cardiology lowered the threshold for diagnosis of hypertension to 130/80 mmHg, leaving doubt about its applicability in pregnant women. Only few studies have evaluated the impact of this redefinition on the risk of developing preeclampsia and other pregnancy complications. We performed a retrospective analysis of women with chronic hypertension followed in our centre between 2019 and 2021. Blood pressures were recorded at 32 weeks in the office. Women were divided according to the measured BP value. Group A consisted of women with blood pressures under 130-80 mmHg; group B between 130-140 and/or 80-90 mmHg; and group C of women with BP above 140/90 mmHg. A comparison was made between groups regarding the incidence of preeclampsia and fetal growth restriction and birth weight. Group A, B and C consisted of 52, 40 and 11 women, respectively. Significant differences were found between groups regarding treatment with anti-hypertensives ( $p=0.001$ ), with the highest proportion of medicated pregnant women belonging to group C. Preeclampsia was diagnosed up to 37 weeks in 11.5% of the women in group A; 30% of the women in group B; and 45% in group C, with a significant difference found between groups ( $p=0.016$ ). When comparing exclusively group B and C, no significant differences were found regarding the development of preeclampsia ( $p=0.336$ ). With regard to risk screening for preeclampsia, negative predictive value was higher when considering 130-80 mmHg the threshold, instead of 140/90 mmHg (88.4 vs 80%, respectively). On the contrary, positive predictive value was higher when considering the cut-off 140/90 mmHg (45 vs 33.3%). As for fetal growth restriction's incidence, no significant differences were found between groups. Nevertheless, FGR was more frequent in women belonging to group C. In the same line, while no significant differences were found between groups regarding birth weight, the latter was higher in women from group A. In our sample, lower thresholds of blood pressure, while increasing sensitivity, therefore allowing for a more intensive pregnancy surveillance and precocious diagnosis of preeclampsia, are accompanied by a lower specificity, subjecting both mother and fetus to iatrogenicity.

### KNOWLEDGE AND PRACTICES REGARDING FOLIC ACID SUPPLEMENTATION AMONG PREGNANT WOMEN IN A RURAL AREA OF CENTRAL INDIA: A CROSS SECTIONAL STUDY

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**Problem statement:** After conquering many communicable diseases, it is time to stress on other causes of neonatal and infant mortality. Congenital malformations are one of the important causes among them. Neural tube defects are one of the most common congenital anomalies. NTDs are preventable if folic acid is supplemented before and during



conception. Current study was planned to assess the knowledge and practices of folic acid supplementation among pregnant women in first trimester of their pregnancy in a rural area of Chhattisgarh state of India. **Methods:** The study was conducted between January-December 2019 among pregnant women in Abhanpur block, Raipur district, Chhattisgarh (India). Abhanpur block was randomly selected among four blocks of Raipur district. A total of 400 pregnant women were interviewed using a predesigned, pretested questionnaire. Proportion of different variables calculated and chi-square test was performed to test for significance. **Results:** About 62.50% of women reported having ever heard of folic acid. Overall, knowledge scores suggested intermediate to low level of knowledge about FA. There was significant association between awareness and use of folic acid. Among women who have heard of FA, 81.1 % women were taking FA. Education and age, were the factors determining knowledge of folic acid in pregnancy. **Conclusion:** Study findings suggest that overall knowledge scores are intermediate to low and a significant association was observed between use of folic acid and the awareness of the pregnant women. Hence there is need for the pregnant females to be educated on the importance of folic acid consumption during preconceptional period and first trimester of pregnancy. The health care workers also should be trained properly to motivate the expectant mothers to consume folic acid.

#### PRETERM BIRTH RESEARCH IN SOUTHEAST ASIA AND ITS ASSOCIATION WITH SOCIOECONOMIC DETERMINANTS AND BURDEN OF DISEASE: A BIBLIOMETRIC ANALYSIS

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**Problem statement:** Preterm birth (PTB) is one of the top preventable causes of neonatal mortality. Researches on prevention and management of preterm birth is essential in finding solutions to decrease PTB rates. The aim of this study was to assess research productivity on PTB in Southeast Asian (SEA) countries and its correlation with socioeconomic characteristics and burden of disease. **Methods:** A systematic review of PTB publications by SEA authors indexed in Scopus, PubMed, ClinicalTrials.gov and Cochrane was done. The correlation of bibliometric indices, namely Scopus citations, and PlumX metrics indices (citations, usage, captures, mentions, and social media), with socioeconomic status and burden of preterm birth in SEA countries were analyzed by computing for the correlation coefficient (r) and p-value at an alpha of 0.05. **Results:** Thailand had the highest number of publications and the highest count across all bibliometric indices among all countries in SEA. The percent gross domestic product (GDP) per capita allotted for research and development (R & D) had direct correlation with publications and captures while crude birth rates had indirect correlation with publications, citations, and captures. Neonatal mortality had indirect correlation with publications and captures. **Conclusion:** Support for R & D is essential to increase research productivity in SEA, which in turn may help in finding solutions to decrease the rate of PTB in the region. **Keywords:** Bibliometric analysis, preterm birth, prematurity, gross domestic product, Southeast Asia  
**Disclosure of interest:** The authors declare that they have no conflict of interest.

#### CHANGING TRENDS OF MATERNAL MORTALITY IN TERTIARY CARE CENTRE AND TEACHING HOSPITAL OF CENTRAL INDIA: A RETROSPECTIVE STUDY

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**PROBLEM STATEMENT:** Maternal mortality is the death of a woman while pregnant or within 42 days of termination of pregnancy irrespective of duration and site of pregnancy from any cause related to or aggravated by pregnancy but not from accidental or incidental causes. In current scenario most of maternal death are preventable due to increase number of institutional delivery and improved community level healthcare system along with implementation of laqshy program. The aim of this study is to find out the causes of maternal mortality in tertiary care setup. **METHOD:** A retrospective study was conducted by reviewing the hospital records of maternal death register and to study the causes of maternal death and complications leading to maternal death over the period of one year from January 2021 to December 2021. **RESULTS:** Maternal mortality ratio in present study is 357.7 per Hundred thousand live births. There were total eighteen maternal deaths out of 5037 live births during our study time. Majority of deaths occurred in age group 18-25 years, hypertensive disorder of pregnancy and antepartum eclampsia is leading cause of death in our study. **CONCLUSION:** Hypertensive disorders are major cause of maternal death now days as death from obstetric hemorrhage is now reducing due to better health care and active management of third stage and early referral. The provision of skilled care and timely management of complication can lower maternal mortality in our setup. Early detection and prediction of hypertensive disorders and their complication and timely referral to higher center can save death from hypertensive disorder of pregnancy.

#### ORAL PRESENTATIONS 7: FETOMATERNAL MEDICINE

##### PREDICTORS OF ADVERSE PERINATAL OUTCOMES IN FETAL GROWTH RESTRICTION USING A COMBINATION OF MATERNAL CLINICAL FACTORS AND SIMPLE ULTRASOUND PARAMETERS

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**Problem statement:** Predictors of adverse perinatal outcomes in fetal growth restriction (FGR), defined as an estimated fetal weight (EFW) of 10th percentile, is of interest for planning management in order to decrease fetal morbidity and mortality. In developing countries, high-technology ultrasonography and experts in maternal-fetal medicine are not widely available. Using sophisticated investigation as in developed countries are not practical and lack of generalizability in low-resource settings. Therefore, this study aimed to identify predictors of adverse perinatal outcomes in pregnancies with FGR using a combination of maternal clinical factors and simple ultrasound parameters. **Methods:** A case-control study of 370 singleton pregnancies with FGR, who delivered at Songklanagarind Hospital from January 2017 to June 2022, was conducted. Pregnancies with fetal anomalies were excluded. Simple ultrasound parameters



consisted of EFW, Doppler ultrasound of umbilical artery and amniotic fluid index (AFI). Adverse perinatal outcome was defined as a composite of perinatal death, admission to neonatal intensive care unit  $\geq 7$  days, Apgar score at 5 minute 7, bronchopulmonary dysplasia, meconium aspiration syndrome, intraventricular hemorrhage, necrotizing enterocolitis, sepsis, respiratory distress syndrome, umbilical artery pH 7.2 and need mechanical ventilation. Multivariate logistic regression analysis was used to identify predictive factors. A p value of 0.05 was considered significant. **Results:** Adverse perinatal outcomes occurred in 165 (44.6%) cases; 21 (5.7%) cases ended in perinatal death. Predictive factors of adverse perinatal outcomes were: a history of pregnancy-induced hypertension (aOR 2.06, 95%CI 1.01-4.19), chronic hypertension (aOR 4.07, 95%CI 1.32-12.56), pregnancy-induced hypertension (aOR 2.97, 95%CI 1.29-6.84), maternal weight gain 8 kg (aOR 1.91, 95%CI 1.11-3.27), early-onset FGR (aOR 1.84, 95%CI 1.10-3.07), EFW 5th percentile (aOR 2.18, 95%CI 1.29-3.69), AFI 5 cm (aOR 5.31, 95%CI 2.38-11.88) and abnormal umbilical artery Doppler (aOR 2.56, 95%CI 1.42-4.61). Area under the ROC curve for the 8-item predictive model was 0.799 (95% CI 0.753-0.845). **Conclusion:** An 8-item predictive model comprised of 5 maternal clinical factors and 3 simple ultrasound parameters could predict adverse perinatal outcomes in FGR. Validation of this model is mandatory for clinical use in the future. *The authors declare no conflict of interest.*

#### ARTIFICIAL INTELLIGENCE FOR AUTOMATIC CLASSIFICATION OF OCCIPUT ANTERIOR/POSTERIOR/TRANSVERSE POSITIONS

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**Problem statement:** The use of transperineal ultrasound has been shown to be more accurate than digital examination, and to be associated with better outcomes when performing an operative vaginal delivery. The aim of this study is to develop an AI-algorithm, that automatically classifies transperineal-US images into fetal occiput Anterior (OA), Posterior (OP) or Transverse (OT) positions, using two Convolutional Neural Networks (CNNs) working in sequence. **Methods:** Multicenter prospective study including 21 Maternities and conducted on singleton term pregnancies with cephalic presenting fetus in the second stage of labor. Transperineal-US images of the fetal head on axial plane were selected and classified as fetal OA, OP or OT-position. Two CNNs were independently trained to classify OA/non-OA (CNNA/nA) and OP/OT (CNNP/T) position. Two balanced datasets were created for each CNN. Both CNN were trained on labeled data, i.e., training dataset, during the training phase in order to correctly assess the fetal head position, by exploiting geometric, morphological and intensity-based features of the images. During the testing phase, we evaluated the diagnostic accuracy of both CNN together on unlabeled data, i.e., testing dataset, as follows: 1) the image is classified by CNNA/nA as OA or non-OA-position. 2) if the image is classified as OA-position, the algorithm ends. 3) if the image is classified as non-OA-position, the CNNP/T classifies the image as OP or OT-position. **Results:** Over the period of 24 months, 1191 transperineal-US images of the fetal head on axial plane were obtained. The CNNA/nA correctly classified the fetal occiput position into OA or non-OA-position in 98.3% of the cases. The CNNP/T correctly classified the fetal head position into

OP or OT-position in 90.7% of the cases. The overall accuracy of the AI-algorithm for the classification of OA, OP or OT-positions was 94.9%. **Conclusions:** Our AI-algorithm for the automatic assessment of the fetal head position at transperineal-US can accurately distinguish between OA, OP and OT-positions at transperineal axial plane.

#### THE ACCURACY OF NON-INVASIVE PRENATAL SCREENING WITH CELL-FREE DNA FOR SEGMENTAL COPY NUMBER VARIANTS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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**Problem statement:** Non-invasive prenatal screening (NIPS) which utilises cell-free DNA is a highly accurate method of prenatal screening for Trisomy 21. Recently, NIPS panels have been expanded to include chromosomal copy number variants (CNVs), including microdeletions such as DiGeorge syndrome, although the screening performance for these anomalies is unclear. **Methods:** This was a systematic review and meta-analysis to investigate the sensitivity, specificity, and positive predictive value (PPV) of NIPS for CNVs. Articles published in EMBASE, PubMed or Web of Science before July 2022 were screened for inclusion. The PPV was calculated and pooled with random-effects models for double-arc sine transformed proportions, using results with diagnostic confirmation. Overall sensitivity, specificity and a summary receiver-operating characteristics (ROC) curve were calculated using bivariate models. The risk of bias was assessed using QUADAS-2. This protocol was registered with PROSPERO (March 23rd, 2021, CRD42021250849) prior to initiation and results reported according to PRISMA recommendations. **Results:** The search retrieved 7,666 articles for review, of which 60 were included in the final analysis, detailing screening results from 1,444,597 women. The pooled PPV was 38.0%, (95% CI 30.7% to 45.6%), with substantial statistical heterogeneity ( $I^2 = 94.2\%$ ). When subgroup analyses were performed, the PPV decreased amongst cohorts of predominantly (50%) low baseline aneuploidy risk women (no pre-screening risk factors), PPV = 31.1% (95% CI 22.5% to 40.4%), as well as in the sensitivity analysis of PPV using only studies with low-risk of bias in all four QUADAS-2 domains, PPV = 32.2% (95% CI 21.3% to 44.1%). The PPV for DiGeorge syndrome based on results from 15 articles was 48.9% (95% CI 23.4% to 74.8%). Bivariate meta-analysis estimated sensitivity and specificity to be 77.4% (95% CI 65.7% to 86.0%), and 99.4% (95% CI 98.0% to 99.8%), with an area under the summary ROC curve of 0.947 (95% CI 0.776 to 0.984). **Conclusion:** While approximately three of every four CNVs will be detected by



NIPS, just over one third of women who receive a high-risk result will have an affected fetus. This value is of importance for screening counselling.

**THE POSITIVE PREDICTIVE VALUE OF NON-INVASIVE PRENATAL SCREENING FOR RARE AUTOSOMAL TRISOMIES AND COPY NUMBER VARIANTS, AND ASSOCIATIONS WITH CONFINED PLACENTAL MOSAICISM AND FETAL GROWTH RESTRICTION**

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**Problem Statement:** Following the success of non-invasive prenatal screening (NIPS) in the identification of Trisomy 21, screening panels have been expanded to assess the entire fetal genome, with particular anomalies of interest being rare autosomal trisomies (RATs) and segmental copy number variants (CNVs). Unfortunately, the screening performance for these anomalies appears less robust than that of targeted screening, which is potentially due to a higher proportion of false-positive results arising from confined placental mosaicism (CPM). We here investigate the positive predictive values (PPVs) of NIPS for RATs and CNVs. We also studied the pregnancy outcomes of false-positive results, to assess for placental insufficiency associated with potential CPM. **Methods:** A retrospective cohort study of women who, between September 2019 and July 2021, received a high-risk NIPS result for a RAT or CNV at one of three ultrasound services in Melbourne and Sydney, Australia. PPVs were calculated using antenatal or postnatal cytogenetic analysis to identify true- (fetal anomaly confirmed) and false-positive results. Birth outcomes were identified for cases with false-positive results. **Results:** Of 7,341 NIPS performed, there were 86 high-risk results for RATs and 77 for CNVs; of which three and 13 were true-positive results, respectively. Based on diagnostic outcomes, the calculated PPVs were 3.8% (3/78, 95% CI 0.8 – 10.8%) for RATs and 18.8% (13/69, 95% CI 10.4 – 30.1%) for CNVs. The odds ratio of fetal confirmation in cases with ultrasound anomalies was 31.9 (95% CI 8.4 – 120.8). Birth outcomes were obtained for 131 (64.9%) cases of false-positive results. Those with false-positive RATs had a significantly higher proportion of infants born below both the tenth and the third percentiles than expected (19.6% (p = 0.02) and 8.9% (p = 0.01) respectively). No associations with fetal growth restriction were observed in the false-positive CNV cohort. **Conclusions:** The odds of fetal confirmation following a high-risk NIPS result are approximately one in five for CNVs, and less than one in 25 for RATs. This likelihood increases in the presence of fetal structural abnormalities observed on ultrasound. A false-positive RAT result may indicate CPM, which increases the risk of fetal growth

restriction.

**FETAL CARDIAC RHABDOMYOMA IN THE CONTEXT OF MATERNAL TUBEROUS SCLEROSIS – A CASE REPORT**

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**Introduction:** Tuberous sclerosis complex (TSC) is a genetic, autosomal dominant multisystem syndrome characterized by the growth of benign tumors in several organs, such as the skin, central nervous system, heart, kidney and lung. Fetal cardiac rhabdomyoma can be its first manifestation in more than 50% of cases and its diagnosis is made by fetal echocardiography or cardiac magnetic resonance imaging. 90% of cardiac rhabdomyomas are multifocal, though isolated tumors do occur, and 30 to 50% of affected fetuses also have cerebral tuberous sclerosis. Large tumor size is significantly associated with poor neonatal outcome. **Reports:** We report the case of a 38-year-old pregnant woman with epilepsy since her childhood and with a recent diagnosis of TSC after cerebral, pulmonary and renal findings, with normal genetic screening. This was her first pregnancy, and it was properly surveilled since the beginning. Blood tests and serologies were normal. Several fetal ultrasounds were performed, including fetal echocardiograms, where five fetal cardiac rhabdomyomas were observed, one of them partially obstructing the pulmonary artery outlet, with no other major abnormalities. The baby, a girl, was delivered by elective caesarean section at 38 weeks and 4 days of gestational age. After she was born, she was already diagnosed with numerous cardiac rhabdomyomas and multiple cortical and ocular tubers. She is now hospitalized in the neonatology unit, hemodynamically stable and undergoing pharmacological treatment with Everolimus. **Conclusions:** An early and accurate diagnosis is essential to provide these fetus appropriate vigilance and treatment. A multidisciplinary approach of pregnant women suffering from TSC is recommended and Obstetricians are an important part of it, as a detailed prenatal study is required. In conclusion, a pre-implantation genetic screening should be offered to this patient in a future pregnancy, if desired.

**CLINICAL OVERVIEW IN PREGNANCY WITH COVID-19 AT PROF. DR. I.G.N.G. NGOERAH HOSPITAL PERIOD OF APRIL 2020 – MARCH 2021**

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**Abstract Problem Statement:** Pregnant women are one of the populations that are susceptible to Coronavirus disease 2019 (COVID-19) infection due to physiological changes during pregnancy that are an adaptive response to pregnancy such as diaphragmatic elevation, increased oxygen consumption, and airway mucosal edema can also make pregnant women more intolerant of hypoxia. In addition to being vulnerable, COVID-19 in pregnant women may have a different clinical course from the general population. This study aims to determine the demographic and clinical characteristics in pregnancy with COVID-19 at Prof. Dr. I.G.N.G. Ngoerah Hospital, Bali, Indonesia. **Methods:** This study was a cross-sectional descriptive study using secondary data derived from



patient medical records and carried out in the delivery room and medical record installation at Prof. Dr. I.G.N.G. Ngoerah Hospital, Bali, Indonesia for the period of 1 April 2020 to 31 March 2021. Results: Of the 275 patients, most were in the age range of 26-30 years (46.55%), in the third trimester (81.45%), and patients came alone (54.18%). Most of the patients came without symptoms with reactive rapid antibody results (60.97%). Of the 197 patients who delivered, 84.77% had CS and 66.55% without oxygen therapy. 69.69% of patients experienced complications, and the mortality rate was 1.09%. The highest birth weight was 2500 grams by 76.8%, with the good neonatal outcome (82.92%) and negative swab results (89.45%). Inflammatory markers tend to increase as symptoms increase. NLR, procalcitonin and ferritin were markedly increased from moderate symptoms to severe-critical symptoms. The same was true for ferritin levels, where there was a sharp rise in significant symptoms. Meanwhile, procalcitonin levels have started to increase quite strikingly from moderate symptoms to the highest in severe symptoms. Conclusion: It is hoped that this demographic and clinical picture would further our understanding of Covid-19 and help us develop methods to lessen the disease's severity and spread to enhance maternal and newborn outcomes. Keywords: COVID-19, pregnancy, demographic, characteristics.

#### PREGNANCY AND SPONTANEOUS CORONARY ARTERY DISSECTION (SCAD)

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Spontaneous Coronary artery dissection is a non-traumatic and non-iatrogenic separation of the coronary arterial wall and is an infrequent cause of acute myocardial infarction. A major cause of heart attack in young, otherwise healthy women without known risk factors. The Exact cause is not yet known. In pregnant or early postpartum women, dissection may be a consequence of increased physiological hemodynamic stresses or from hormonal effects weakening the coronary arterial wall. The exposure to recurrent and chronic hormonal pregnancy changes can further increase SCAD risks in women with multiple previous births (multiparity), and dissection in all arterial beds are more common during pregnancy. I would present here two pregnant ladies who had Spontaneous Coronary artery dissection (SCAD) during pregnancy and delivered in our hospital. **First case:** 30 Years old lady Gravida 6 Para 5, presented with chest pain at 27 weeks with elevated Troponin levels. She had previous history of DVT. She was diagnosed as non ST segment elevated myocardial infarction. Echocardiogram revealed ballooning of the apex with apical septal akinesia significant wall motion abnormalities. Her Coronary angiography was suggestive of Type 2A Mid/Distal Left Anterior Descending (LAD) SCAD. She was managed in collaboration with cardiologists and had Cesarean section at 31 weeks in view of progressive polyhydramnios and preterm labor, transverse lie and previous 1 cesarean section. **Second case:** 38 years old lady, Gravida 3 Para 2 with Previous 2 cesarean sections presented with acute coronary syndrome at 6 weeks pregnancy. She was diagnosed as Type 2 SCAD on coronary angiography. Her Echocardiogram depicted Regional wall motion abnormality in the LAD territory at rest. She was managed jointly by cardiologists and obstetricians and had an elective cesarean section at 38 weeks. **Conclusion:** There is an increasing prevalence of cardiovascular disease in women of childbearing age. Obstetricians should be vigilant and always keep it as one of their differential diagnosis for pregnant women presenting with epigastric and chest pain. It

is associated with high maternal mortality if not promptly managed. Our both cases were diagnosed and managed well.

#### TOWARDS PERSONALIZED PRENATAL HEALTHCARE

Michael Sinosich

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**AIM:** The quest for "Holy Grail" of cell-based non-invasive prenatal screening is a path strewn with numerous corporate corpses. Why? **BACKGROUND:** Cell-based non-invasive prenatal screening (cbNIPS) remains THE "Holy Grail" of personalized prenatal healthcare. Despite huge investments and numerous ventures, a population based screening program remains elusive. Technological advances in downstream analyses of single cells combined with artificial intelligence (AI) guide microscopy, cell based NIPS remains a laborious and expensive custom procedure. The problem remains at the very first step, i.e., precise and rapid target cell identification and isolation. The lack of success at starting point, means that cbNIPS relies on AI – microscopy for target cell dissection and subsequent genomic interrogation. Target cells include fetal nucleated red blood cells (fnRBC) and extravillous trophoblast (EVT). Here is demonstrated the potential for a unique alternate target cell – the syncytiotrophoblast (SCT) cell. SCT cell is a terminally differentiated fusion of underlying cytotrophoblast (CTB) cells. SCT cells form the interface between maternal circulation and fetal-placental tissue and are present from very early stages of placentation, well before development of fetal vasculature. **METHODS:** Murine monoclonal antibodies were produced against PAPP-A purified from pooled pregnancy serum and term placental tissue. Clone 25-1 was selected for further investigation. **RESULTS:** From a series of non-commercial monoclonal antibodies (MAbs) generated against PAPP- A, clone 25-1 was selected for further investigation.



Figure 1: Left: Immunohistochemical localisation with MAb 25-1 on placental tissue from 7 week gestation. Right: SCT cell isolated with MAb 25-1. Unlike commercial anti-PAPP-A antibodies, this MAb specifically reacted with SCT cells (Figure 1) and was applied to immunological isolation of polynucleated SCT cells. As opposed to fetal nucleated (fn)RBC or extra villous trophoblast (EVT) cells which provide a single nucleus (approx. 6.3pg genomic DNA), one SCT cell can provide up to 50 nuclei or 300 pg genomic DNA for analysis. **CONCLUSION:** The unique and specific reactivity of MAb25-1 for SCT cells provides support that this combination of monoclonal antibody and target placental cell, could be the "Holy Grail".

#### TROPHOBLAST INDEX: A NOVEL NON-INVASIVE PRENATAL SCREEN

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**AIM:** With the adoption of cfDNA based screening for targeted fetal aneuploidy, has "the baby been thrown out with the bathwater"? **BACKGROUND:** It has long been established that a prerequisite for successful pregnancy outcome, is



optimal trophoblast physiology and placentation. Hence, why non-invasive prenatal screening (NIPS) is based on analysis and quantitation of trophoblast-derived products, such as, nucleic acids and hormones. In this report is described the clinical application of a novel index of trophoblast status and the efficacy of identifying at risk pregnancies. **METHODS:** This retrospective study consisted of pregnancies with normal outcome (n=687) and pregnancies with abnormal outcomes (Table 1). Statistical analyses were performed with SPSS (IBM) and Excel (Microsoft).

**RESULTS:**

Category	Number	Median	Category	Number	Median
Normal	687	1.222	Normal	687	1.222
Failed <test	282	0.034	Trisomy 13	26	0.116
Failed <= 14 wks	89	0.086	Trisomy 18	103	0.038
Failed >= 14 wks	62	0.853	RATs	11	0.292
Anembryonic	26	0.061	99XXX	43	0.006
SGA	87	0.781	99XXY	8	1.084
Premature	4	0.508	Trisomy 21	246	0.782
GTD	10	21.406	CPM	7	0.447

Table 1: Summary of study group and median trophoblast index values

As indicated in Table 1, median trophoblast index (TI) values differed greatly between pregnancies with normal outcome and those pregnancies which failed before term. TI values were also markedly depressed in pregnancies carrying fetuses with autosomal aneuploidies. TI values were also depressed in pregnancies delivered before term and in pregnancies delivered with SGA fetuses. **CONCLUSION:** Trophoblast Index (TI) values provides an improved cost effective indicator of pregnancy prognosis, identifying fetal-placental disorders beyond the reach of frontline targeted or expanded cfDNA screening.

**RECURRENT PREGNANCY LOSS (RPL): DOES THE NUMBER OF MISCARRIAGES AFFECT THE FINAL OUTCOME?**

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The definition of RPL varies according to the guidelines considered, from two miscarriages to three consecutive pregnancy losses.

The purpose of this study is to determine whether the number of miscarriages is influenced by patients' characteristics and etiological factors for RPL as well as its impact on subsequent pregnancies outcome. A retrospective study was performed at a Portuguese tertiary centre from January 2019 to June 2021 including women referred to our Unit with two (Group 1 – G1) or more (Group 2 – G2) pregnancy losses. Statistical analysis was performed using SPSS, with a p-value 0.05 as statistically significant. In total, 233 women were included: 150 with two miscarriages (G1) and 83 with more than two (G2). In G2, 66.3% had 3 miscarriages and the maximum was 7 in one patient. In both groups, RPL was mainly secondary and from the same partner. Patients from G2 were significantly older (G1: Md 36y vs G2: Md 38y, p=0.014). Causal investigation for RPL was performed in 58.0% (G1) and 80.7% (G2). The only significant difference between groups refers to uterine defects (G1: 10.1% vs G2: 23.9%, p=0.018). Considering risk factors and the etiological investigation, a causative factor was identified in 34.0% (G1) and 47.0% (G2) (p=0.051). A subsequent pregnancy with a live birth was conceived by 38.0% of patients from G1 and 24.1% from G2 (p=0.031) with a median interpregnancy interval of 5 (G1) and 8 months (G2) (p=0.08). The prescription of prophylactic low molecular weight heparin was significantly higher in G2 (G1: 19.3% vs G2: 70.0%, p0.001), with no significant difference in the use of medications as progesterone or aspirin. Most of these fetuses were delivered at term, without major

complications. As expected, higher numbers of miscarriages were seen in older women. In this group, uterine defects were more common. Additionally, the likelihood of a successful subsequent pregnancy was higher in the group of younger women with fewer miscarriages, being the outcomes equally good in both groups. Further research is needed to determine the ideal approach in RPL especially regarding women with less miscarriages, aiming supportive care and to avoid over-intervention.

**A RISK SCORE MODEL TO PREDICT ADVERSE PERINATAL OUTCOMES IN FETAL GROWTH RESTRICTION USING A COMBINATION OF MATERNAL CLINICAL FACTORS AND SIMPLE ULTRASOUND PARAMETERS**

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**Problem statement:** Fetal growth restriction is associated with adverse perinatal outcomes including short- and long-term morbidity and mortality. Using simple parameters to predict adverse outcomes is useful for planning management, especially in countries with low-resource settings. This study aimed to establish a multivariate risk-scoring model for prediction of adverse perinatal outcomes in fetal growth restriction using a combination of maternal clinical factors and simple ultrasound parameters. **Methods:** A case-control study of 370 singleton pregnancies with fetal growth restriction was conducted from January 2017 to June 2022. Adverse perinatal outcomes, defined as a composite of perinatal death and admission to neonatal intensive care unit (NICU) were diagnosed in 165 (44.6%) cases. Multivariate logistic regression analysis was used to create the best fitting model for prediction of adverse perinatal outcomes. The discriminative ability was measured with an area under the receiver operating characteristic curve (AUC). Weighted score for each significant factor was created. **Results:** There were eight significant predictors consisting of 5 maternal clinical factors and 3 simple ultrasound parameters, with total scores ranging from 0 to 15. Those were: 1) a history of pregnancy-induced hypertension (score =1); 2) chronic hypertension (score = 3); 3) pregnancy-induced hypertension (score = 2); 4) early-onset fetal growth restriction (score = 1); 5) maternal weight gain 8 kg (score = 1); 6) estimated fetal weight 5th percentile (score = 2); 7) amniotic fluid index 5 cm (score = 3); and 8) abnormal umbilical artery Doppler (score = 2). This predictive model achieved an AUC of 0.799 (95% CI 0.753-0.845). Using a cut-off score of 2 yielded the sensitivity, specificity, positive predictive value and negative predictive value of 88.48%, 40.49%, 54.48% and 81.37%, respectively.

**Conclusion:** A risk score model to predict adverse perinatal outcomes in pregnancies with fetal growth restriction was proposed. If validated, it may be used as a screening tool to identify pregnancy at risk of perinatal death and NICU admission. Pregnant women with a total score =2 should be referred to a tertiary care center.

*The authors declare no conflict of interest.*

**CERVICAL CERCLAGE IN PRACTICE, WHAT DO EXPERTS ACTUALLY ACHIEVE?**

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**Problem statement:** Determine whether and how much variation there is in cerclage techniques in practice as this could have implications for understanding variations in study results. **Methods:** Using identical simulators, 52 cerclages were performed by 28 consultants (who regularly undertake the procedure) from 16 hospitals in 11 UK cities. Participants performed their normal technique with their usual sutures and if comfortable with both tape and monofilament, one of each type. Suture details were recorded along with: height and number of bites from external os; whether knot tied anteriorly or posteriorly; whether knot tied with a loop; length of cut thread, amount of exposed thread on the surface if the cervix and, using CT imaging, depth of each bite and how tight the suture was tied (by reduction in cross sectional area of cervix). **Results:** 28 tape, 24 monofilament sutures were performed. Height was significantly greater with monofilament (mean 35.5mm, SD 6.7) Vs tape (mean 29.0mm SD 7.8  $p=0.004$ ) and also with the smallest needle diameter ( $p 0.001$ ). Tension was not related to suture type or height. However, the main finding was the large variability in almost all measurables with almost no consistency (fig1). For example, the number of bites varied from 2 to 5; the mean reduction in area was 140mm<sup>2</sup> (SD 84 mm<sup>2</sup>) or 17% of starting area, but the range was from 0% - 42% as one case had no tension at all (the knot was undone), whereas three were tied tight enough to reduce the area of the cervix by 342mm<sup>2</sup>. **Conclusions:** The variability demonstrated in these data may underpin the inconclusive results often reported in clinical trials of cerclage. Before further studies are performed, a standardised technique should be agreed by consensus as well as showing it to be repeatable on a simulator

## ORAL PRESENTATIONS 8: GYNECOLOGY

### REPRODUCTIVE PERFORMANCE OF WOMEN WITH AND WITHOUT INTRAUTERINE ADHESIONS FOLLOWING CURETTAGE FOR MISCARRIAGE

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**Problem statement:** Are the Reproductive outcomes following dilatation and curettage for miscarriage in women with identified and treated intrauterine adhesions (IUAs) comparable to women without IUAs? **Methods:** This was a follow-up of the PAPA study, a multicenter randomized controlled trial conducted between December 2011 and July 2015, evaluating the application of ACP gel in women undergoing recurrent D&C for miscarriage. All included women received a diagnostic hysteroscopy 8-12 weeks after randomization to evaluate the uterine cavity and for adhesiolysis if IUAs were present. The reproductive outcomes in women with identified and treated IUAs versus women without IUAs are reported 46 months after randomization. Participants were approached at least 30 months after randomization to evaluate reproductive performance, obstetric and neonatal outcomes and cycle characteristics. Outcomes of subsequent pregnancies, time to conception and time to live birth were recorded. **Results:** In women pursuing a pregnancy, 14/24 (58%) ongoing pregnancies were recorded in women with identified and treated IUAs versus 80/89 (90%) in women without IUAs odds ratio (OR) 0.18

(95% CI 0.06 to 0.50, P-value 0.001). Documented live birth was also lower in women with IUAs; 13/24 (54%) with versus 75/89 (84%) without IUAs, OR 0.22 (95% CI: 0.08 to 0.59, P-value 0.004). The median time to conception was 7 months in women with identified and treated IUAs versus 5 months in women without IUAs (hazard ratio (HR) 0.84 (95% CI 0.54 to 1.33)) and time to conception leading to a live birth 15 months versus 5.0 months (HR 0.54 (95% CI: 0.30 to 0.97)). In women with identified and treated IUAs complications were recorded in 12/16 (75%) versus 26/88 (30%) in women without, P-value 0.001. No differences were recorded in mean birth weight between the groups. **Conclusion:** Reproductive outcomes in women with identified and treated IUAs following recurrent D&C for miscarriage are impaired compared to women without IUAs; fewer ongoing pregnancies and live births are achieved with a prolonged time to a live birth.

## ASSOCIATION OF ENDOMETRIOSIS AND OXIDATIVE STRESS

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**Problems Statement:** Endometriosis is a gynecologic illness that affects women of reproductive age. The presence of endometrial tissue outside the uterine cavity distinguishes it. Pelvic discomfort and infertility plague the women who are affected. Retrograde menstruation, coelomic metaplasia, and induction theory are three main ideas that have been proposed to explain the complex etiology. Endometriosis development is also influenced by genetics and epigenetics. Recent research has focused on the role of oxidative stress, an imbalance between reactive oxygen species (ROS) and antioxidants, in the pathophysiology of endometriosis, which results in a peritoneal cavity inflammatory response. Reactive oxygen species (ROS) are inflammatory mediators that control cell growth and have harmful effects. They are formed by normal oxygen metabolism. **Methods:** A systematic review was conducted to understand better the many roles of oxidative stress and its role in the development of endometriosis. **Results:** Iron metabolism, oxidative stress markers (in the serum, peritoneal fluid, follicular fluid, peritoneal environment, ovarian cortex, and ectopic and ectopic endometrial tissue), oxidative stress genes, endometriosis-associated infertility, and cancer development have all been studied. **Conclusion:** Reactive oxygen species (ROS) have a crucial role in modifying numerous physiological functions in reproduction and disorders like endometriosis and infertility; in the female reproductive process, a delicate balance between ROS and antioxidants maintains redox equilibrium. When the equilibrium between ROS production and antioxidant defense is upset, oxidative stress arises, which can be caused by either insufficient antioxidant protection or excessive ROS production.

**Keywords:** Endometriosis, reactive oxygen species, oxidative stress

## GYNECOLOGICAL MORBIDITY IN ADOLESCENCE IN MOLDOVA

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**Problem statement:** The gynecological diseases in adolescence are determined by menstrual and reproductive changes, influenced by hypothalamic-pituitary immaturity. **Methods:** The study included 115 adolescent girls of 15-19



years old (y.o.), admitted to the Institute of Mother and Child, during 2021-2022. Adolescent's development was determined based on Tanner's staging and HEADS tool. Patients were managed according to Clinical Guidelines. **Results:** Adolescent girls reported that menarche occurred between 12-13 y.o. in 65.2%. Abnormal uterine bleeding was determined in 60 cases (52.2%). The average patients age was 14.4 years. Coagulopathies were determined in 6.6% cases, chromosomal abnormalities in 3.3%; 25% of patients previously had COVID-19 infection. Profuse blood flow associated with severe anemia was reported by 18.3% adolescent girls, in 7.0% cases being diagnosed with heavy abnormal uterine bleeding. The average admission was 8.6 days, and 35% patients were admitted repeatedly, including in the Intensive Therapy unit (5%). Patients received hemostatic (85%), anti-anemic (58.3%), hormonal (40%), and analgesic (11.7%) treatment. Hormonal (68%) and anti-anemic (50%) treatment was prolonged after discharge. The diagnosis of amenorrhea was established in 25.2% cases. Dysmenorrhea was diagnosed in 79.1%, and in 13.0% cases monthly. Moderate to severe pain was established in 47.8% cases, sexual transmitted diseases in 27.0% cases. In 18.3% cases, the adolescent girls were diagnosed with pelvic inflammatory disease. An anti-inflammatory, antibacterial, antifungal treatment was prescribed in 16.5% cases. They experienced anxiety (16.5%), difficulty falling asleep (13.9%), headache (12.2%) almost daily. These conditions were associated with low back pain (29.6%) and abdominal diffuse pain (26.9%). Somatic pathology was determined in 35.7% cases: diabetes mellitus, congenital heart disease, urinary tract disease, depression, epilepsy etc. In 41.2% cases, the psychosexual development was pathological: repressed in 19.1%, slowed in 7.3%, suppressed in 10.3% and accelerated in 22.1% cases. **Conclusion:** Gynecological diseases in adolescence remain a current issue, that can worsen the quality of life by diminishing adolescent girls daily activities, and requiring long-term treatment and follow-up. Abnormal uterine bleeding is one of the most common causes of admission in adolescence, requiring careful approach.

### EARLY MENARCHE AND PREMATURE MENOPAUSE DISTRIBUTIONS BASED ON DIABETES STATUS AMONG POSTMENOPAUSAL WOMEN: A DESCRIPTIVE ANALYSIS FROM THE IFLS STUDY

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**Introduction:** Early menarche and premature menopause are of public health concern since they are epidemiologically associated with chronic disease susceptibility, including diabetes. However, epidemiological studies on the impact of early menarche and premature menopause on subsequent diabetes are still lacking. This study aimed to be a starting point to highlight the importance of an epidemiological study on the previously-stated research topic by providing the distribution of early menarche and premature menopause based on diabetes status among postmenopausal women. **Material and methods:** This is a descriptive analysis that employed a retrospective cross-sectional study design using the Indonesian Family Life Survey fifth wave (IFLS5) collected in 2014-2015 which had a total of 777 postmenopausal women aged 50 years or above who completed the questionnaire on reproductive health and had a hemoglobin A1c (HbA1c) measured. Early menarche was defined as menarche before 12 years. Premature menopause was defined as menopause before 40 years of age. The HbA1c categorization of normal (5.7%), prediabetes (5.7% to 6.5%), and diabetes ( $\geq 6.5\%$ ) were made with their respective clinical

cut-off points. **Results:** We found that postmenopausal women with diabetes had the highest proportion of early menarche (13.1%) and premature menopause (7.5%), compared to those with normal HbA1c levels (8.6% for early menarche; 6.3% for premature menopause) and prediabetes status (9.4% for early menarche; 3.0% for premature menopause). In addition, postmenopausal women with diabetes had the lowest mean age of menarche (13.9 years), compared to their non-diabetic counterparts (14.3 years). **Conclusions:** This population-based study showed early menarche and premature menopause were highly observed among postmenopausal women with diabetes. Future analytical population-based studies aimed to study the associations of early menarche and premature menopause with diabetes are warranted.

### USP10 MODULATES ESTROGEN RECEPTOR IN UTERINE ADENOMYOSIS

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**Problem statement:** Adenomyosis is one of an estrogen dependent benign disease that causes severe menstrual cramp and heavy uterine bleeding. Pathophysiology of adenomyosis is known as that it derives from invasion of endometrial tissue to the myometrium. **Methods:** We hypothesized that estrogen receptor was modulated by posttranslational modification by ubiquitin-specific peptidase -10 (USP10). We cultivated Ishikawa cell as an in vitro model of adenomyosis and analyzed 20 patients with uterine adenomyosis who received an adenomyectomy between December 2019 and April 2020 at our hospital. During surgeries, samples were obtained from the uterus of each patient that included the adenomyosis lesion, the myometrium without adenomyosis, and endometrial tissue. **Results:** The interaction between USP10 and the estrogen receptor was confirmed by immunoprecipitation assays. Cell-based transactivation assays in Ishikawa cells revealed that overexpression of wild-type USP10 stimulated estrogen receptor (ER) expression. Conversely, ER was decreased when USP10 expression knock-down by siRNAs. When comparing human uterine tissue of adenomyosis, immunohistochemistry of USP10 was more increased in the glands of adenomyosis than glands in endometrium. **Conclusions:** The data indicate that USP10 is a new cofactor that controls degradation process of estrogen receptor. This finding underlines the role of the USP10, one of ubiquitin/proteasome system is modulating the consistency of estrogen receptor in uterine adenomyosis. This suggests that USP10 plays a significant role in estrogen dependent disease such as adenomyosis.

### LAPAROSCOPIC SURGERY FOR UTERINE ADENOMYOSIS: HOW TO RESECT AS COMPLETE AS POSSIBLE WHILE PRESERVING THE UTERUS BY 3-STEP APPROACH

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**Problem statement:** Laparoscopic adenomyectomy has become a surgical issue substitute for hysterectomy. The aim of this study to introduce the new surgical technique in focal uterine adenomyosis with more safety features.

**Methods:** From February 2019 to February 2020, 47 patients who received laparoscopic adenomyectomy by the new surgical technique were enrolled. The inclusion criteria were



the presence of focal-type adenomyosis diagnosed by ultrasonography or magnetic resonance image that was refractory to medical treatments and patients who have strong desire to preserve their uterus. All operations were performed by a single surgeon with a uniform technique.

Step 1. Transient Occlusion of Uterine Arteries (TOUA)

Step 2. Resection of adenomyosis as complete as possible

Step 3. Reconstruction of the uterus; Three-layer suture technique

**Results:** The mean diameter of the adenomyoma lesions was  $4.57 \pm 1.21$ cm, and the mean weight of the excised lesions was  $40.53 \pm 35.65$ g (range, 15 – 209 g). The mean total operation time was  $70.11 \pm 15.05$  minutes and mean estimated blood loss was  $88.88 \pm 20.0$  mL (20 – 500 ml). No conversion to laparotomy or major complications requiring reoperation occurred. At the 7-month follow-up, complete remission of dysmenorrhea and menorrhagia occurred in 97.4% and 88.9% of the patients, respectively. **Conclusions:** The newly revised technique of laparoscopic adenomyomectomy with three step approach could be a safe and effective therapeutic method for more complete excision with reasonably shorten the operation time.

#### VILLAR'S NODULE: A RARE TYPE OF ENDOMETRIOSIS

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**Problem Statement:** Endometriosis is defined as endometrial tissue outside the uterine cavity, which affects 6–10% of all women of reproductive age. Primary umbilical endometriosis (also called Villar's nodule) is a rare condition, that occurs in patients with no abdominal surgeries. The pathophysiology is still largely unknown. **Methods/Results:** We present a case of a 29-year-old woman, nulliparous, who presented to the emergency room with umbilical pain and hemorrhage during menses which began 3 months prior. She had no surgical antecedents, neither symptoms of dysmenorrhoea or pelvic pain. At physical examination there was evidence of blood in the umbilicus (Figure 1) and pain on palpation. Gynaecological exam was deemed normal and the transabdominal ultrasound revealed a hypoechogenic mass with  $2 \times 1,6$ cm. A provisional clinical diagnosis of endometriosis was made and she was discharged medicated with dienogest and referred to a gynaecology consultation. Abdominal and pelvic magnetic resonance imaging revealed no other lesions. Surgical treatment was offered and she underwent excision of the umbilical mass. There were no perioperative or postoperative complications. The pathology findings of endometrial glands and stroma confirmed the clinical assumption of umbilical endometriosis. Postoperative evaluation was performed six weeks after surgery, with complete remission of the symptoms.



Figure 1: Emergency room photograph depicting umbilical hemorrhage

**Conclusion:** The clinical manifestation of primary umbilical endometriosis consists, in most cases, of an umbilical nodule, usually associated with cyclical pain or hemorrhage, like in our case. Swelling and discoloration might also be present. In the presence of these symptoms and no abdominal surgeries, primary umbilical endometriosis should be considered and treated accordingly.

#### NEW OPTIONCE IN THE TREATMENT OF GENITURIINARY SYNDROME OF MENOPAUSE

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Statistically about 15% of premenopausal and more than 57% of postmenopausal women suffer from symptoms of genitourinary syndrome of menopause. Different surveys shows that the main symptoms are dryness (57%), dyspareunia(44%), irritation (37%). More than 59%of women suffer from sexual dysfunction. And about 40% of women did not apply for medical care for more than a year. So we need to find new options for treatment of the GSM. GSM involves vaginal dryness (VD), pain during sexual activity (SAPain), vaginal itching (VI), vaginal laxity (VL), burning, pain and symptoms in the urinary organs. Radiofrequency is a new alternative technique for GSM is a high frequency current used for therapeutic purposes, based on the mechanism of the heat production by conversation, that is mollecular and ionic mobilization, favoring oxygenation, nutrition and vasodilatation of a tissues. Neocollagenezation, neoelastogenesis and reorganization of the collagen fibres may be seen after using fadiofrequency. The study includes 21 postmenopausal women with the symptoms of GSM. Non ablative monopolar radiofrequency 448 kHz was used to treat the symptoms of GSM in postmenopausal women. It was used both capacitive and resistance regimen. The total number of procedure was 8 (twice per week). We administer the basic anamnestic questionnaire for collecting social and clinical data. Each participant subjectively assessed their symptoms (VD, SAPain, VI, VL) burning sensation and the pain in vaginal introitus using the Vaginal Health Index (VHI) which consists of graduated scale form 1 to 5 in each item; Femail Sexual Function Index (FSFI) objectively assess sexual function, gathering response in six different dominant: desire, arousal, lubrication, orgasm, satisfaction, pain; Sexual Quotinent - Femail Version (SQFV) assessed womens sexual activity; International Consultation on Incontinence Questionnaire Short Form (ICIQ-SF) composed of five question that assessed the frequence, severity and impact of UI in addition to a set of eight items of self diagnosis related to UI situations experienced by patience. The results of treatment we evaluate after 2 weeks from last procedure. **Results:** 92 % of women reported about improvement of urinary symptoms, 86 % - about improvement of sexual function. More than 90% patient improve their VHI.

#### PREGNANCY AND DELIVERY OUTCOME AFTER ADENOMYOMECTOMY BY A SINGLE SURGEON: UPDATED DATA FROM 2019 TO 2022

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**Problem statement:** As the age of marriage and childbirth increases, adenomyomectomy is preferred to hysterectomy in patients with adenomyosis who failed medical treatment. However, there are few studies about pregnancy and delivery



outcome after adenomyectomy. In this study, extended data of patients who had pregnant after adenomyectomy performed by a single surgeon will be introduced. **Methods:** Medical records of thirty patients were reviewed. Particularly, eighteen patients who delivered at Nowon Eulji medical center was evaluated in detail including operation records and neonatal outcomes. **Results:** Of the thirty patients, ten were pregnant naturally, and twenty were pregnant with in vitro fertilization & embryo transfer (IVF-ET). Median age of delivery was 38 years old. Median gestational age was 36.3 weeks. Placenta abnormalities was found in seven cases (38.8%, 7/18) including four accreta, two previa and one abruption. Uterine atony was found in one case and underwent uterine artery embolization. The mean birth weight was 2506g (SD=657, median 2680) and the number of neonates who admitted to intensive care unit(ICU) for prematurity was 8(44.4%, 8/18). Three were admitted to ICU for other reasons such as respiratory distress syndrome and hemoatochezia. **Conclusion:** For safe delivery after adenomyectomy, preparation for bleeding caused by placental abnormalities and facilities for care the premature neonates is essential.

#### MEDICAL MANAGEMENT OF ECTOPIC PREGNANCY: AN AUDIT IN SSMC

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Ectopic pregnancy management with methotrexate is a cost effective and non –invasive treatment modality. Its success rate is comparable to surgical management with preservation of future fertility. We have done an audit of all patients who received medical treatment of ectopic pregnancy from 01/01/2020 to 30/06/2021. Our main objective was to see outcome of medical treatment, its cost effectiveness and comparing our hospital success rate with success rate mentioned in Abu Dhabi Health Services Company (SEHA) and international guidelines. This was an observational retrospective study including those admitted with ectopic pregnancy and were managed in SSMC hospital both medically with methotrexate and surgically.

Setting: SSMC Hospital

Inclusion Criteria: Patients admitted with ectopic pregnancy in wards of SSMC Hospital.

#### Results:

- Total number of cases of ectopic pregnancies admitted in SSMC hospital during this duration was 82
- 75 out of 82 (91%) were tubal ectopic pregnancies. (SEHA and ROCG 97 %)
- All tubal ectopic pregnancies were identified on initial scan. (ROCG recommendation is 90%)
- 7 out of 82 were non-tubal ectopic pregnancies. (1 was scar ectopic, 2 cervical ectopic, 1 cornual ectopic, 3 unknown location)
- 42 out of 75 tubal ectopic (56%) had medical treatment with methotrexate. 100% of women suitable for medical treatment managed medically.
- 30 out of 42 tubal ectopic who received methotrexate had successful resolution of pregnancy. (71%) (ROCG- 65%- 95 %)
- 4 out of 30 patients (13%) with successful medical treatment received 2 doses of methotrexate, rest all got only single dose of methotrexate. (ROCG- 3%- 27 %)
- 2 out of 42 tubal ectopic who received methotrexate had tubal rupture. (4%)
- 5 out of 42 tubal ectopic who received methotrexate had failed medical treatment due to rising Beta HCG. (12%)

- 7 out of 42 tubal ectopic who received methotrexate (17 %) required surgery after methotrexate. (2(4%) were tubal rupture and 5 (12%) were rising HCG)
- 5 out of 42 (12%) tubal ectopic who received methotrexate lost follow up
- 0% of cases where methotrexate was given for a false positive diagnosis of ectopic pregnancy. (ROCG recommendation is 0%)

#### INCOMPLETE ABORTION IN A HERLYN-WERNER-WUNDERLICH SYNDROME: A CASE REPORT

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**Problem Statement:** Herlyn-Werner-Wunderlich Syndrome (HWWS) is a rare syndrome having uterus duplicity, obstructed hemivagina and ipsilateral renal agenesis. It is an unusual variant of Mullerian duct abnormalities that may be a result of a failure of the vertical and lateral Mullerian ducts to fuse at around 9 weeks of gestation occurring in about 0.1% to 3.8% of the general population. Patients with HWWS usually present with an abdominal pain and abdominal mass with regular menstruation after menarche. The index patient, 19-year-old primigravid with a history of 6 weeks amenorrhea, was initially managed as ruptured ectopic pregnancy due to presenting symptoms of vaginal bleeding, with abdominal mass and tenderness, with fullness in the left anterior vaginal wall and cul-de-sac, and with a positive pregnancy test. She underwent exploratory laparotomy under general anesthesia. Intraoperatively, the bilateral ovaries and fallopian tubes were grossly normal and the uterus had a 2 cm fundal indentation. Ultrasound examination was done postoperatively revealing a bicornuate uterus with 2 cervixes, with a longitudinal obstructing vaginal septum. There was also a retained products of conception on the left endocervix and a left renal agenesis with hydroureter. A suspicion of abortion in HWWS was considered. **Methods:** Under a suspected diagnosis of HWWS, the patient underwent vaginoscopy and an ultrasound-guided incision of longitudinal vaginal septum, with evacuation of products of conception and hematocolpos under spinal anesthesia. **Results:** Upon incision of the vaginal septum through ultrasound guidance, about 80 cc of evacuated products of conception and blood clots were evacuated. The left cervix was smooth and dilated. The vaginal canal was reconstructed. She tolerated the procedure well and was discharged on her second postoperative day. The diagnosis of HWWS was confirmed after an abdominopelvic magnetic resonance imaging (MRI) was done on follow-up revealing uterine didelphys with septated vagina and left renal agenesis with compensatory hypertrophy of the right kidney (Figure 1).



**Conclusion:** Patients with HWWS have non-specific symptoms after menarche. Early identification of this uncommon anomaly is vital to establish a precise diagnosis and management. Prognosis is good if treated early, thus avoiding complications and protecting future fertility and pregnancies.



## MINIMALLY INVASIVE TUBAL LIGATION: THE IMPACT OF PREVIOUS ABDOMINAL SURGERY

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Laparoscopic tubal ligation (TL) is usually an easy procedure which can be performed in an outpatient setting. However, some factors as previous abdominal surgery (PAS), surgeon's experience, adhesions and obesity may influence the risk and outcome of any laparoscopic surgery, including TL. The aim of this study is to compare the patients' characteristics and surgical outcomes of TL in women with or without PAS. A retrospective observational study was performed at a tertiary centre, including women proposed to laparoscopic TL during a 2-year period. Two groups were evaluated: women with (G1) and without (G2) PAS. Statistical analysis was performed using SPSS, with a p-value 0.05 as statistically significant. A total of 212 women were included: 95 with PAS (G1) and 126 without PAS (G2). Age was increased in G1 (G1: Md 39y vs G2: Md 36y,  $p=0.01$ ). Lysis of adhesions was made in 11.6% from G1 and 2.4% from G2 ( $p=0.01$ ). One-port laparoscopy was performed in 92.6% of G1 and 97.6% of G2 ( $p=0.10$ ). The umbilical incision was the preferred entry site in both groups (G1: 96.6%; G2: 100%) – the alternative in G1 was the Palmer's point. Conversion rate to mini-laparotomy was 2.1% and 1.6% respectively. Electrocoagulation and cut was the preferred method of TL (G1: 95.8%; G2: 99.2%,  $p=0.17$ ). Ambulatory surgery was performed in 68.4% in G1 and 82.5% in G2 ( $p=0.04$ ) and the median time for inpatient discharge was the day after surgery in both groups. No major intraoperative complications occurred in any group. Wound infection was the only postoperative complication reported (G1: 4.3% vs G2: 1.6%,  $p=0.41$ ). Differences related to body mass index, rate of direct entry and duration of surgery were nonsignificant. No failure of sterilization was observed. In our study, PAS was associated with older age, increased need for additional procedures as lysis of adhesions and higher rate of inpatient TL. Pelvic organ adhesions were more frequent in women with PAS, which makes it highly recommendable to obtain a detailed preoperative evaluation. Despite the need of a careful pre and intraoperative approach, laparoscopic TL is a safe procedure in women with PAS.

## ORAL PRESENTATIONS 9: GYNECOLOGY/HPV/OTHER

### GYNECOLOGY

#### SERUM 25 DIHYDROXY VITAMIN D3 LEVEL ESTIMATION AND ITS CORRELATION WITH INSULIN RESISTANCE IN 18-40 YEARS WOMEN WITH POLYCYSTIC OVARIAN SYNDROME

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**Problem Statement:** Polycystic ovary syndrome (PCOS) is a disease of endocrine and frequently encountered in women in their reproductive period. In Indian scenario only few studies are available on correlation of serum 25 dihydroxy vitamin D3 level and insulin level. The aim of the present study is to estimate the concentration of serum 25 dihydroxy vitamin D3 and insulin resistance and determine association of serum 25 dihydroxy vitamin D3 with insulin resistance in PCOS women of 18-40 years age group. **Materials and Methods:** We

included total 64 patient with equal distribution of 32 each in case group and control group (age 20–40 years, duration 12 months) in case control study in Department Of Obstetrics Gynaecology, All India Institute of Raipur, Chhattisgarh. All patients underwent a physical examination and blood sample was analyzed for the biochemical parameters. The data were analyzed using appropriate statistical methods, and a  $P < 0.05$  was considered statistically significant. **Results:** In our study more than 50 percent female had 25 Dihydroxy vitamin d3 in PCOS women and it was observed more in patient with higher BMI Insulin resistance was not found in both group. No positive correlation was found in 25 Dihydroxy vitamin d3 and insulin resistance in both group. **Conclusion:** 25 Dihydroxy vitamin d3 is very common in PCOS patients and exacerbates the metabolic abnormalities. It is essential to screen all the PCOS patients for 25 Dihydroxy vitamin d3 deficiency, and further large-scale studies are required to confirm our findings.

**Keywords:** *insulin resistance, obesity, polycystic ovarian syndrome*

### HPV

#### BUSCHKE-LOWENSTEIN TUMOR: A CLINICAL CASE

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**Problem statement:** Buschke-Lowenstein Tumor (BLT), also known as giant condyloma acuminata, is an anogenital tumor, with an estimated incidence of 0.1% in the general population. It is mainly transmissible through sexual contact and is a rare manifestation of human papillomavirus (HPV), being most commonly associated to types 6 and 11. Despite of its benign histopathological findings, it is characterized by malignant features, notably the destruction of adjacent tissues and its recurrence after treatment. **Methods/Results:** We report a case of a 47-year-old woman, with several auto-immune disorders, notably a seronegative celiac disorder and an autoimmune hepatitis, treated with immunosuppressors. The patient was recently diagnosed with hepatitis B, with no history of multiple sexual partners despite being sexually active. She presented vulvar swelling that have rapidly increased in size in the last three months, causing urinary obstruction and dyschezia, limiting her activities of daily life. The clinical examination revealed multiple hyperkeratotic vegetative lesions, cauliflower-like, the major ones located in the perianal and both inguinal regions, as well as in the periurethral area. Examination of the lymph nodes did not reveal any palpable adenopathy. An abdominal-pelvic CT-scan was performed and no signs of invasion have been found. She underwent local excision of lesions with CO2 laser ablation and vaporization in two surgical times, with the perianal lesion removed in a second moment. The final anatomopathological confirmed the diagnosis of BLT, revealing an extensive koilocytosis and focal areas of high-grade lesions. HPV was also analyzed in the anatomopathological exam, and low-risk genotypes 6 and 11 were identified, as well as several high-risk genotypes others than 16 and 18. The surgical procedures went without complications and the surgical wounds have healed by secondary intention with great esthetical results three months after surgery. **Conclusion:** BLT is a rare affection of both female and male external genitalia, limiting the literature to few case reports over the decades. Surgery is considered the first-line therapy and CO2 laser ablation may be an alternative procedure comparing to the classical surgery as it involves a lower recurrence and minimal complication rates, as well as good esthetical results with no additional cost.





Figure 1: A – BLT, represented by hyperkeratotic vegetative lesions, cauliflower-like, the major ones in the perianal region, both inguinal and in the periurethral areas; B- Three months after resection of lesions with CO2 laser ablation.

### PERSISTENT HPV INFECTION AFTER CONIZATION IN PATIENTS WITH NEGATIVE MARGINS – RISK FACTORS

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**Problem statement:** Most persisting infections are caused by high-risk HPV types, and HPV infection precedes the development of low- and high-grade squamous intraepithelial lesions. The presence of high-risk HPV at follow-up was a significant predictor for residual/ recurrent high-grade cervical intraepithelial neoplasia (CIN) after conization. Post-treatment HPV testing is useful in the follow-up of patients after conization. Several studies have suggested risk factors for the prediction of residual/recurrent disease CIN after conization, although the results have been somewhat inconsistent. Age, cytology grade, menopause status, margin involvement, HPV viral load and HPV genotype have all been observed as risk factors for residual/recurrent disease in CIN treatment. **Methods:** In this retrospective study we assessed the risk factors of HPV persistence after loop electrosurgical excision procedure (LEEP) of CIN 2/3 in the group of 73 patients with negative margins, between January 2022 and December 2022. High-risk HPV testing was performed on cervical cytology prior to and 6 months after conization. **Results** High-risk HPV was detected in 71 of 73 (97,3%) patients before conization. At the 6-months follow-up, the high-risk HPV was eliminated in 51 of 73 (69,9%) patients. The HPV persistence rate after conization was 30,1% (22/73). Univariate analysis showed that persistent HPV infection after conization with negative margins was more likely to occur when the age is greater than 45 years ( $p=0,014$ ), the biopsy histology is high grade before conization ( $p=0,035$ ) and the preoperative HPV is type 16 ( $p=0,014$ ). Logistic regression analysis showed that age ( $p=0,034$ ) and preoperative HPV type 16 infection were the significant independent factors ( $p=0,018$ ) for HPV persistence out of cytology, punch biopsy histology and conization histology. **Conclusions:** Advanced age and HPV type 16 infection before conization were significantly related to HR-HPV persistence after conization with negative margins.

### DOES HUMAN PAPILLOMAVIRUSES HAVE AN EFFECT ON SEXUAL DYSFUNCTION?

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Human papillomaviruses (HPV) are small, double-stranded DNA viruses that infect the cutaneous and mucous epithelium. HPV is the most common sexually transmitted disease. Although HPV is usually transmitted during sexual intercourse, it can also occur through close contact without sexual intercourse. There are more than 200 recognized types of HPV. Of these, about 12 HPV types are known to be high-risk and increase the risk of developing many cancers, including cancers of the cervix, vulva, vagina, head and neck. In addition to malignancies, complications of HPV infections include genital warts, infertility and sexual dysfunction. However, few studies have looked at the effect of HPV infection on sexual dysfunction. HPV positivity in female patients may be associated with a significant deterioration in sexual function. Women who test positive for HPV may experience feelings of guilt, anger, sadness, stigma, and shame. These problems can result in a decrease in the level of sexual interest and desire and a decrease in the frequency of sexual intercourse. Also, having genital warts can be associated with anxiety, depression, and sexual dysfunction. Men with genital warts have higher rates of sexual dysfunction. In addition, HPV infection can increase the risk of developing erectile dysfunction. Apart from the significant physical effect of HPV infection, it is seen that being diagnosed triggers many negative emotions and impairs sexual function. Healthcare professionals working with HPV patients should evaluate patients in terms of psychological and sexual function and take precautions accordingly.

### THE SYNC UP OF COLPOSCOPIC FINDINGS WITH CERVIX PRECANCEROUSES CHANGES IN CERVIXES WITH YOUNG FEMALE PATIENTS

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**Problem statement:** The study included 120 young female patients age 17-30 from Serbia, Montenegro Bosnia and Hercegovina as well as patients from EU countries. All patients had HPV confirmed diagnosis (DNK type procedure). Predominant types with patients in Serbia were 6,31,33,45,46,56 66,68. Montenegro: 16,18,44, 35, 33,51, 56, 58. Whereas the patients from Bosnia and Herzegovina and EU countries had a combination of the afore stated ones. The organism of young females is unprepared and the incubation period is shortened from 3 weeks to 3 months. **Methods:** A colposcopy procedure has been done to all patients. Depending on the severity of HPV infection, colposcopy findings differed. With younger patients (17-21 years of age) more severe infection resulted in a combination of several pathological images (mosaic, punctation Aw epithelia) whereas with older patients (25-30 years of age) we found out often leuco-plaque and irregular vascular pattern. With these patients we performed the removal of the changes by application of radio wave LOOP excision. **Results:** Each female patient had a confirmed diagnosis of HPV infection of the cervix. With 47% H-SIL has been diagnosed, and 21% of patients had HPV cervicitis condylomtosa. The majority of patients with H-SIL diagnosis were younger than 25 years and after colposcopy procedure the findings were a mixture of pathological images, which appeared immediately upon smearing of the cervix with dilution of vinegar acid (AW epithelia, rough mosaic, and punctuation in the majority of cases). L-SIL was dominant with colposcopy image of rough



AW epithelia or mosaic. **Conclusion:** Pathological colposcopic findings is a clear indicator of HPV infection of the cervix. In case there is a combination of a number of pathological images, it is necessary to apply an adequate therapeutical procedure in accordance with the patient's age. It is very important to note that combination of HPV viruses at this particular geographical location is entirely present in polyvalent HPV vaccines.



## OTHER

### RISK FACTORS OF MATERNAL NEAR-MISS AND MATERNAL DEATH IN THE MAJOR TERTIARY HOSPITAL IN SOUTHERN THAILAND

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**Problem statement:** Identifying predictors for maternal near-miss (MNM) and mortality can guide in providing an individual appropriate levels of health care services. This study aimed to identify those predictors for MNM and maternal mortality.

**Methods:** A time-of-delivery-matched case-control study was conducted in Songklanagarind Hospital, the main tertiary hospital in Southern Thailand. Medical records of 710 cases with MNM or maternal mortality and 710 controls between 2014 to 2020 were reviewed. Multivariate logistic regression was used to identify predictors for MNM and maternal mortality. **Results:** The predictors for MNM and maternal mortality were advanced maternal age (aOR 1.62, 95% CI 1.17-2.23), obesity (aOR 1.69, 95% CI 1.02-2.79), Islamic religion (aOR 1.62, 95% CI 1.20-2.18), pre-pregnancy comorbidities (aOR 6.22, 95% CI 4.49-8.62), history of uterine curettage (aOR 4.03, 95% CI 1.96-8.30), pregnancy-induced hypertension without severe features (aOR 5.25, 95% CI 2.33-11.83), pregnancy-induced hypertension with severe features (aOR 15.18, 95% CI 8.53-27.01) and placenta previa (aOR 23.30, 95% CI 10.85-50.02). These predictive abilities were adjusted by parities, adequacy of antenatal care, history of pregnancy-induced hypertension, history of postpartum hemorrhage, history of miscarriage, history of cesarean section, the type of services, route of delivery and indications for cesarean section. **Conclusion:** Predictors for MNM and maternal mortality are proposed.

*We declare no conflict of interests.*

### SCORING MODELS FOR MATERNAL NEAR-MISS AND MATERNAL DEATH PREDICTION IN SOUTHERN THAILAND

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**Problem statement:** Maternal near-miss (MNM) and mortality are still problematic and many are preventable. Patient risk acknowledgment can be helpful for timely providing suitable and adequate health care services. This study aimed to establish risk score models for MNM and maternal mortality prediction. **Methods:** A time-of-delivery-matched case-control study was conducted in Songklanagarind Hospital, a tertiary hospital with extensive referral cases including from the seven provinces with the highest maternal mortality in Southern Thailand. Medical records of 710 cases with MNM or maternal mortality and 710 controls between 2014 to 2020 were reviewed. Multivariate logistic regression and Akaike information criterion were used to develop the best risk scores models for MNM and maternal mortality. The predictive ability was measured with an area under the receiver operating characteristic curve (ROC-AUC). **Results:** The predictive model for MNM and maternal mortality consisted of nine factors which were advanced maternal age (score=6), underweight (score=6), obesity (score=7), Islamic religion (score=6), pre-pregnancy comorbidities (score=23), history of uterine curettage (score=17), pregnancy-induced hypertension without severe features (score=21), pregnancy-induced hypertension with severe feature (score=34) and placenta previa (score=39), these made a total score of 159. Prediction of MNM and mortality with the total of scores yielded ROC-AUC values of 0.8601. Using a cut-off score of 23 yielded the sensitivity and specificity of 75.5% and 85.8%, and yielded the positive and negative likelihood ratio of 5.3 and 0.3 respectively. **Conclusion:** Risk score models for MNM and maternal mortality prediction are proposed. It can be used for early preparation of adequate health care services and relocating the patients to suitable centers.

*We declare no conflict of interests.*

### CLINICAL, EPIDEMIOLOGICAL AND LABORATORY CHARACTERISTICS OF CASES OF COVID-19-RELATED MATERNAL NEAR MISS AND DEATH AT REFERRAL UNITS IN NORTHEASTERN BRAZIL: A COHORT STUDY

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**Problem statement:** Covid-19 represents a major risk during pregnancy and postpartum, resulting in an increase in maternal mortality worldwide. This study aimed to describe the frequency of Covid-19-related near miss and death during this period, as well as the clinical, epidemiological and laboratory characteristics of the women who experienced a



Severe Maternal Outcome(SMO). **Methods:** A retrospective and prospective cohort study was performed between April 2020 and June 2021 with hospitalized pregnant and postpartum women with a diagnosis of Covid-19 confirmed by real-time polymerase chain reaction (RT-PCR). Data from five tertiary hospitals in northeastern Brazil were evaluated. Descriptive statistical analysis was performed using Epi Info, version 7.2.5.0. **Results:** A total of 463 patients were included. Of these, 64 (14% of the sample) had SMO, with 42 cases of near miss (9%) and 22 maternal deaths (5%). Patients who had severe maternal outcome were predominantly young (median age 30 years) and were black or brown-skinned, 81.3% were pregnant and 76.6% required Cesarean section. The great majority (82.8%) had severe acute respiratory syndrome (SARS). The frequency of patient admission to an intensive care unit was 87.5%, assisted mechanical ventilation was required in 67.2% of the cases, non-invasive ventilation in 54.7%, antibiotics prescribed in 93.8% and corticosteroids in 71.9% of them. Within SMO, the frequency of respiratory dysfunction was 93.8%, with 50.0% developing neurological dysfunction, 37.5% cardiovascular dysfunction, 29.7% hematological dysfunction, 18.8% renal dysfunction, 14.1% uterine dysfunction and 7.8% hepatic dysfunction. The maternal near miss (MNM) ratio for Covid-19 was 1.6/1,000 live births and the maternal mortality (MM) ratio for Covid-19 was 84.8/100,000 live births, with a mortality index of 34.4% in the sample. **Conclusion:** This study revealed a low Covid-19-related MNM ratio of 1.6/1,000 live births and a high Covid-19-related MMR of 84.8/100,000 live births. The mortality index was also high. Most of the patients were admitted while pregnant, were young, married and black or brown-skinned, and none had completed university education. The majority had SARS and required admission to an intensive care unit and mechanical ventilation. Most were submitted to a Cesarean section.

**Disclosure of interest:** The authors report no conflict of interest.

### SIMPLE CARBOHYDRATE COUNT AND ITS RELATIONSHIP WITH GESTATIONAL BODY MASS INDEX (BMI)

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**Introduction:** To improve the health of pregnant women and newborns, it is important to control their energy consumption, especially the consumption of carbohydrates and sugars.

**Objective:** To determine the energy consumption of simple carbohydrates and to analyze its relationship with the gestational body mass index (BMI) of pregnant women who come to outpatient clinic No. 5 of the Gynecology and Obstetrics Service of the Hospital Universitario "Dr. José Eleuterio González", UANL. **Material and methods:** descriptive, observational study of 1296 records of pregnant women aged 12 to 60 years. Variables were collected: anthropometric data, laboratory data, and clinical characteristics. The percentage (%) of adequacy was determined as follows: poor (67%), good (68-89%), adequate (90-110%) and excess (110%), in terms of the classification of the Gestational body mass index (BMI) was used: Atalah E, Castillo C, Castro R. To determine the sample size, the Miller Table was used, where the optimal size was selected according to the universe (N=1296), a minimum sample number of 50 and a maximum sample number of 200 were

presented. **Results:** Descriptive data and frequencies of the 1296 medical records of pregnant women were analyzed. The average gestational BMI was  $26.1 \pm 5.8$  kg/m<sup>2</sup>. In the percentage of adequacy in the consumption of calories (1800kcal), 30.9% (n=400) poor consumption, carbohydrates (900kcal), 29% (n=376) poor consumption, proteins (540kcal) 79.9% (n=1035) poor consumption, lipids (360kcal) 54.8% (n=710) excess consumption. 58.9% (n=764) consumed sugar. Regarding the energy consumption of simple carbohydrates and the relationship with the gestational BMI in women, 32% (n=94) underweight, presented an excess consumption of carbohydrates, 28% (n=116) normal weight, presented a carbohydrate deficient, 29.3% (n=91) overweight, had poor carbohydrate intake and 33.5% (n=90) obese, had poor carbohydrate intake. **Conclusions:** when observing the results, the relationship between the gestational BMI and the energy consumption of simple carbohydrates is confirmed, finding that the majority of the population with normal weight, overweight and obesity have a deficient consumption of carbohydrates and the population with low weight a consumption in excess carbohydrates and there is a high percentage in the consumption of sugars.

### KNOWLEDGE, ATTITUDES, AND PRACTICES ON ENHANCED RECOVERY AFTER SURGERY PROTOCOLS FOR CESAREAN DELIVERY IN A TERTIARY GOVERNMENT HOSPITAL

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**Problem Statement:** Enhanced recovery after surgery (ERAS) is a standardized, perioperative program for optimizing patient care and recovery. Evidence suggests that understanding the barriers and enablers to implementation are crucial for development of implementation strategies. The objective of this study is to determine the knowledge, attitudes, and practices towards ERAS protocols for Cesarean Delivery in a tertiary government hospital in the Philippines.

**Methods:** This is a descriptive, cross-sectional survey describing the knowledge, attitudes, and practices of obstetricians towards ERAS protocols for Cesarean Delivery. A structured and validated self-administered questionnaire was distributed to 173 active residents, fellows, and consultants of the Department of Obstetrics and Gynecology. Association between the respondents' demographic characteristics and their knowledge, attitudes and practices towards ERAS protocols for Cesarean Delivery were analyzed using logistic regression analysis. **Results:** One-hundred forty-five physicians were included in the analysis. Majority (70%) of respondents were in agreement to statements on awareness of the components of ERAS, as well as of the existence of literature and lectures to support its use. Almost everyone (96%) agreed that hospital-based guidelines on ERAS would be helpful. Majority (91%) agreed that ERAS protocols routinely should be practiced for non-emergent Cesarean sections. Variation in practice was found wherein of 22 components evaluated, there were 4 components where respondents had disagreement on practicing, 6 components where they were neutral to, and 12 components where majority agreed on practicing. Fellows and consultants reported more frequent practice of ERAS elements, such as giving pre-admission education and counseling (p = 0.001), omission of bowel preparation (p = 0.006), allowing regular diet within 2 hours after delivery (p = 0.026). Barriers to ERAS uptake were comparable across groups, except for financial resources which was perceived to be limited by fellows (14%) and residents (6%). **Conclusion:** Knowledge and attitude related to Enhanced Recovery after Cesarean Section





protocols were favorable, with majority being aware of the protocol and with general agreement over its use. Results from this study highlight the need for collaboration with other specialties, a multi-disciplinary team for spearheading and creating hospital-based protocols for better adherence to practice, and education and training for its use.

### THE LOST TWINS: SPONTANEOUS MONOCHORIONIC, MONOAMNIONIC, TWIN ECTOPIC GESTATION

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**Introduction:** Spontaneous monochorionic monoamniotic ectopic gestation is a rare occurrence with a ratio of 1:125,000. This is the first reported case in the Philippines. This rare occurrence poses a major reproductive health and fertility risk, and can even be life threatening. Because of the rarity of this case, limited data are available when it comes to the management of twin ectopic pregnancy. To date, there is no standard recommendation on the management of multiple gestation ectopic pregnancy. This report aims to share our experience to the medical society, contribute to the knowledge of its management, and help our colleagues establish a consensus regarding the optimal treatment of twin ectopic pregnancy. **Case:** This is a case of a 28 year old primigravid who came in due to hypogastric pain. At the ER, she was hypotensive and tachycardic. An ultrasound was done which showed twin tubal pregnancy with cardiac activity (Figure 1). She was admitted with an impression of ectopic live twin pregnancy, probably ruptured. She underwent exploratory laparotomy, salpingectomy. Intraoperatively, noted hemoperitoneum and rupture at the tubal isthmic area. The specimen was sent for histopathology which confirmed the diagnosis. **Discussion:** Live twin ectopic pregnancies are extremely rare, with an occurrence of 1 out of 250,000. The first documented case was in 1891 and the 101st case was described in 2001. To date, surgical intervention is the most common form of management in cases of twin ectopic pregnancy. However, medical management have been found successful if there is stable vital signs and absent fetal cardiac activity. **Conclusion:**

With the rarity of this case, studies may be used to come up with a consensus for a fertility preserving treatment.



Figure 1. Transvaginal ultrasound images revealing a complex mass with two live embryos. Twin A and Twin B with a crown rump length of 0.9 cm equivalent to 6 6/7 weeks age of gestation and a cardiac rate of 135 bpm, and a crown rump length of 0.7 cm equivalent to 6 4/7 weeks age of gestation and a cardiac rate of 126 bpm, respectively.

### KNOWLEDGE, ATTITUDE, AND PRACTICE OF OBSTETRIC HEALTHCARE WORKERS ABOUT CORONAVIRUS DISEASE 2019 IN A TERTIARY

### CORONAVIRUS DISEASE 2019 GOVERNMENT REFERRAL HOSPITAL

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**Problem statement:** To determine the following: (1) knowledge, attitude and practices of obstetric HCWs in a tertiary COVID-19 referral hospital regarding the COVID-19 safety measures and; (2) whether an association exists between the level of knowledge and safety practices and their attitude toward the COVID-19 disease and its infectivity. **Methods:** Validated English and Filipino questionnaires based on Rabbani et al (2020)'s study were answered by 209 obstetric healthcare workers in a tertiary COVID-19 referral institution. Chi-square tests were performed to compare responses among the occupational status, to evaluate for the association among the different domains of the questionnaire, and to compare the prevalence of COVID-19 infection among the HCWs. **Results:** HCWs have an adequate amount of knowledge across all the occupations, scoring more than 90% on most questions. There was a significant association between the HCWs' knowledge and attitude in relation to their occupational status. No significant association was noted among the knowledge and practice, and attitude and practice domains across all occupational status, and among the HCWs with history of COVID-19 infection. **Conclusion:** Consistent with previously published studies, HCWs in the institution studied, had adequate knowledge of etiology, symptomatology, diagnosis, transmission, treatment and prevention of COVID-19. Their level of knowledge is associated with their practice and attitude. There is a significant difference with the knowledge, attitude and practices of HCWs from the 3 groups studied (physicians, nurses and staff). Continued updates through lectures and seminars regarding disease information is recommended to augment the knowledge of HCW. Further studies on additional information and practices such as on vaccination can be done.

### SWYER SYNDROME

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**Problem Statement:** A 17-year-old female presented to the hospital complaining of not having menstruation, abdominal pain, and groin pain since August 2021. **Methods:** We asked a variety of questions ranging from anamnesis to physical examination to supporting examinations. The patient had a history of laparotomy surgery when she was two years old; however, the patient had no idea what type of surgery had been performed or which doctor's hospital department had performed the operation. She had a history of being born prematurely. We suspected 46,XY Disorders of Sex Development with Swyer syndrome phenomenon in the patient. However, an examination of the uterus revealed prepubertal development; however, the length of the uterus grew in accordance with pediatric age. A total of 100 cells were examined, and no monosomy X was discovered. The karyotype 46,XY was obtained instead. An abnormal endocrine profile laboratory examination revealed an increase in FSH (74.49 mIU/mL) and a decrease in estradiol (E2) (9.00) pg/mL. There were several differential diagnoses such as outflow tract obstruction, androgen insensitivity syndrome, functional amenorrhea, or Turner syndrome, so testosterone and luteinizing hormone levels had to be checked. **Results:**



The patient was diagnosed with Swyer syndrome. **Conclusion:** Swyer syndrome is not a life-threatening condition; however, there is an increased risk of gonadoblastoma and dysgerminoma if the testes are kept intra-abdominally.

**Disclosure of Interest:** *Oncology Gynecology*

### BLACK WOMEN ACCESS AT-HOME FERTILITY TESTING SERVICES LATER IN LIFE COMPARED TO WHITE WOMEN IN THE UNITED KINGDOM

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**Problem statement:** Evidence from the HFEA shows that Black women access fertility care later than women of any other ethnicity in the United Kingdom (UK). This may contribute to lower pregnancy rates, in part due to age-related fertility decline. We assessed the age at which individuals sought answers about their fertility, the time spent trying to conceive (TTC), and the role ethnicity played in these timelines. **Method:** Data was collected from 61,758 Hertilt Health users who completed a virtual health assessment between September 2020 and July 2022. Users self-reported age, ethnicity, whether they were actively TTC and length of time they had been actively TTC. The average age has been reported as mean  $\pm$  SD, and analysis of associations of time spent TTC between ethnicities was conducted via Chi-squared test; p values 0.05 were considered significant. **Results:** Of the users who were TTC, the majority self-identified as White (83.74%), followed by Asian (6.90%), Mixed (3.77%), Black (4.54%) and 'Other' (1.04%). We found an overall significant relationship between time spent TTC and ethnicity; the strongest association was observed between Black and White users ( $\chi^2$  (4, n=12,429) = 44.51, p 0.0001). Comparison of time spent TTC, and average age within ethnic groups showed that similar percentages of Black (30.36%) and White (33.87%) users had been TTC for 6 months, and Black users were moderately older (31.5  $\pm$  6.5 vs 29.3  $\pm$  5.9). However, a higher percentage of Black users (15.34%) were TTC for 5 years compared to White users (8.15%), and a larger difference in age was observed (36.8  $\pm$  5.9 vs 32.6  $\pm$  5.1) compared to those who had been TTC for 6 months. **Conclusion:** This data suggests that White users approach fertility and hormone testing services earlier in their journey to conception in comparison to Black users, which may contribute to the ethnic disparities between pregnancy outcomes in the UK. Further investigations, however, are needed to form a causal association and identify the underlying reasons for this.

### DETERMINATION OF BREASTFEEDING DURATION, BREASTFEEDING SELF-EFFICACY AND POSTPARTUM DEPRESSION LEVELS OF MOTHERS WITH BREAST PROBLEMS IN THE EARLY POSTPARTUM PERIOD

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**Problem statement:** There are many studies on breastfeeding self-efficacy of mothers in the postpartum period. However, no study has been found that examines the duration of breastfeeding, breastfeeding self-efficacy and the level of postpartum depression of mothers with breast problems. The study was planned to determine the breastfeeding duration, breastfeeding self-efficacy and

postpartum depression status of mothers who had breast problems in the early postpartum period. **Methods:** The population of this descriptive and prospective study consisted of mothers who applied to the gynecology polyclinics of Training and Research Hospital in northern Turkey for control visits within 10 days of postpartum between July and December 2021. The study was carried out with 195 mothers who met the inclusion criteria and agreed to participate in the study. The data of the study were collected in 3 stages (postpartum 10th day, postpartum 6th week and postpartum 6th month). Data Collection Form, Breastfeeding Self-Efficacy Scale Short Form Postnatal Version (BSES-SF) and Edinburgh Postnatal Depression Scale (EPDS) were used as data collection tools. **Results:** The mean age of the mothers participating in the study was 25.1 $\pm$ 3.1 years. When the breasts of the participants were evaluated on the 10th day after birth, it was determined that 71.8% had pain in their breasts, 66.7% had nipple tenderness and redness, and 65.6% had nipple cracks. 77.9% of mothers with breast problems stopped breastfeeding before the 6th month. When BSES-SF mean scores in the postpartum 10th day, 6th week and 6th month were compared between mothers who breastfeed and stopped breastfeeding, the BSES-SF scores were found to be similar in the first evaluation while statistically significant differences were found in the second and third evaluations (p0.001). When the mean EPDS scores of the mothers who were breastfeeding and those who stopped breastfeeding were compared, the difference was found to be statistically significant in all three evaluations (p0.05). **Conclusion:** It was determined that almost one-fifth of the mothers with breast problems continued to breastfeed for the first six months, breastfeeding mothers had a higher perception of breastfeeding self-efficacy, and the risk of experiencing postpartum depression was lower.

### KNOWLEDGE, ATTITUDE AND PRACTICES ON MODERN FAMILY PLANNING METHODS OF MALE PARTNERS OF POSTPARTUM WOMEN ADMITTED IN A TERTIARY GOVERNMENT HOSPITAL

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**Problem Statement:** Based on a local study, factors against contraceptive use among Filipino women are the following: 1) fear of side effects, 2) belief that they will unlikely become pregnant again, 3) cost of contraception, 4) opposition by family members, and 5) opposition by partners. Oftentimes, the role of the male partners in family planning is underestimated. Despite established data on the value of male partners on family planning, local studies focusing on this are limited. This study aims to determine the knowledge, attitude and practices of male partners of postpartum women admitted in a tertiary hospital on different family planning methods, and also seeks to determine whether an association exists between the level of knowledge, attitude and practices toward modern family planning. **Methods:** This was a qualitative descriptive study wherein a structured interview using a questionnaire was conducted among male partners of patients who delivered in a tertiary hospital in the Philippines. Associations were determined using a Chi-square analysis with p-value at an alpha of 0.05. **Results:** The participants had fair knowledge on family planning, with positive attitudes towards it, and with good practice. An association was seen between the knowledge and practices of male partners on family planning (p-value=0.001), as well as between attitude and practices (p-value= 0.013). However, no association was seen between knowledge and attitude. **Conclusion:** The role of the male partner in the use of family planning methods is



invaluable. Shedding light on their role may lead to increased, and more efficient use of different family planning methods. Knowing that they have fair knowledge and positive attitude towards family planning, we may improve their practices and encourage proper use of different family planning methods. We are able to identify and strengthen their weak areas. Emphasis should be put on the power and value of health education, and the availability of more health programs and family planning methods targeted to this population.

**Keywords:** Attitudes, family planning, knowledge, male partners, practices

**Disclosure of interest:** The authors declare that they have no conflict of interest.

## ORAL PRESENTATIONS 10: OTHER

### KNOWLEDGE, ATTITUDE AND PRACTICES OF OBSTETRICS-GYNECOLOGY RESIDENTS, PEDIATRIC RESIDENTS, AND NEWBORN SCREENING NURSES ON EXPANDED NEWBORN SCREENING PROGRAM DURING THE COVID-19 PANDEMIC IN A TERTIARY GOVERNMENT HOSPITAL

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**Problem Statement:** Newborn Screening (NBS) is a public health program that saves babies from mental retardation and death. In the Philippines, the COVID-19 pandemic affected implementation reducing coverage from 91.6% in December 2019 to 80% in December 2020. The objectives were to: 1) determine knowledge, attitudes, and practices (KAP) of physicians and nurses on the Expanded NBS Program (ENBSP) during the COVID-19 pandemic; 2) identify factors associated with knowledge, attitude and practices (KAP) on ENBSP; 3) identify challenges and recommendations. **Methods:** The study utilized a self-administered online questionnaire among Obstetrics-Gynecology Residents (OB-GYN), Pediatric Residents (Pedia), and NBS Nurses employed in a tertiary hospital in the Philippines in 2020. KAP scores of the 3 groups were described. Logistic regression was used to determine factors (age, sex, profession and years of practice) of favorable attitude. Linear regression was used for knowledge and practice score. Challenges and recommendations were identified. **Results:** There were 189 participants in the study: 49 OB-GYN, 55 Pedia, and 85 NBS Nurses. Percent knowledge scores  $\geq$  MPL (Mean Passing Level) were OB-GYN=73.5%, Pedia=81.8%, Nurses=85.9%. Percent attitude scores  $\geq$  MPL were OB-GYN=91.8%, Pedia=94.6%, Nurses=89.4%. Percent practice scores  $\geq$  MPL were OB-GYN=4.1%, Pedia=29.1%, Nurses=47.1%. Age, profession, and years in practice were not found to be statistically significantly associated with knowledge. Knowledge score and age are associated with favorable attitude: knowledge score  $\geq$  MPL, OR 10.8 (95% CI: 2.90-40.57), Age OR 0.82 (95% CI: 0.72-0.93). OB-GYN have lower practice scores by 2.15 compared to Pedia. The rest of the factors were not found to be statistically significantly associated with practice score. Challenges and recommendations were grouped by themes: education and counseling of parents/guardians, education of healthcare workers, protecting safety of healthcare workers and patients, improving manpower, processes, and infrastructure. **Conclusion:** Despite the challenges on ENBSP such as counseling mothers and testing their babies during the COVID-19 pandemic, the adequate knowledge and favorable attitude of the healthcare workers reinforced the practice of ENBSP with public safety precautions. Information generated

from this study offer opportunities for improvement of the program.

**Disclosure of Interest:** This study was funded by the Philippine Newborn Screening Reference Center.

### THE VALIDITY AND RELIABILITY OF THE DOMESTIC VIOLENCE DURING PANDEMIC SCALE TURKISH VERSION: A METHODOLOGICAL STUDY

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**Problem statement:** The aim of the authors in this study was to adapt the Domestic Violence during Pandemic Scale developed abroad into Turkish for the evaluation of domestic violence against women. **Methods:** This research was conducted with 354 married women over the age of 18 living in Turkey. The descriptive characteristics form, the Turkish version of the Domestic Violence During the Pandemic Scale and the Domestic Violence Against Women Scale were used to collect the data. Data collection tools were created digitally through Google forms and collected online by being delivered to women from social media such as whatsapp and instagram. The data were analyzed using SPSSfor Windows and AMOS program. The reliability of the scale was examined with Cronbach Alpha, two-half reliability. In addition, Explanatory and Confirmatory Analysis was performed for the construct validity of the scale. The discriminative power of the items was examined by 27% upside down item analysis. In addition, the stability of the scale was examined by the test-retest method. **Results:** The Cronbach's alpha coefficient of the Turkish version of the Domestic Violence during Pandemic Scale was 0.94, the item-total point correlations were between 0.56 and 0.80, and the correlation value of the test-retest was 0.90. In the parallel forms reliability conducted to determine the equivalence of the scales, there was a statistically significant correlation between the Turkish version of the Domestic Violence During the Pandemic Scale and the Domestic Violence Against Women Scale ( $r:0.726$ ,  $p0.001$ ). The results of the explanatory factor analysis revealed that a three factor structure, with factor loadings in the range of 0.54–0.79 explained 67% of the total variance. The results of the confirmatory factor analysis confirmed the validity of the three factor structure of the scale and that the data fit of the model was acceptable. **Conclusion:** It was established that the Turkish version of the Domestic Violence During the Pandemic Scale was a valid and reliable measurement instrument. This scale can be used for the evaluation of domestic violence against Turkish women during the pandemic period.

**Keywords:** Coronavirus, Pandemic, domestic violence, women, nurse

### DILEMMAS IN PREGNANCIES WITH PULMONARY HYPERTENSION - CASE REPORT FROM A LOW-RESOURCE SETTING

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**Problem Statement:** Little awareness persists on how pregnancy worsens cardiac diseases. This case report wishes to highlight the challenges and dilemmas in managing pulmonary hypertension (PH) in pregnancy, counterbalanced by consideration of human rights, in a low-resource setting. **Methods:** This is a case report of a 31-year-old G3P1A1 of 5 months gestation presenting with worsening dyspnea and



extremal edema. Pre-pregnancy, she had history of heart disease with poor compliance and no cardiologist follow-up. This was an unplanned pregnancy. She was diagnosed with type I/II pulmonary hypertension at 4 months gestation. Whilst admitted, her ultrasound revealed intrauterine fetal death (IUID). At presentation, she was tachypneic with maximum oxygen saturation at 68% but not in labor. Electrocardiogram revealed right ventricular hypertrophy. She was induced for labor and delivered a stillbirth. She was transferred to intensive care unit with maximum oxygen saturation at 60%. A bedside echocardiography revealed reduced ejection fraction, right atrial dilatation, normal ventricular function (85%), severe tricuspid regurgitation and high probability of PH. Unfortunately, her oxygen saturation declined further, and she passed away. **Results/Discussion:** Pulmonary hypertension is an absolute contraindication to pregnancy. A multidisciplinary team with rigorous and detailed follow-ups is necessary to manage PH in pregnancy, from antenatal care until delivery. Cardiac diseases in pregnancy contribute significantly to maternal mortality, likewise in Indonesia. Unfortunately, little awareness towards cardiac diseases still permeates Indonesian society. Traditional views on pregnancy and family compel women to conceive amidst severe underlying diseases. While human rights advocates continue to promote pregnancy and child-bearing as basic female rights, progressing with pregnancy complicated with cardiac diseases is detrimental and potentially lethal. Balancing basic reproductive rights and maternal morbidity and mortality is precarious. Lack of education, improper family planning and traditional perception towards offspring and ideal family contributed to our patient's ignorance of her condition and her persistence to conceive. **Conclusion:** Pregnancy remains contraindicated in pulmonary hypertension. Lack of awareness and improperly held beliefs on conception and family have led women to conceive amidst severe underlying cardiac diseases, with disastrous outcomes. Better education and counselling are necessary. Pregnancy Heart Team is mandatory in managing pregnancy with cardiovascular disease.

comorbid variables and their association with adverse maternal outcome (near miss and maternal death) were evaluated. Statistical analysis was performed using the statistical programs Epi Info version 7.2.5.0 and Medcalc version 20.111. **Results:** A total of 30 patients had adverse maternal outcomes (23 cases of near miss and 7 maternal deaths) and the frequency of AMO was 6.1%. There was a statistically significant association between AMO and the following variables: HELLP syndrome (RR = 11.09; CI = 3.63-33.89; p=0.0001); bleeding in the second half of pregnancy (RR = 5.18, CI = 1.50-17.82; p = 0.0090) and maternal clinical diseases (RR = 3.11; CI = 1.20-8.05; p = 0.0191). **Conclusion:** There was a statistically significant association between AMO and HELLP syndrome, bleeding in the second half of pregnancy and maternal clinical diseases. To prevent AMO in high-risk pregnant women, it is necessary to consider the individual importance of each of these variables, with preventive strategies that focus mainly on the hypertensive syndromes of pregnancy and avoid the problems resulting from excessive cesarean sections.

**Disclosure of interest:** The authors report no conflict of interest.  
**Keywords:** near miss, maternal death, high-risk pregnancy.

#### MATERNAL OUTCOMES IN PREGNANT WOMEN ADMITTED TO THE HIGH-RISK PREGNANCY UNIT OF A MATERNITY SCHOOL IN NORTHEASTERN BRAZIL: A COHORT STUDY

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**Problem statement:** Maternal death is a serious public health problem worldwide. Pregnant women with pregnancy complications are more likely to have an unfavorable outcome. This study aims to evaluate maternal outcomes and to determine the factors associated with adverse maternal outcome (AMO) in women admitted to the High-Risk Pregnancy Unit of a Maternity School in Northeastern Brazil.

**Methods:** A prospective observational cohort study was performed between December 2019 to December 2020, including a non-probabilistic, consecutive sample obtained from all obstetric patients admitted to the High Risk sector of the Instituto de Saúde Elpidio de Almeida (ISEA) in the city of Campina Grande /Paraíba. Patients who died at the time or within one hour of admission and those who were unable to agree to participate of the study were excluded. Biological, sociodemographic, obstetric, clinical, diagnostic and



## MODERATED E-POSTER ABSTRACTS

### MODERATED E-POSTERS SESSION 1: FETOMATERNAL MEDICINE

#### THE PROGNOSIS OF ISOLATED OMPHALOCELE AND GASTROSCHISIS: CASE REPORTS

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**Problem statement:** Abdominal wall defects, specifically the main two types, gastroschisis and omphalocele, are rare, occurring in about one out of every 5000 births. The prognosis of Omphalocele is related to the presence or absence of comorbid malformations, and the prognosis of gastroschisis depends on the condition of the intestine. Although prenatal diagnosis of abdominal wall defect in the first trimester scan is not difficult, the main difficulty is the exclusion of associated conditions and determine the timing of delivery. **Methods and Result:** A 35-year-old woman with 12 week' gestation was transferred. The prenatal ultrasonography showed 1.5x1.46cm sized omphalocele. Genetic evaluation demonstrated normal karyotype, variant of unknown significance (VUS) in macroarray and NGS. No other associated anomaly was observed, during antenatal care. At 36 weeks, a male baby (2745g) was delivered by cesarean section, due to non-reassuring fetal heart rate. The baby received two-stage operation and there has been no specific finding until 25 months. A 36-year-old woman at 12 weeks' gestation was transferred. The prenatal ultrasonography showed 3.7x2.7cm sized omphalocele from the abdominal wall defect. Genetic evaluation demonstrated normal karyotype, VUS in macroarray and NGS. No other associated anomaly was observed, during antenatal care. At 36 weeks, a female baby (2094g) was delivered by cesarean section due to intrauterine fetal growth restriction (IUGR), fetal ascites, and preeclampsia. The baby received two stage operation. The baby has showed feeding difficulty and repeated wound problem, but complete wound healing was observed at postnatal 16 months. 25-year-old women at 16 weeks' gestation was transferred. The prenatal ultrasonography showed 2.3x2.0 cm sized bowel hernia without covering membrane. Genetic evaluation demonstrated normal karyotype. No other associated anomaly was observed, during antenatal care. At 34 weeks, a female baby (1860g) was delivered by cesarean section due to IUGR and suspected volvulus. The baby received repair operation and there has been no specific finding until 65 days. **Conclusion:** Cases with isolated abdominal wall defects usually have good prognosis after postnatal management, after genetic and ultrasonographic evaluation. Multidisciplinary counselling and preparation about the risk of preterm emergency delivery in tertiary centers are required to improve outcomes.

#### SUCCESSFUL PRENATAL AND PERINATAL APPROACH OF FETAL OMPHALOCELE WITH ISOLATED EXTRACORPOREAL LIVER: CASE REPORT

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**Problem statement:** Omphalocele, or exomphalos, is a congenital malformation due to a defect in the closure of the anterior abdominal wall. This leads to midline herniation of the abdominal viscera covered by a membranous sac, into the base of umbilical cord insertion. This case is rare with an incidence of 1-3.8/10.000 pregnancies. Recent studies have shown an increasing trend of omphalocele worldwide for the past 20 years. The perinatal management of omphalocele, especially with extracorporeal liver still remains challenging until now. The baby was also reported to have worse prognosis with low survival rate. **Case:** A 40-years-old pregnant woman with multiparity, two living children, history of miscarriage five times, and three consecutive abortions from the fifth until seventh pregnancy. Her baby was diagnosed with isolated omphalocele enclosing hepatic content with large size of abdominal defect at 22 weeks of pregnancy. Routine ultrasonography was performed. The initial plan was to terminate the pregnancy at 38 weeks by elective cesarean section with precautionary risk of ruptured omphalocele during birth. Unfortunately, emergency cesarean section was performed at 36 weeks due to preterm labor. Born baby girl weighed 2250 gram with APGAR score 7-8. Conservative treatment with delayed surgical closure was chosen and the baby was sent home after 15 days.



**Discussion:** The earliest timing to detect omphalocele is at 12 weeks of pregnancy. Extracorporeal liver usually happens if the abdominal defect size is more than 5 cm. It could manifest as an isolated abnormality and rarely associated with chromosomal abnormalities. Some reports has been associated it with worse prognosis due to its great correlation with malformations and the increased risk of pulmonary hypoplasia after birth. **Conclusion:** Prenatal diagnosis of omphalocele through ultrasound is highly sensitive and specific since the first trimester. Further efforts to determine fetal omphalocele based on the liver location should be considered in the future to improve patient care. Early detection has a major role in the prognosis of the baby, through prior counseling, routine follow-up, and prompt management for the plan of termination. Coordination of multidisciplinary team plays a bigger role in the successful management of these patients.

#### THE DILEMMA OF ABDOMINAL PREGNANCY MANAGEMENT WITH LIVE FETUS: A CASE REPORT

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**Problem statement:** Abdominal pregnancy is a form of ectopic pregnancy with site of implantation on Douglas pouch, omentum, pelvic wall, bowel, liver, diaphragm, spleen, or liver. Incidence of abdominal pregnancy is 1:10.000-30.000 (1% of total ectopic pregnancy). It's associated with increased of perinatal and maternal mortality (90 times for normal delivery and 7 times for ectopic pregnancy in general). The management of abdominal pregnancy depends on condition of mother and fetus. Abdominal pregnancy with live fetus can be manage with expectant management. However, it can cause bleeding when the fetus makes rupture of surrounding organ, which becoming a dilemma on the management of this case. **Case:** A 36-year-old woman with G3P2 11 weeks of gestational age presents abdominal pain in the last 1 week before admission. On examination found stable vital sign with tenderness of abdomen on lower part of abdomen. The complete blood count was done and the Hb level was 10.2 g/dL. From US study found empty uterus with no visible gestational on the uterus cavum. There was a complex mass on uterus with attachment to intestine wall. There is a fetus with heart rate 140 beats per minute in the complex mass. **Discussion:** The management of abdominal pregnancy is based on gestational age, maternal hemodynamic status, and location of placenta implantation. There are two types of management such as conservative and termination (surgical and nonsurgical treatment). The conservative management is to conserve the fetus until as term as possible with monitoring of the mother and fetus continuously. Surgical termination is to evacuate the fetus with laparotomy or laparoscopy procedure. And the other option is nonsurgical termination using specific modality such as methotrexate. On this case, the mother suggested to had surgical procedure even the fetus still alive. This was a dilemma because there was tubal rupture even though hemodynamic was stable. This management was also decided based on informed choice from the patient. **Conclusion:** Abdominal pregnancy is rare and highly morbid compare to ectopic pregnancy. It demands skilled approach in management. Comprehensive approach is required in order to deliver the best outcome for the patient and family.

#### FETAL MALFORMATION WITH PLACENTA ACCRETA SPECTRUM - TWO DIFFICULT TALES IN A PREGNANCY

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**Problem:** Placenta accreta spectrum (PAS) disorders are rare but are potentially dangerous condition and potentially life-threatening obstetric condition of high maternal and fetal / neonatal morbidity and mortality. Anencephaly is major lethal fetal anomalies of severe central nervous system malformation, and most common type of neural tube defect.

**Methods:** We are presenting management of a rare case of 32-years third gravida woman having Placenta increta with Anencephaly in fetus is a rare entity, who's management was a real challenge with prevention of any life-threatening haemorrhage. **Results:** Due to some personal reason, she failed to get admitted for termination of pregnancy. At 16-week gestation visit, on repeat USG scan diagnosed with placenta covering internal-os with myometrial thinning, lacunar spaces, loss of the retroplacental clear space and increased vascularity. Patient was counselled and was planned for Hysterotomy with consent of hysterectomy. Bilateral internal iliac artery balloon occlusion failed to reduce blood loss intraoperatively. Patient was given all recommended

uterotonic, bilateral uterine and ovarian artery ligation and aortic compression to control severe uterine bleeding but patient became hemodynamically unstable, had massive haemorrhage (~2.0 Lt) intra-operatively. To save life of patient from life threatening severe haemorrhage, balanced haemostatic resuscitation with surgical decision of hysterectomy was taken. **Conclusion:** In this case aim was to preserve the uterus for future fertility and successful termination of pregnancy. Unfortunately, because of life threatening severe haemorrhagic shock, despite all measures and balanced haemostatic resuscitation, hysterectomy had to be done as a life saving measure. This case highlights need of perioperative multidisciplinary team for planning, approach and management.

#### A CASE REPORT ON THE MULTIDISCIPLINARY APPROACH TO RECTAL ADENOCARCINOMA IN PREGNANCY

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Pregnancy is a period in a woman's life wherein the body may undergo different physiological changes. These changes can be attributed to the interplay of hormones in the body but can mask a more sinister type of disease such as malignancy on rare occasions. Colorectal cancer (CRC) in pregnancy is an epidemiologically rare disease worldwide. To our knowledge, no available studies were reported in the Philippines at the time of this writing, posing a dilemma for its appropriate diagnosis and management. Signs and symptoms of colorectal malignancy may camouflage a normal pregnancy and, when overlooked, impedes an appropriate approach. This is a case of a 38-year-old elderly primigravid who presented with hematochezia on her 25th week of gestation. She was diagnosed with rectal adenocarcinoma later in pregnancy which warranted a predicament on her appropriate care and management. This paper explores the repertoire of the different diagnostic and treatment approaches to CRC in the second trimester of pregnancy, with the least possible maternal and fetal hazards.

**Keywords:** cancer in pregnancy, chemotherapy in pregnancy, colorectal cancer, hematochezia in pregnancy  
The authors declared no conflict of interest.



Abdominal MRI (coronal and axial views) showing a single intrauterine fetus (yellow arrows) with several lobulated hepatic lesions which are worrisome for metastasis (red arrows)

#### A CASE OF JOUBERT SYNDROME DIAGNOSED BY NEXT GENERATION SEQUENCING

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**Problem statement:** Joubert syndrome (JS) is a rare genetic disorder characterized by 'molar tooth sign' resulting from cerebellar vermis hypoplasia and brainstem anomalies on MRI, developmental delay, oculomotor apraxia, and respiratory irregularities. With the exception of rare X-linked recessive cases, JS is predominantly inherited in an autosomal recessive inheritance and 35 causative genes have been identified to date including CC2D2A mutation. **Methods/Results:** A 39-year old woman, gravida 5 para 2, attended our hospital for prenatal monitoring. Prenatal ultrasound performed at 21+6 weeks revealed a vermis hypoplasia with left multicystic dysplastic kidney. Fetal MRI at 22+0 weeks demonstrated hypoplasia of the vermis as well as cystic dilatation of the fourth ventricle extending posteriorly. There was no clear sign of molar tooth. She had a history of termination at 22 weeks due to suspicion of Dandy walker variant in her first pregnancy and two consecutive spontaneous abortions. She decided to receive genetic studies for the fetus. Amniocentesis revealed a normal karyotype whereas Chromosomal Microarray Analysis (CMA) identified a 219kb deletion at 14q21.1, which was a variant of unknown significance (VUS). Due to similar ultrasonographic findings with the first pregnancy, next generation sequencing for 985 genes related with developmental delay and autism spectrum disorder was performed for fetal cells from amniocentesis. In CC2D2A, two heterozygous mutations were identified, one classified as a VUS and the other classified as a likely pathogenic variant. Genetic analysis of parental blood confirmed that the father had a VUS in exon 24 of CC2D2A, c.2999AT, and the mother had a likely pathogenic variant in exon 30 of CC2D2A, c.3597\_3600delTGAT, related to JS. They decided to terminate the pregnancy. A year later, she became pregnant again and prenatal genetic tests showed normal karyotype without any mutation in CC2D2A gene. She delivered a healthy baby girl at term. **Conclusion:** JS has a high recurrence rate up to 25%. When recurrent fetal brain anomalies are detected during pregnancies, not only karyotyping and CMA but also additional genetic studies including parents, may be helpful for detecting the cause and counseling of the future pregnancies.

#### TWO CASES OF CHRONIC PLACENTAL ABRUPTION-OLIGOHYDRAMNIOS SEQUENCE

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**Problem statement:** Chronic abruption-oligohydramnios sequence (CAOS), characterized by chronic vaginal bleeding and oligohydramnios because of chronic placental abruption, is a rare condition of pregnancy, which is associated with poor pregnancy outcomes, including preterm delivery, growth restriction, pulmonary hypoplasia, and neonatal death. CAOS is defined by the following criteria: (1) clinically significant vaginal bleeding in the absence of placenta previa or other identifiable source of bleeding, (2) amniotic fluid volume initially documented as normal, and (3) oligohydramnios eventually developing without concurrent evidence of ruptured membranes. **Methods/Results:** In our first case, a 35-year old woman, gravida 1, para 1, was referred to our department with regular contraction and vaginal bleeding at 23+5 weeks. She had experienced recurrent vaginal bleeding without oligohydramnios since 13 weeks of gestation. When she admitted our hospital, ultrasound examination revealed oligohydramnios with fetal growth restriction (estimated body weight 507g, 5.8 percentile). Subchorionic hematoma was

found with a size of 5.72 x 3.05 cm. There were regular uterine contractions and her cervical length was 1 cm. Despite of tocolytic therapy, active preterm labor proceeded and breech vaginal birth after cesarean section was performed. A male newborn weighing 565 g with Apgar scores of 1/1min and 2/5 min was delivered. The placenta showed acute chorioamnionitis with focal necrosis with hemorrhage. In our second case, a 37-year old nulliparous woman was transferred to our department because of prolonged fetal deceleration at 23+6weeks. She had suffered from vaginal bleeding with subchorionic hematoma since 22 weeks of gestation. On admission, ultrasound examination revealed severe growth restriction (430g, 3.0%) with oligohydramnios without clinical evidence of membrane rupture. Subchorionic hematoma, 6.6 cm sized, was noted as well. At 24+1 weeks, emergency cesarean section was performed due to the enlargement of hematoma (6 cm to 10 cm) and biophysical profile of 4/8. A male newborn weighed 485 g and had an Apgar score of 2/1 min and 5/5 min. Amniotic fluid showed dark red with blood clots, which was suggested of placental abruption. **Conclusion:** We need to pay attention to pregnant women who have recurrent vaginal bleeding with subchorionic hematoma, as one symptom of CAOS.

## MODERATED E-POSTERS 2: OTHER, INFERTILITY/ART/IVF, GYNECOLOGICAL ONCOLOGY

### OTHER

#### HYPERCHOLESTEROLEMIA AND SOA: CHOLESTEROL EXCESS IN EGGS INDUCES INTRACELLULAR CALCIUM INCREASE LEADING TO PARTHENOGENIC ACTIVATION

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**Problem statement:** The etiology of spontaneous oocyte activation (SOA) in human eggs remains poorly understood. Mice deficient in the main-HDL receptor (SR-B1) KO are infertile, with eggs with cholesterol excess and high rates of parthenogenic activation and demise. Loading wild-type mouse eggs with methyl- $\beta$ -cyclodextrin-cholesterol (M $\beta$ CD-chol) induces intracellular calcium ([Ca<sup>2+</sup>]<sub>i</sub>) increases and parthenogenic cleavage. Plasma membrane (PM) channels CaV3.2 and TRPV3 regulate Ca<sup>2+</sup> influx during egg maturation and fertilization. Here, we characterized [Ca<sup>2+</sup>]<sub>i</sub> in M $\beta$ CD-chol-loaded eggs and studied the involvement of CaV3.2 and TRPV3 in this event. **Methods:** Eggs obtained from superovulated C57Bl6/J mice were loaded with FURA-2AM and M $\beta$ CD-col (0.125 $\mu$ M) during [Ca<sup>2+</sup>]<sub>i</sub> monitoring. Some eggs were incubated with 5mM SrCl<sub>2</sub>, Ca<sup>2+</sup>-free or thapsigargin (tg) (SERCA inhibitor)-containing media. Calcium was monitored in CaV3.2/TRPV3 knockout (dKO)-cholesterol-loaded eggs. Results are expressed as mean%  $\pm$  SE or median% (1st quartile-3rd quartile). Statistics were performed using  $\chi^2$ . **Results:** Most cholesterol-loaded eggs (n=44) showed [Ca<sup>2+</sup>]<sub>i</sub> rises and activated: 60(25-68)%



showed one peak and 25(11-40)% showed oscillations. Irreversible Ca<sup>2+</sup> rises followed by demise were observed in a few eggs. After incubation with SrCl<sub>2</sub>, 87±5% (n=38) cholesterol-loaded eggs showed calcium elevation(s), 28±3% of which were irreversible and induced death. While most cholesterol-loaded eggs in nominal Ca<sup>2+</sup>-free medium showed [Ca<sup>2+</sup>]<sub>i</sub> rises [70(30-100)% (n=57)], all the eggs in tg-containing medium showed irreversible [Ca<sup>2+</sup>]<sub>i</sub> increases and died (n=52). Finally, only 3(0-30)% dKO eggs (n=61) showed one tiny [Ca<sup>2+</sup>]<sub>i</sub> rise vs. WT eggs (n=18) (p<0.0001).

**Conclusion:** Cholesterol-induced [Ca<sup>2+</sup>]<sub>i</sub> increase relies on both Ca<sup>2+</sup> release from intracellular stores and extracellular Ca<sup>2+</sup>-influx and requires Cav3.2 and/or TRPV3 channels. Irreversible [Ca<sup>2+</sup>]<sub>i</sub> rises may explain cholesterol-loaded egg demise, and functional Ca<sup>2+</sup>-intracellular stores are required to prevent demise. In sum, aberrant intracellular calcium increase induced by opening of PM channels due to cholesterol excess may explain the phenotype in infertile SR-B1 KO mice and could help to understand human SOA.

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### FUNCTIONAL HYPOTHALAMIC AMENORRHEA WITH OR WITHOUT POLYCYSTIC OVARIAN MORPHOLOGY: A RETROSPECTIVE COHORT STUDY ABOUT INSULIN RESISTANCE

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**Problem statement:** It has been reported, that women with functional hypothalamic amenorrhea (FHA) often reveal polycystic ovarian morphology (PCOM). This was associated with a higher body mass index (BMI), lower levels of sexual hormone binding globulin (SHBG) and a positive correlation between BMI and serum levels of luteinizing hormone (LH). These metabolic alterations are typical for polycystic ovary syndrome (PCOS). A main metabolic PCOS-associated alteration, even in PCOS patients with normal weight, is chronic insulin resistance. The aim of this study was to evaluate the homeostasis model assessment of insulin resistance (HOMA-IR) in FHA patients with and without PCOM. **Methods:** In this retrospective cohort, 20 FHA women with PCOM and 20 FHA women without PCOM from January 2020 to March 2022 were included. The main outcome parameter was the HOMA-IR (mg/dl). In addition, serum levels of follicle stimulating hormone (FSH), LH, estradiol, total testosterone, dehydroepiandrosterone-sulphate (DHEA-S), SHBG and anti-Mullerian hormone (AMH) were analyzed. P-values < 0.05 were considered significant. **Results:** FHA women with PCOM revealed a higher HOMA-IR (1.06mg/dL, IQR 0.75-1.23 vs. 1.56, IQR 1.21-1.94; p=0.003) and higher levels of luteinizing hormone, testosterone and anti-Mullerian hormone (p<0.05) than FHA women without PCOM. In contrast to the latter, patients with PCOM showed significant positive correlations between LH and BMI, LH and HOMA-IR, and BMI and HOMA-IR as well as a significant negative correlation between SHBG and HOMA-IR (p < 0.05). **Conclusion:** FHA women with PCOM revealed metabolic alterations characteristic of PCOS and might be at an increased metabolic risk. Presumably, at least some of these women initially had had polycystic ovary syndrome before acquiring FHA.

**Conflict of interest:** All authors declare that there is no conflict of interest related to this work.

### TO COMPARE THE USG GUIDED BILATERAL QUADRATUS LUMBORUM BLOCK WITH WOUND INFILTRATION FOR POSTOPERATIVE PAIN MANAGEMENT AFTER LOWER SEGMENT CESAREAN SECTION

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**Problem statement:** Adequate post-operative multimodal analgesia is vital, for early surgical recovery of the parturient to take care of herself and to new-born child. Although newer analgesic drugs and techniques are safe and good but ideal option is still the quest. The study was done with the primary object to access the efficacy of USG guided bilateral quadratus lumborum (USGBQL) block to wound infiltration for postoperative analgesia after lower segment caesarean section (LSCS). **Methods:** This prospective, double-blind, randomised controlled, single centric trial, was done on 67 ASA- 2, patients with normal singleton term pregnancy scheduled for elective caesarean section under spinal anaesthesia. They were randomly assigned in two groups as Group 1 (n = 30), receives USG guided bilateral quadratus lumborum (USGBQL) block with 30 ml of 0.25% levobupivacaine or Group 2 (n = 37), wound infiltration with same drug and amount. Both the groups were assessed for severity of pain by NRS score (static and dynamic), rescue analgesic requirement, patient satisfaction, ambulation and lactation for 24 hrs postoperatively. **Results:** Patients given USGBQL block had significantly lesser pain (only mild) in term of NRS score (at rest and dynamic) and had significantly less fentanyl demand and consumption as 207±178.57 mcg vs. 602.89±192.98 mcg, none of the patient had rescue analgesic requirement, having better patient satisfaction (93.3% vs. 59.4%), early ambulation in 6-12 hrs (86.7% vs. 8.1%) than to wound infiltration group (37.8% need rescue analgesic). None of the group had side effects related to use of opioid (fentanyl). **Conclusion:** Both the techniques had reduced the postoperative pain, but USGBQL block provides significantly more efficacious postoperative analgesia with lesser opioid consumption, lesser rescue analgesia requirement, better patient satisfaction, early ambulation that facilitate early lactation and care of new born as compared to wound infiltration.

### INFERTILITY/ART/IVF

#### IMPACT OF RADIATION ON SERUM ANTI-MÜLLERIAN HORMONE DURING HYSTEROSALPINGOGRAPHY IN FEMALE INFERTILITY

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**Problem statement:** Tubal patency testing is traditionally performed by hysterosalpingography (HSG); however, the main drawback of this procedure is exposure to ionizing radiation. A previous study on an animal model reported germinal epithelium degeneration after exposure to a very low dose of ionizing radiation during the HSG procedure. However, it is unclear whether the results could apply to humans. Therefore, this study aimed to assess the impact of radiation during HSG on ovarian reserve by measuring the





serum Anti-Müllerian Hormone (AMH) levels. **Method:** A prospective cohort study was conducted between 1 April 2021 and 30 May 2022 in Songklanagarind Hospital, Thailand. A total of 21 infertile women who were scheduled for HSG during their fertility work-up and 21 healthy women with no history of infertility were enrolled. The serum AMH was obtained at baseline before the procedure and at 1 and 3 months after the procedure. In the non-exposed group, AMH was obtained in the same fashion. The changes in serum AMH were compared between the infertile women and non-exposed women. **Results:** Twenty-one infertile women had a mean age of  $33.5 \pm 3.7$  years, a mean body mass index (BMI) of  $21.2 \pm 1.9$  kg/m<sup>2</sup>, and the mean baseline AMH was  $3.7 \pm 2.1$  ng/ml, which were not significantly different compared with the non-exposed women. The median (interquartile range) entrance surface dose and time of exposure for the HSG procedure were 17.7 mGy (14.3, 24.7) and 124 seconds (74, 205), respectively. After HSG was performed, the change in serum AMH level between baseline and 1 month was significantly different compared to non-exposed women ( $-0.32$  ng/ml [95% CI  $-0.68$  to  $0.04$ ] vs.  $0.20$  ng/ml [95% CI  $-0.15$  to  $0.55$ ];  $P=0.04$ ). However, the changes in serum AMH level from baseline to 3 months were not different between the groups. The serum AMH levels in both groups were adjusted for age and BMI. **Conclusion:** The level of AMH in the HSG group showed a decline one month after HSG was performed and the changes in the serum AMH levels between baseline and 1 month were significantly different between the HSG group and non-exposed group.

#### HETEROTOPIC PREGNANCY AS A COMPLICATION OF ASSISTED REPRODUCTION TECHNIQUES (ART)

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**Problem statement:** Heterotopic pregnancy is the synchronous existence of one intrauterine conceptus with one that is ectopically implanted. It is a rare entity, with a natural incidence of 1 per 30,000 pregnancies. However, with ART a rising incidence of 9 in 10,000 pregnancies is noted. Heterotopic pregnancy shares the same risk factors as ectopic pregnancy, including fallopian tube abnormalities such as pelvic inflammatory disease, previous tubal or abdominopelvic surgery, and endometriosis. Therapeutic management should be individualized, but is often prompt surgical termination of the ectopic pregnancy, while minimizing harm to the mother and to a possibly otherwise unaffected intrauterine fetus. **Methods:** We report a case of heterotopic pregnancy after ovulation induction with clomiphene citrate. **Results:** 34-year-old primigravida was brought in by ambulance at 8+2 weeks of pregnancy with acute lower abdominal pain and syncopal episodes. Her pregnancy occurred as a result of ovarian stimulation with clomiphene citrate and timed intercourse. She had already been diagnosed with normal intrauterine pregnancy. The patient was hemodynamically unstable, with arterial blood pressure of 70/40 mm Hg and heart rate of 110 bpm. Therefore, intravenous fluid administration was initiated. On clinical examination, typical signs of acute surgical abdomen as rigidity and rebound tenderness were found. Her blood count revealed anemia (Hb 7.7 g/dL). Further investigation with transvaginal ultrasound showed missed abortion, with a crown-rump length of 20.3 mm, along with an extrauterine sac with a fetal pole with CRL 19 mm and cardiac activity, in the right adnexal region and free intraperitoneal fluid. The extent of hemoperitoneum was assessed with transabdominal

ultrasound and was found to fill the pericolic gutters and Morison pouch. The patient underwent right salpingectomy, via emergent laparotomy, as well as suction curettage. The postoperative course was uneventful and the patient was discharged after a total hospital stay of 4 days with appropriate plans for follow-up. **Conclusion:** Diagnosis of heterotopic pregnancy can be a challenge for the clinician and the deceptively reassuring detection of an intrauterine fetus may delay early intervention. Comprehensive ultrasound examination in the first trimester is crucial, with a higher suspicion in case of women treated with ART.

#### GYNECOLOGICAL ONCOLOGY

##### OBSTRUCTIVE NEPHROPATHY DUE TO CERVICAL CANCER HIGH RISK TO CHRONIC KIDNEY DISEASE: A SYSTEMATIC REVIEW

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**Problem Statement:** Cervical cancer (CC) is the most common female cancer in the developing countries. In 2018 the prevalence of cervical cancer in Indonesia was 348,809 cases with a mortality rate 207,210 deaths. Worldwide 527,600 new cases are diagnosed annually, with 265,700 deaths. Despite advancements in the treatment of urogenital neoplasms, surgical techniques, radiotherapy and chemotherapy, there are still lot cases with progression to obstructive urinary complications due to local expansion or pelvic metastases. Overall survival of advanced stage III/IV CC with obstructive nephropathy (ON) is less than 15–20%. The relationship between cervical cancer and the risk of developing chronic kidney disease (CKD) is thought to be due to untreated ON. For this reason, the management of obstructive nephropathy in CC patients must be aggressive and involve nephrology, urology and gynecology oncology. **Methods:** This systematic review summarizes several articles that discuss obstructive nephropathy CC and the relationship between CC and CKD. **Results:** Cervical cancer is a major global health problem, representing the second or third neoplasia in women and with an increasing incidence of 0.6% per year. Invasive CC is a preventable disease because it has a long pre invasive state which can be detected by cervical cytology, but due to less awareness, over 70% of the cases present in advanced stage with associated poor prognosis. Cervical cancer is a common cause of ON. In CC patients, lymphatic invasion and metastatic nodules at this level may also lead to compression at the higher ureteral levels. In persistent obstruction will occur interstitial inflammation with tubular apoptosis and interstitial fibrosis with nephron loss and tubular dilatation follow, resulting in reduced filtration fraction, significant drop in renal blood flow and risk for CKD. Percutaneous nephrostomy (PCN) is the commonly practiced method, not only to improve renal function, but also to improve quality of life. **Conclusion:** Obstructive nephropathy due to either external compression or malignant involvement of lower ureters by the tumor, lymphatic invasion & metastatic nodules in cervical cancer patients is a risk factor for CKD if not treated properly.

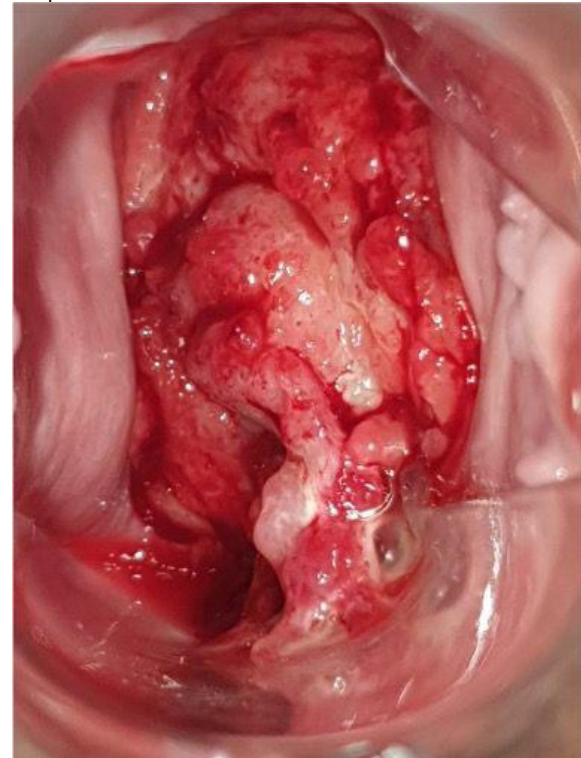
##### MISDIAGNOSED CERVICAL CANCER FOR NABOTHIAN CYST IN PREGNANCY, CASE REPORT

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**Problem statement:** The adult uterine cervix may exhibit a various pathologic condition that include benign entities such as cervicitis, hyperplasia, nabothian cysts, cervical polyps, leiomyomas, endometriosis, and congenital abnormalities, as well as malignant lesions, particularly cervical carcinoma. Most nabothian cysts are discovered accidentally during routine pregnancy examinations and those are common benign findings of the squamocolumnar junction of the cervix. On the other hand, the prevalence of cervical cancer during pregnancy is 1.2 per 10,000. **Case:** We report a case of cervical cancer misdiagnosed and covered as nabothian cyst during pregnancy. A 38-year-old multigravida woman was referred to our hospital because of abnormal PAP test finding and HPV infection at 7 weeks's gestation. By ultrasonography, about 1.4cm sized cervical cystic lesion was seen. And a cervical mass suspected nabothian cyst was identified at the 6 o'clock direction without cervical erosion on colposcopy. Pap test and HPV genotyping real-time PCR were performed in our hospital, the result were AGUS and HPV number 18 positive. We decided to re-evaluate cervical condition after 3 months. 3 months later, cervical mass size was increased up to 3.3cm. The result of Pap test was AGUS and biopsy was recommended. As a result of biopsy, cervical adenocarcinoma was diagnosed. **Conclusion:** Cervical adenocarcinoma is difficult to diagnose and progression is very fast in pregnant. Because we can't evaluate endocervix to curettage in pregnancy, so endocervix should be observed more carefully using transvaginal ultrasound or MRI.

tuberculosis process. The conclusion of cervical tuberculosis was made. Anti-bacillary quadruple antibiotic therapy combining Rifampicin, Isoniazid, Pyrazinamide and Ethambutol was conducted for 9 months. At nine months, the cervix had an almost normal appearance and complains from the patient were lessen.



**Conclusion:** This case emphasizes that though uncommon, tuberculosis is an important alternative in the differential diagnosis of carcinoma cervix. A high index of suspicion is required for a successful diagnosis of cervical tuberculosis, especially in the developing country.

### MODERATED E-POSTERS 3: GYNECOLOGY

#### PRIMARY TUBERCULOSIS OF CERVIX MIMICKING CERVICAL CARCINOMA: A CASE REPORT

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**Problem Statement:** Primary tuberculosis of the cervix is a very rare case and its prevalence only about 0.1-0.65 % of all tuberculosis cases. Although Indonesia is the second country with the most cases of tuberculosis. Spread to cervix by hematogenous, lymphatic or by direct local extension. Lesions in cervical tuberculosis can resemble lesions in cervical carcinoma with similar complaints. **Methods:** Observational. **Result:** Mrs. N, a 36-year-old Indonesian woman presented to the gynecological outpatient clinic at Wahidin Sudirohusodo Hospital, Makassar, Indonesia, with abnormal vaginal discharge 6 months ago. The abnormal discharge was yellow-white colored, itchy, foamy, and fishy smelling discharge. She had history of post coital bleeding, dyspareunia, and significant weight loss over the last 10 months. She denied any cough, fever, or abdominal pain. She has no history of genitourinary malignancy of tuberculosis in the past or in the family. She had been in close contact with a relative who had pulmonary tuberculosis which she did not know before. On examination, the patient was found to be thin built and poorly nourished. On bimanual examination, uterus was anteverted, normal in size and bilateral fornixes were free. The speculum examination revealed an unhealthy bulging/bumpy cervix which friable and bled on touch. (Figure 1) Per rectal examination did not reveal any abnormalities. Laboratory examinations and chest x-ray within normal limits. Pap smear showed superficial, intermediate, parabasal squamous epithelial cell with the background of very dense PMN leukocytes, Lactobacillus vaginalis and erythrocytes that indicates non-specific chronic cervicitis. Cervical biopsy revealed acute exacerbations of chronic inflammation suggest a granulomatous inflammation cause by a specific

#### COMPARISON OF ANTHROPOMETRY, BIOCHEMICAL AND HORMONAL PARAMETERS IN POLYCYSTIC OVARY SYNDROME RECEIVING METFORMIN THERAPY WITH AND WITHOUT VITAMIN C

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**Problem Statement:** Polycystic Ovary Syndrome (PCOS) is a multifaceted gynecological problem. High body mass index (BMI) and insulin resistance play a role in the pathogenesis of PCOS. The high levels of oxidative stress caused by insulin resistance can be treated with antioxidants such as vitamin C. We wish to explore this relationship. **Methods:** This was an experimental study with intervention test with double blinded parallel design followed by comparative test on PCOS patients who were given metformin 1500 mg with and without vitamin C 1000 mg for 10 weeks. **Results:** We found no significant difference in BMI (p=0.467), fasting blood glucose tolerance test (p=0.432) and oral glucose tolerance test. (p 0.132) between the two groups. There was a significant difference in fasting insulin (p = 0.016) and HOMA-IR levels (p = 0.022) between the two groups. **Conclusion:** Vitamin C can be suggested as an adjunctive therapy for PCOS patients



with insulin resistance.

#### THE POTENTIAL OF TRANSFORMING GROWTH FACTOR-BETA INHIBITOR AND VASCULAR ENDOTHELIAL GROWTH FACTOR INHIBITOR AS THERAPEUTIC AGENTS FOR UTERINE LEIOMYOMA

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**Problem statement:** Uterine leiomyoma is the most common benign tumor in women of reproductive age and can cause infertility. The growth of uterine leiomyomas is mediated by various steroids and growth factors. The purpose of this research is to evaluate the expression of various growth factors in uterine leiomyoma. Additionally, comparing the effects of existing medication and specific growth factor inhibitors on leiomyoma and normal myometrium, we aimed to see the potential of transforming growth factor-beta (TGFβ) inhibitors and vascular endothelial growth factor (VEGF) inhibitors as a therapeutic drugs for uterine leiomyoma.

**Methods:** This in vitro study included uterine leiomyoma samples from 12 patients who underwent hysterectomy by laparoscopy or laparotomy at Seoul St. Mary's Hospital between May 2016 and March 2018. The expression of growth factors in normal myometrium and leiomyoma was compared using immunohistochemical staining. After the primary culture of normal myometrial and leiomyoma cells, cell viability was evaluated following treatment with 100 nM UPA and mifepristone for 48 h. Western blot analysis was performed to determine the protein expression of each growth factor. Cell viability was determined following treatment with a 10 μM TGF-β inhibitor (LY364947) and a 5 μM VEGF inhibitor (axitinib) for 24 h in cultured normal myometrium and leiomyoma cells. **Results** Immunohistochemical staining revealed the significantly higher intensity of TGF-β and VEGF in the leiomyoma tissue than in the normal myometrium (P 0.05). Mifepristone treatment decreased VEGF expression by 62% in the leiomyoma cells (P 0.05). According to the cell counting kit-8 (CCK-8) assay, cell viability was decreased after UPA, mifepristone, TGF-β1 inhibitor, and VEGF inhibitor treatments in the normal myometrium and leiomyoma tissue. The effects of the TGF-β1 inhibitor significantly differed between normal myometrium and myoma tissue, with a greater decrease in cell survival in the leiomyoma tissue (P 0.05). Post-hoc analysis showed that the TGF-β1 and VEGF inhibitors had a greater inhibitory effect on leiomyoma tissue compared with that of UPA. **Conclusion** TGF-β and VEGF inhibitors significantly decreased the viability of uterine leiomyoma cells, showing stronger effects than the conventional drug ulipristal acetate (UPA). TGF-β1 inhibitors affect both leiomyoma tissue and the normal uterus; thus, targeted local treatment rather than systemic treatment should be considered.

#### INTRAOPERATIVE URETER LOCALIZATION WITH ICG IN ROBOTIC HYSTERECTOMY: UNILATERAL NON-FUNCTIONING KIDNEY DUE TO DEEP INFILTRATING ENDOMETRIOSIS

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**Study Objective:** Urinary tract injury is a well-known complication of gynecologic surgery and most common cause is iatrogenic trauma during surgery. 0.03-1.5% ureteral injury is reported in gynecologic surgery and it rises up to 11% in high-risk reconstructive pelvic surgery. Fluorescence imaging with indocyanine green may be beneficial for assuring ureter's pathway. **Design:** Robot assisted laparoscopic total hysterectomy, ovary cystectomy and right nephrectomy was planned. **Setting:** Saving one left healthy kidney was essential for the patient whose right kidney was already sacrificed. **Patients or Participants:** We had a patient with severe adenomyosis in uterus, left ovary 6.9 cm sized endometrial cyst, and severe right hydronephrosis. Right kidney turned out to be non-functioning due to deep infiltrating endometriosis. **Interventions:** Before the hysterectomy starts, the tip of a 6-F ureteral catheter was inserted into the Lt. ureteral orifice. We confirmed the position of ureteral catheter by C-arm x-ray imaging. 25mg of indocyanine green was dissolved in 10mL of normal saline and injected through the catheter. **Measurements and Main Results:** Ureter fluoresced green with da Vinci Xi Firefly fluorescence imaging. Visualizing ureter's pathway prevented potential ureteral injury which could have led to vicious subsequences. **Conclusion:** Patients with endometriosis are expected to have severe pelvic adhesion and it increases the risk of ureteral injury. Intraoperative localization using near-infrared fluorescence imaging with indocyanine green (ICG) is sensitive and feasible. This method can be used safely in selected critical cases.

#### POLYCYSTIC OVARY SYNDROME PHENOTYPE D VERSUS FUNCTIONAL HYPOTHALAMIC AMENORRHEA WITH POLYCYSTIC OVARIAN MORPHOLOGY: A RETROSPECTIVE STUDY ABOUT A FREQUENT DIFFERENTIAL DIAGNOSIS

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**Problem statement:** The two most frequent causes of secondary amenorrhea are polycystic ovary syndrome (PCOS) and functional hypothalamic amenorrhea (FHA). It remains challenging to distinguish between FHA women with polycystic ovarian morphology (FHA-PCOM) and PCOS patients without hyperandrogenism (phenotype D, PCOS-D). Despite several studies showing differences in hormonal profile between these two groups, diagnostic uncertainties make the initial assignment to PCOS or FHA in studies more difficult. **Methods:** In this retrospective case-control study, 58 clearly defined FHA-PCOM patients were matched 1:1 for age and BMI with PCOS-D patients. Women were enrolled from January 2012 to April 2021 at the Clinical Division of Gynecologic Endocrinology and Reproductive Medicine of the Medical University of Vienna, Austria. Main outcome parameters were serum levels of anti-Müllerian hormone (AMH), total testosterone, androstenedione, sexual hormone binding globulin (SHBG), luteinizing hormone (LH), follicle-stimulating hormone (FSH) and estradiol. Optimized cut-off values for the prediction of FHA-PCOM were calculated by the Youden index. **Results:** In PCOS-D patients, significantly higher levels of LH, estradiol, testosterone, and a higher LH:FSH ratio as well as lower SHBG levels were found (p 0.05). Estradiol serum level 37.5 pg/mL (84.5%, 95%



confidence interval, CI: 72.6-92.6) showed the highest sensitivity, whereas a LH:FSH ratio 0.96 had the highest specificity (94.8, 95% CI: 85.6-98.9). A linear discriminant analysis including testosterone, SHBG and LH was able to correctly classify 87.9% of FHA-PCOM patients (bootstrap 95% CI: 80.2 - 94.0%). The formula  $(7.05 \times \text{testosterone ng/mL}) - (0.005 \times \text{SHBG nmol/L}) + (0.117 \times \text{LH mIU/mL}) - 2.463$  can be used as a reliable tool for this differential diagnosis (weighted sum 0: PCOS-D; weighted sum 0: FHA-PCOM). **Conclusion:** Clinical and serological differentiation between FHA-PCOM and PCOS-D can be challenging. This model including serological parameters helps to distinguish between FHA-PCOM and PCOS-D patients, especially in situations where the clinical profile is not obvious.

### CORRELATION BETWEEN TRANSVAGINAL SONOGRAPHY, HYSTEROSCOPIC AND HISTOPATHOLOGICAL FINDINGS IN PATIENTS WITH ABNORMAL UTERINE BLEEDING AT SOUTHERN PHILIPPINE MEDICAL CENTER

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**Problem Statement:** To determine the diagnostic accuracy of transvaginal sonography (TVS) and hysteroscopy procedures in our institution in obtaining an accurate diagnosis of the etiology of abnormal uterine bleeding by correlating it with histopathologic findings. **Methods:** This is a retrospective cross sectional study on patients with abnormal uterine bleeding (AUB) admitted at the Southern Philippine Medical Center (SPMC) with TVS performed at the SPMC Ultrasound Center for Women and had subsequent hysteroscopy performed at SPMC Center for Minimally Invasive Gynecologic Surgery from January 2018 to December 2019. Using a data collection form, the demographic and clinical profile, TVS findings, hysteroscopic findings and histopathologic findings of the patients were collated, reviewed and analyzed. **Results:** A total of 63 patients were recruited. The mean age was 32 years. More than half of the patients were obese (54%), normal Body Mass Index (30%), and overweight (16%). 47% of the patients graduated in high school. 37 percent of the multigravid patients were gravida 1 to 2 while 36% were nulliparous. The most common abnormality identified by the TVS was thickened endometrium (44%), endometrial polyp (37%), submucous myoma (10%) and endocervical polyp (5%). In hysteroscopy, the most common abnormal findings were endometrial polyp (36%), endometrial hyperplasia (34%), submucous myoma (14%), malignancy (6%) and endocervical polyp (6%). All these different pathologies were confirmed by histopathologic examination with findings of endometrial polyp at 40%, endometrial hyperplasia (20%), leiomyoma (9%), malignancy (8%) and endocervical polyp (6%). The study shows that 65% of patients who had abnormalities detected by TVS correlated with the hysteroscopic findings and confirmed by the histopathologic examination giving a sensitivity of 69% and specificity of 85% in determining the cause of AUB. The positive predictive value (PPV) was 59% and the negative predictive value was 90%. **Conclusion:** The diagnostic accuracy of TVS and hysteroscopy in this institution in determining the etiology of AUB is good but not comparable with current studies. TVS is a practical approach as an initial evaluation of the uterine cavity to detect intrauterine abnormalities. Hysteroscopy is the best option in assessing abnormal uterine bleeding by direct visualization and samples for histopathology can be obtained.

### PELVIC INFLAMMATORY DISEASE CAUSED BY NON SEXUALLY ACQUIRED PATHOGENS. A CASE REPORT

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We report a case of a 48-year-old woman, with no medical history of interest. She was febrile 40.2°C with regular general state, tachycardia, and hypotension. The abdomen was painful on palpation of hypogastrium without signs of peritoneal irritation. Given the suspicion of sepsis of abdominal origin, a CT was requested, objectifying an image at the annexal level that could be a tube-ovarian abscess with perihepatic fluid that could correspond to Fitz Hugh Curtis Syndrome. Under the diagnosis of PID grade IV in a hemodynamically unstable patient, a bilateral salpingectomy with medium laparotomy was practised. Antibiotic therapy with meropenem and linezolid was also started. Both blood and abscess cultures were positive for multisensitive E. Coli, so antibiotic therapy was changed to ciprofloxacin and metronidazole. Vaginal culture was positive for G. vaginalis. No sexually transmitted pathogens were detected. In most of the cases, PID is caused by sexually transmission pathogens such as Neisseria gonorrhoeae and Chlamydia Trachomatis. Nevertheless, there are cases caused by enteric pathogens like E. coli as shown in this case. With this case report we want to remind the need to consider non sexually acquired pathogens as the cause of PID, in women with compatible symptoms, even if they deny having had sexual intercourse.

### TWO-STEP HYSTEROSCOPIC MANAGEMENT IN RETAINED PLACENTAL TISSUE AFTER VAGINAL DELIVERY. A CASE REPORT

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**Introduction:** Postpartum retained products of conception (RPOC) are identified in approximately 1% of deliveries. Third stage labor complications are established as a risk factor for RPOC: abnormal placenta adherence, manual removal of placenta, early postpartum hemorrhage. While traditional surgical treatment for RPOC has been blind dilatation and curettage, recent studies have raised hysteroscopic morcellation as an effective and less damaging technique, showing lower risks of uterine perforation and intrauterine adhesions and increased rates of complete removal of placenta remnants. **Methods:** We report a case of hysteroscopic management of recurrence of retained placental tissue (RPT) after delivery. Patient is a 36-year-old woman with history of a secondary postpartum hemorrhage one week after her first eutocic delivery. She was diagnosed with intense vascularized placental remnants; hence a suction curettage was performed. Surgery had to be interrupted due to a hemorrhage estimated in 800 mL which needed a Bakri balloon insertion and two blood units transfusion. Two years later she was admitted for her second delivery; gestational control was normal. After an eutocic birth, manual placenta delivery was required to remove retained cotyledon, which caused moderate anemia. She was discharged with normal immediate puerperium. **Results:** She presented to our facility ten days later with moderate metrorrhagia. Once again, she was diagnosed with RPT. This time, as she was clinically stable, hysteroscopic management was decided to avoid



recurrence of major complications caused by blind curettage. Strict imaging, analytic, and clinical control was scheduled in hospital and ambulatory facilities. First hysteroscopy showed two thirds of the uterine cavity occupied by RPT, from which 60% could be morcellated and sent to pathology. Control ultrasound showed pseudo polyp-like remaining products and analytic control had no infection signs. Second-look hysteroscopy was performed four months later, and inactive products were resected. Control ultrasound was correct. **CONCLUSION:** Hysteroscopy enables a selective removal of RPOC under direct vision; hence it stands as a safe procedure to reduce major complications and preserve fertility. Since our patient was at high risk of recurrent bleeding if repeated curettage and had uncertain will for future pregnancies, she was performed a hysteroscopy with a successful outcome.

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### **ROBOT ASSISTED TOTAL LAPAROSCOPIC HYSTERECTOMY WITH BILATERAL UTERINE ARTERY DOUBLE LIGATION AT THE ISTHMIC LEVEL OF UTERUS**

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During Robot assisted total laparoscopic hysterectomy, there are many methods to deal with the uterine artery. We would like to introduce the effectiveness of selective uterine artery double ligation at the isthmic level of the uterus using ligature and loop in Robot assisted total laparoscopic hysterectomy. After complete skeletonization of the uterine vessels, with the grasping vessel by robot arm taking hold of the uterine vessels just below the colpotomizer, and vessels was tightened up by PDS needle. Needle was passed beneath the vessels. The knots at the upper part of the colpotomizer were made and tightened over three times. The uterine vessels above the tie at the isthmic level right adjacent to the uterus were electrocoagulated by bipolar coagulation to prevent backflow from the uterus. The ligature of the uterine vessels was cut 1~2cm above the tie and the uterus was resected. After the uterus was resected robot assisted laparoscopically, each side of the pedicles of the uterine vessels was rebound by using Endoloop (Ethicon, Piscataway, NJ, USA), which was readily knotted to be applied and locked on a stump of vessels. **In conclusion**, selective uterine artery double ligation in TLH appears to be safer, with lower blood loss during operation. Also, it did not take a longer time for operation. Selective uterine artery double ligation at the isthmic level of the uterus inside leaves of broad ligaments was a feasible and secure method to manage uterine vessels for both patients and surgeons.

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## E-POSTER ABSTRACTS

### ART/IVF

#### DIRECT IMPLEMENTATION OF HISTEROSALPINGO-FOAM SONOGRAPHY IN A TERTIARY REFERRAL HOSPITAL IN SPAIN WITH THE ACTUAL EVIDENCE, IS IT NECESSARY TO COMPARE THE PROCEDURE WITH RADIOGRAPHIC HISTEROSALPINGOGRAPHY?

Magdalena Abad Gran<sup>1</sup>, Magdalena Abad Gran<sup>1</sup>, Alicia Vazquez Sarandeses<sup>1</sup>, Maria Carrera Roig<sup>1</sup>, Beatriz Risco Montemayor<sup>1</sup>, Elisa Escalante Bermdez<sup>1</sup>, Pilar Moreno Fernandez<sup>1</sup>, Nerea Ruiz Azqueta<sup>1</sup>, Guillermo Fernandez Lizana<sup>1</sup>, Laura Lopez Marin<sup>1</sup>, Marta Ciauriz Gortari<sup>1</sup>, Gloria Gonzalez Tristante<sup>1</sup>, Laura De la Fuente Bitaine<sup>1</sup>

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**Problem statement:** The evaluation of fallopian tubes in a fertility assessment is essential. Tube permeability determines the type of assisted reproductive treatment selected infertile women will undergo: an artificial insemination or an in vitro fertilization. Hysterosalpingo-foam sonography (HyFoSy) is replacing radiographic hysterosalpingography in tubal patency testing. Evidence shows that HyFoSy is a precise, feasible, well-tolerated, inexpensive and safe technique in confirming tubal blockage. Nevertheless, it is still being compared with the conventional tubal diagnostics. Drawbacks are it is an observer-dependent procedure and its requirement of a learning curve. **Methods:** A cross-sectional retrospective study in a Spanish tertiary referral hospital from June 2019 until March 2022 was performed to evaluate the implementation of HyFoSy as part of the fertility workup of 85 infertile women aged 18-40 years undergoing assisted reproduction. Exclusion criteria were allergy to the contrast agent, known tubal obstruction, active pelvic infection, pregnancy, abnormal vaginal bleeding and altered seminogram. Azitromycin 1g the night and a nonsteroidal anti-inflammatory drug 30 minutes prior testing were administered. The test was performed after written informed consent by trained gynecologists, in proliferative initial phase and with a full bladder. An embryo transfer catheter and 2-10 ml of foam contrast were used. Tubal permeability, cervical canalization, and post-procedure complications were collected. Patients reported experienced pain during the test with the visual analog scale (VAS) score. Data were introduced into a program database. **Results:** The median patient age was 33 years. Due to failure of cervical canalization, in only 3 of 85 cases (3,5%) the procedure was stopped. Bilateral tubal patency was diagnosed in 63/82 (76%) patients, while unilateral tubal permeability was observed in 7/82 (8,5%) women. 14,6% (12/82) patients had bilateral tubal obstruction. The median VAS score revealed mild pain perception (3,21) during HyFoSy examination. 1 complication during the procedure a vasovagal syncope (1,2%) was assisted. No pelvic inflammatory disease nor severe pain (VAS $\geq$  7) were documented. Surprisingly, 1 spontaneous pregnancy (1/82) after the technique was reported. **Conclusion:** HyFoSy is a practical tool in tubal diagnostics and can be directly implemented in referral hospitals with trained gynecologists in an assisted reproductive medicine unit.

#### LIVE BIRTH RATE COMPARISON BETWEEN SINGLE VS. DOUBLE OVARY WOMEN IN ASSISTED REPRODUCTIVE TECHNOLOGIES

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**Problem Statement:** One of the major hardships faced by married couples is the inability to conceive a child. This issue is becoming more prevalent given the increasing rate of infertility worldwide. Assisted reproductive technology (ART) has brought hope to infertile couples. We aim to estimate the live birth rate (LBR) and pregnancy rate in women with one ovary compared with those with two ovaries. **Methods:** This is a retrospective cohort study of women who underwent ART at King Abdulaziz Medical City (Jan 2000 - Dec 2018). Five cycles of patient data were collected. The LBR (both conditional and cumulative) was compared between women with one and two ovaries. **Results:** The final analysis included 403 women. Of these, 9% (n = 37) had one ovary. The majority (59%, n = 233) had primary infertility. A male-associated factor accounted for 52% (n = 208) of the infertility cases. The total number of live births was 164; and the overall LBR from five cycles was estimated as 9%, 16%, 18%, 18%, and 15%, respectively. In the double ovary group, the highest rate was in the fourth cycle [19% (12-26)], while in the single ovary group peaked in the third cycle [27% (9-46)]. Pregnancy was at its highest in the first cycle, accounting for 88 pregnancies. **Conclusion:** The outcomes of ART varied between study groups. LBR was lower in single ovary women. The average of five cycles in the single and double ovary groups was 13% and 15%, respectively. Nevertheless, there was no significant difference in LBR between single or double ovary women.

**Conflict of Interest:** We declare no conflict of interest in any kind or form.

#### THE IMPACT OF CHRONIC ENDOMETRITIS ON INFERTILITY, DOES TREATMENT INCREASE IVF SUCCESS RATES?

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**Problem Statement:** Chronic Endometritis is a serious condition that affects women's fertility and ability to conceive a child. Here, we aim to assess the relationship between infertility and CE with taking into account the success of IVF trials. **Methods:** A case-control study included women suffering from Chronic Endometritis (CE) and infertility. The study was conducted in the IVF unit in King Abdulaziz Medical City, Riyadh, SA (Jan 2016-Dec 2020). Patients were followed for two cycles pre- and post- treatment. Success Rates were calculated based on special formulas (LBR, PR, and IR). **Results:** A total of 148 patients (CE=73 vs. Non-CE=75). The mean age was (CE=37 $\pm$ 4.73, Non-CE=36 $\pm$ 4.1). Chronic endometritis patients had the longest infertility duration collected for 72 months. Majority of CE patients presented



with infertility 70(96%). Doxycycline was given for 44(60%) of the patients while the rest were given Metronidazole. Pregnancy numbers increased from 3 to 15 after treatment.

**Conclusion:** Conclusion In conclusion, Chronic Endometritis affects female infertility, and its management leads to higher pregnancy and live birth rates. We recommend a detailed and comprehensive study tackling the risk factors and efficacy of CE treatment upon fertility and ART.

**Conflict of Interest:** We declare no conflict of interest.

#### ADDING WEEKLY INTRAMUSCULAR PROGESTERONE TO A TWICE DAILY VAGINAL PROGESTERONE CAPSULE FOR LUTEAL PHASE SUPPORT IN IVF/ICSI CYCLES RESULTS IN SIMILAR LIVE BIRTH RATES

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**Problem statement:** Luteal phase support following ovarian super-stimulation and oocyte retrieval had been the focus of many researches since the beginning of ART. Progesterone is critical in achieving endometrial/embryo synchrony and maintaining the early pregnancy until the placenta becomes fully developed, around the tenth or twelfth weeks of pregnancy. During in vitro fertilization (IVF), the women take either progesterone, human chorionic gonadotropin (hCG) or GnRH agonist medication for luteal support; progesterone is the most commonly used. There is no consensus as to which is the best luteal phase support regimen. Progesterone is typically given from the day of oocyte retrieval until the tenth or twelfth week of pregnancy, each route of administration has different pharmacokinetics, potency and adverse effects. The objective of this study was to compare live birth rates (LBR), implantation rates (IR) and clinical pregnancy rates (CPR) after IVF/ICSI cycles in patients receiving either vaginal progesterone alone or vaginal progesterone along with intramuscular (IMP) progesterone. Our objective was to compare pregnancy outcomes in patients undergoing artificial reproductive treatment (ART) and fresh embryo transfer (ET) who received twice-daily vaginal progesterone capsule (Cyclogest) alone versus twice daily vaginal progesterone capsule (Cyclogest) plus weekly intramuscular Hydroxyprogesterone Capronate (Proluton depot) for luteal phase support. **Methods:** A retrospective cohort study that included 1162 patients who completed fresh ART/ET cycle from January 2015 to April 2018. Vaginal Cyclogest 400 mg twice daily was given to 985 patients following oocytes retrieval; whereas 177 patients received weekly intramuscular Proluton depot 250 mg in addition to twice-daily Cyclogest. The IRB approved the study (18-530). **Results:** There was no difference between the twice daily vaginal progesterone and the addition of weekly intramuscular progesterone injections to the twice-daily vaginal progesterone regarding a positive pregnancy test (40.5% and 46.9%, respectively,  $p=0.112$ ). There was no statistical difference in live birth rates between the groups (24% for group one, 26% for group two,  $p=0.582$ ). **Conclusion:** The administration of weekly intramuscular progesterone in addition to twice-daily vaginal progesterone capsule for luteal phase support post ART cycle does not result in higher live birth rate.

#### WILLINGNESS OF PATIENTS WITH INFERTILITY ON CONTINUING WITH THEIR IVF TREATMENT DURING THE COVID-19 PANDEMIC

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**Problem statement:** The COVID-19 pandemic represented a challenge for the global healthcare community in 2019. Clinical and public health guidance made efforts to decrease its spread using different strategies including recommendations to limit healthcare provision to critical and emergency cases only and delay selective care. Since infertility is not classified as a serious medical condition, all procedures related to its treatment had been temporarily postponed to reduce the risk of exposure to COVID -19. In assessing the psychological impact of the COVID -19 pandemic on infertility patients, coronavirus was the third most common stressor among respondents in the early phase of the COVID -19 pandemic. The objective of this study assess the willingness of patients with infertility on continuing with their IVF treatment during the COVID-19 pandemic. **Methods:** This cross-sectional survey was conducted in the reproductive, endocrine, and infertility medicine department, King Fahad Medical City Arabia. Patients that were planned to undergo IVF treatment at REIMD were contacted and asked about whether they would like to start IVF treatment during the COVID-19 pandemic from August 2020 to August 2021. Data was analyzed using SPSS version 24. Statistics obtained as means and standard deviations from continuous variables correlated with chisquare test and results were considered significant at  $P \leq 0.05$ . **Results:** Of the 400 participants, 245 (61.25%) were between the ages of 30- 39 years. About 42.75% ( $n=171$ ) of patients had 6-10 years of infertility, and 18% ( $n=72$ ) had at least one pregnancy but no living children. While 64.7% ( $n=259$ ) of the participants responded from the first call, 83% ( $n=332$ ) agreed to continue their treatment. Of those, 13% ( $n=43$ ) preferred booking appointments as soon as possible, 29.8% ( $n=99$ ) preferred booking within three months, while 57.2% ( $n=190$ ) chose to book after three months. From our sample, 86.8% ( $n=59$ ) were afraid to contract the virus and the choice to delay the IVF treatment correlated with the patient age ( $P 0.001$ ) and duration of infertility ( $P=0.007$ ). **Conclusion:** The COVID-19 pandemic affected courses of IVF treatment, and many patients were afraid to be infected. However, most patients preferred to resume treatment despite possible risks and uncertainties.

Nothing to disclose.

#### BLASTOCYST FORMATION USING DONOR OOCYTES: ASSOCIATION WITH SPERM MOTILITY

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**Problem statement:** Do sperm affect blastocyst formation? Blastocyst formation is positively associated with sperm motility. Sperm parameters (typically parameters of the semen analysis) have been associated with the ability of sperm to



fertilize oocytes (without ICSI). However, the role of sperm in embryo development beyond fertilization is seldom considered or demonstrated. **Methods:** Donor oocyte IVF cases at our center between 1/1/2019 and 12/31/2021 were retrospectively examined for associations between blastocyst formation and sperm parameters, using multivariable regression analysis. The blastocyst formation rate (BFR) per 2 PN oocyte was examined for 276 IVF/ICSI cases using donor oocytes. Oocyte donors and male partners ranged in age from 18 - 41 years and from 23 - 69 years, respectively. We examined the parameters of the semen specimen used for IVF/ICSI (volume, count, motility, strict morphology, period of abstinence). **Results:** After adjustment for oocyte donor age and date of retrieval, BFR was positively associated with sperm motility. With increased motility between 37% and 78% (mean motility +/- 1 standard deviation) BFR increased from 0.43 to 0.56. BFR was not associated with male partner age, semen volume, sperm count, and strict morphology, or the use of frozen sperm or frozen donor sperm. No association with period of abstinence was found in a limited subset of the data (132 cases) for which this parameter was available. **Conclusion:** BFR was associated with sperm motility. This observation was probably sensitized by the use of donor oocytes to minimize the effects of female factors and by examination of BFR per 2PN oocyte to minimize the effect of sperm parameters on fertilization. **Limitations, reasons for caution:** The retrospective nature of this study limits our ability to demonstrate a strong causal relationship. The lack of more data on period of abstinence may limit our ability to detect this parameters association with BFR in this study. **Wider implications of the findings:** Although this is preliminary, we believe that sperm may contribute to embryonic development, possibly through an association of sperm metabolic activity with subsequent embryo development.

**Study funding/competing interest(s):** No conflict of interest

### VALIDATION OF “UNIVERSAL WARMING” COMPARING FOUR DIFFERENT VITRIFICATION KITS THAWED WITH A UNIQUE COMMERCIAL WARMING KIT

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**Problem statement:** It is common to transport oocytes or embryos from one Assisted Reproduction (AR) center to another because the patients decide to follow their treatment with another AR team. Each vitrification kit brand recommends the use of its own thawing kit and this could be a problem for the recipient IVF laboratory, if they don't routinely use the same vitrification and warming media in which gametes or embryos were cryopreserved in the previous center. The aim of this study was to vitrify mice zygotes with different vitrification kits: Kitazato (Kitazato) used as a control group; SAGE Vitrification Media Kit (CooperSurgical); Vit Kit – Freeze NX (FUJIFILM Irvine Scientific) and RapidVit™ oocyte (VITROLIFE) and validate if all these kits were suitable with Kitazato thawing kit protocol. **Methods:** In each group, 50 mice zygotes were vitrified following each vitrification protocol designed by each brand. The composition of the vitrification media and suggested temperature of use was the following.

	CPA	SAGE	VITROLIFE	IRVINE NX	KITAZATO
Permeable	DMSO	x		x	x
	EG	x	x	x	x
	Propanediol		x		
Non-Permeable	Sucrose	x	x	x	
	Trehalose				x
ATB	Gentamicine	x	x	x	x
T (°C)		20-25	37	20-25	20-25

*Cryoprotectant (CPA); Antibiotic (ATB).*

All the samples were thawed following standard warming Kitazato protocol and cultured with the same single step media until D+5 of development. Survival and blastocyst rates were registered.

**Results:**

Vitrification Media	Survival rate (SR)	SR (Published by each brand)	Blastocyst rate (BR)
Kitazato vitrification Kit*	100%	94-95%	98%
SAGE™ Vitrification Kit	100%	94%	85%
Vit Kit - Freeze NX Irvine	90%	98.5%	88%
RapidVit™	94%	92-95%	83%

\*Control group.

No statistical differences in SR or BR were found between groups. **Conclusions:** The survival rates in all groups were similar to the published by each brand, even higher in most cases. The blastocyst rates reached were higher than 80% in all the groups, which is the criteria stipulated by the FDA (≥80% embryos developed to expanded blastocyst at 96 hours). Kitazato thawing protocol is suitable with all the different vitrification protocols and media. The differences observed between the control group and the others could be due to the variations of cryoprotectants found differently in every brand.

### THE YOUNG GENERATION AND (IN)FERTILITY: DOES THE INFORMATION PROVIDED BY ASSISTED REPRODUCTION CLINICS CORRESPOND WITH THE EXPECTATIONS AND NEEDS OF CITIZENS?

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**Problem statement:** Infertility is considered a global problem that affects around 186 million people worldwide. However, there are no existing studies surrounding the opinions and concerns of the public, and what they believe are their needs in respect to assisted reproductive technology (ART). There is currently a gap in empirical data in populations that are under-documented in scientific literature concerning public representation and knowledge of ART. **Methods:** A qualitative study was carried out in eight European countries: Belgium, Switzerland, Italy, Spain and Macedonia, Albania, Slovenia, and Kosovo. 98 semi-structured interviews were performed with individuals between 18 and 30 representing different





sexual orientations, religions, and economic backgrounds to provide their opinion concerning infertility and ART providers. In addition, we explored the websites of 38 ART clinics. All information was collected in vernacular language and translated into English, before thematic analysis was performed. **Results:** Interviews have shown that young people have very little knowledge of infertility and ART in general, but they would use them in the future if necessary. The main concerns were the duration and side effects (mental health) of therapy, prices, and the transparency of information provided by assisted reproduction clinics. Mainly there were concerns about the potential commercial profit motive of ART clinics. Furthermore, the information supplied by ART clinics primarily consisted of long technical texts that were difficult for the general public to understand. Some clinics even normalised assisted reproduction as a form of conception. Most clinics provided detailed information regarding the characteristics of the people permitted to access fertility treatment. The information provided about costs, risks and success rates was often unclear or missing. **Conclusion:** There is room for improving the ART clinics' information to meet society's expectations and concerns. Policy-makers have the opportunity to contribute to this alignment by regulating ART and promoting awareness-raising campaigns. Educating the young population about their reproductive health is essential for informed decision-making about their future parenthood.

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*We have no conflicts of interest to disclose.*

#### REPRODUCTIVE AND PERINATAL OUTCOMES IN WOMEN $\geq$ 40 YEARS

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**Problem statement:** Currently, women tend to delay maternity due to different causes, like the availability of more effective contraceptive options, higher educational level and professional opportunities. But this leads to greater difficulty in becoming pregnant as the woman's age increases. The aim of this study is to analyze the characteristics of reproductive techniques (ART) and perinatal outcomes in women aged 40 years or older. **Methods:** A retrospective observational study was designed for patients aged 40 years or older who underwent IVF (with their own oocytes) at the Hospital Virgen de las Nieves between 2010 and 2021, including 673 women. Descriptive statistics (means-standard deviations-range frequencies and percentages) were used for quantitative and categorical variables, respectively. **Results:** The mean age was  $40.44 \pm 0.72$ . There were a total of 12.33% cancelled cycles, the most frequent cause being low response to the cycle. The mean number of days of stimulation was  $11.34 \pm 1.93$ . If we analyze the gestations obtained, 16.94% were obtained by cycle, 19.32% by puncture and 27.74% by transfer. Twins accounted for 12.28% of the pregnancies. Of the pregnancies, 42.98% become miscarriage. As for the newborn rates, they were 10.4% per cycle, 11.97% by puncture and 17.03% by transfer. In the perinatal results, the route of delivery was 38.6% cesarean section, 40.35% vaginal deliveries and 21.05% instrumental vaginal deliveries. The Apgar of the newborns had a mean of  $8.53 \pm 1.26$  at one minute and  $9.30 \pm 0.78$  at 5 minutes. Mean newborn weight was  $2878 \pm 509$ . The mean arterial pH was 7.25 and 7.11 for venous pH. **Conclusion:** ART in women aged 40 years or older with their own oocytes offers worse results due to a high

rate of cancellation due to hyporesponsiveness and an increase in the rate of miscarriage. Perinatal outcomes are similar to the rest, highlighting a high percentage of cesarean section that may be due to the increased rate of twins.

#### DOES FEMALE AGE INFLUENCE INTRAUTERINE INSEMINATION OUTCOMES?

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**Problem statement:** Data regarding the IUI success for women at advanced reproductive age is lacking. Intrauterine insemination (IUI) is noninvasive, easy to perform and less expensive than other ART techniques. The factors that influence the decision to perform IUI include the couple's diagnosis and female age. The aim of this study was to evaluate the association between women's age and clinical pregnancy rate. **Methods:** We designed a retrospective study of the IUI treatment cycles performed in a tertiary hospital, between 2011 and 2022, by revising the database of all patients submitted to IUI. Three women's age groups were defined: 35 years (group 1), 35-39 years (group 2) and 40-42 years (group 3). Primary outcome was clinical pregnancy rate (CPR) per cycle of IUI.

Clinical pregnancy was defined as the presence of a gestational sac with an embryo with heartbeat at ultrasound evaluation at 6-7 weeks. **Inclusion criteria:** use of own couple gametes, bilateral tubal patency, infertility 3 years, semen analysis with total concentration after swim-up  $1 \times 10^6$ . IUI were performed in a stimulated cycle with gonadotropins and ultrasound monitoring. hCG trigger was performed when 1-3 follicles  $\geq 16$  mm. Chi-squared, Fisher's exact test and logistic regression were used for statistical analysis and statistical significance was considered if  $p < 0.05$ . **Results:** We included 2256 cycles of IUI: 1,002 in group 1, 918 in group 2 and 336 in group 3. Global CPR was 12.3%. There was a statistically significant difference in CPR between group 3 and 1 (8% vs 13%,  $p = 0.01$ ) and between group 3 and 2 (8% vs 12.9%,  $p = 0.02$ ). There was no difference in the CPR between group 1 and 2.

CPR was higher when there were 2-3 vs only 1 follicle  $\geq 16$  mm on the trigger day ( $p = 0.02$ ). Group 3 had a statistically significant lower PR compared with the other two groups, even after adjusting for the number of follicles ( $p = 0.01$ ).

**Conclusion:** These data suggest a negative impact of female age 40 years old and of a monofollicular response in the pregnancy rate after IUI treatment, challenging the selection criteria and the cycle stimulation protocol to be used for IUI.

#### FEASIBILITY, TOLERABILITY AND SAFETY OF THE HYFOSY IN THE STUDY OF TUBAL PATENCY

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**PROBLEM STATEMENT:** Permeability alteration of Fallopian tubes is the reason for infertility in the 25- 35% of cases. Until now, the Gold Standard test for its diagnosis had been laparoscopy plus chromopertubation, being relegated by the sonohysterosalpingography, and specifically the HyFoSy.



**OBJECTIVE:** To assess the efficiency, safety, and tolerability of the HyFoSy to establish this technique as the first stage of evaluation of tubal patency and to determine its possible therapeutic effect as this could produce a reduction in costs. **METHODS:** Descriptive, observational and retrospective study of cohorts with a coded database performed at a single tertiary centre of 214 patients. Age, sterility time, sterility factor, HyFoSy date, cervical cannulation, Pozzi clamp, type of catheter, occupation pattern, 3D ultrasound, permeable tubes, VAS (visual analogue scale), ART (assisted reproductive technique), LMP (date of last period), number of pregnancies, type of delivery, newborn sex, APGAR and pH were the variables analyzed. **RESULTS:** The most prevalent infertility factor in patients was the male factor. Most patients experienced mild pain during the test (89.3%). The patients presented values of 71.5%, 18.7% and 9.8% for bilateral patency, unilateral patency and bilateral occlusion; respectively. The pregnancy rate was 62.20%, and of them, 26.1% were spontaneous. The majority of all pregnancies (78.7%) ended up in vaginal delivery while 21.3% were delivered by cesarean section. **CONCLUSION:** HyFoSy seems to be a precise, safe and well-tolerated technique. It reduces the waiting time and could have a therapeutic effect on achieving pregnancy, especially in the first 6 months after the technic realization.

#### FERTILITY PRESERVATION IN PATIENTS WITH CANCER : HOW MANY ARE COMING BACK?

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**Problem statement:** In the last years, thanks to the improvement in the prognosis of cancer patients, a growing attention has been given to the fertility issues. There are a lot of international recommendations and guidelines about fertility preservation but it is important to analyze the efficacy of these programs. The goal of this study is to investigate the return rate and which factors are responsible for the non- return in cancer patient who underwent oocyte cryopreservation for oncological reasons. **Methods:** The database consists of 147 patients who underwent fertility programs between 2015-2022 in our centre. Data about returned patients were retrieved from internal registries. **Main results:** A low return rate was found. Young age at freezing was one of the main factors responsible for non return. **Conclusions:** A considerable proportion of cancer patients of childbearing age (approximately 50%) desire pregnancy at the time of cancer diagnosis. Scarcity of data is available on motherhood after cancer preservation. We should investigate the reasons why these patients don't come back to improve efficacy of fertility programmes and try to reduce their time to pregnancy.

#### PLATELET-RICH PLASMA TREATMENT RESULTING IN PREGNANCY: FIRST EXPERIENCE FROM AZERBAIJAN IN A CASE SERIES

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Numerous studies have been published since the beginning of the use of platelet-rich plasma (PRP) in medical practice showing promising results. PRP increases the synthesis of growth factors and cytokines, resulting in tissue regeneration and thus, has an anti-aging effect. In recent years, it has become an area of interest in reproductive medicine.

Nevertheless, there are still very few reports in the literature regarding the usage of PRP in women with infertility issues. This manuscript presents the first experience of PRP treatment from Azerbaijan in a case series of gynaecology patients. We included three women - a 41-year-old premenopausal patient, a 32-year-old patient with poor ovarian reserve, and a 36-year-old patient with poor oocyte quality. All three women had several failed in vitro fertilization (IVF) cycles and opted for PRP treatment without accepting oocyte donation. The premenopausal patient and the patient with early poor ovarian reserve had spontaneous pregnancies 2-3 months after the treatment, and lastly the patient with poor oocyte quality had a twin pregnancy on the first IVF attempt post-PRP injection. Although there were no notable changes in the hormonal profiles of all three patients, the outcomes were positive. In two patients, the pregnancies ended by cesarean section without any complications. The patient with poor oocyte quality had a cesarean section at 29 weeks of gestation due to premature ejaculation. Considering that the post-PRP treatment results may be spontaneous, randomized controlled trials are warranted to explore the potential for widespread application.

#### EFFECT ON OVULATION AND NATURAL PREGNANCY WHEN TREATED WITH ORIENTAL MEDICINE IN A LOW-RESPONSE GROUP WITH OVARIAN DYSFUNCTION

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**Problem statement:** Until now, the only way for a patient diagnosed with premature ovarian failure (POF) to become pregnant is by donating an egg. This study is based on the recovery of ovarian function through oriental medical treatment, it is meaningful to perform natural pregnancy with one's own egg, not a donated egg. The purpose of this study is to report the normal ovulation and natural pregnancy rate through oriental medical treatment to restore ovarian function.

**Methods:** This study was conducted with 80 POF patients who visited our hospital in 2021. Based on medical records issued by obstetrics and gynecology before and after treatment, reproductive hormone levels such as follicle stimulating hormone (FSH), luteinizing hormone (LH), estradiol (E2), anti-Mullerian Hormone (AMH) and the number of antral follicle & collected eggs on ultrasound were compared, and pregnancy was confirmed through human chorionic gonadotropin hormone (HCG) levels and ultrasound. At the time of admission, on the 3rd day of menstruation, patients with FSH 25 mIU/ml or higher were treated with herbal medicine for 1 to 12 months. **Results:** Of the 80 patients diagnosed with POF, 48 patients had normal ovulation by observing antral follicles using ultrasound, and 18 of them were spontaneously pregnant. Of the 48 patients with ovulation observed, the number of times that follicles were observed was 3 people 1 time, 7 people 2 times, 6 people 3 times, 10 people 4 times, 8 people 5 times, 6 people 6 times, 5 people 7 times, 2 people 8 times and 1 person was 10 times. AMH levels were elevated in patients with improved ovarian



function(P-value=0.0187180.05), the shorter the period of POF diagnosis, the higher the probability of recovery of ovarian function(P-value=0.0262850.05). **Conclusion:** In POF patients, oriental medicine treatment increased the pregnancy rate, decreased FSH level, and increased E2 level. Through oriental medical treatment, it was possible to confirm the restoration of ovarian function through changes in hormone levels such as FSH and E2, and the number of antral follicle.

**Disclosure of interests:** There are no conflicts of interest.

### EFFECT ON OVULATION AND FERTILIZATION WHEN TREATED WITH ORIENTAL MEDICINE IN A LOW-RESPONSE GROUP WITH OVARIAN DYSFUNCTION DURING IN VITRO FERTILIZATION (IVF)

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**Problem statement:** Until now, the only way for a patient diagnosed with premature ovarian failure (POF) to become pregnant is by donating an egg. This study is based on the recovery of ovarian function through oriental medical treatment, it is meaningful to perform IVF with one's own egg, not a donated egg. The purpose of this study is to report the response rate, fertilization rate, and pregnancy rate to gonadotropin-releasing hormone (GNRH) among IVFs of hypoovulation-induced hyporesponsive groups through oriental medical treatment to restore ovarian function.

**Methods:** This study was conducted with 69 IVF patients who visited our hospital in 2021. Based on medical records issued by obstetrics and gynecology before and after treatment, reproductive hormone levels such as follicle stimulating hormone (FSH), luteinizing hormone(LH), estradiol(E2), anti-Mullerian Hormone(AMH) and the number of antral follicle & collected eggs on ultrasound were compared, and pregnancy was confirmed through human chorionic gonadotropin hormone(HCG) levels and ultrasound. At the time of admission, on the 3rd day of menstruation, patients with FSH 25 mlu/ml or higher were treated with herbal medicine for 1 to 12 months. **Results:** Of the 69 patients diagnosed with POF, out of 38 who were subjected to IVF one or more eggs collected, 22 were pregnant and 16 were non-pregnant. 31 had no follicles at all or since it did not grow more than 15mm, collection was impossible. At IVF, the response to GNRH (the number of oocytes collected) was high in patients with decreased FSH levels after treatment(P-value=0.0446190.05). AMH level was not significantly correlated with pregnancy rate, the shorter the period of diagnosis of POF, the higher the probability of recovery of ovarian function(P-value=0.0479550.05). **Conclusion:** In the recovery of ovarian function, oriental medicine treatment increased the pregnancy rate and increased the response rate and fertilization rate to GNRH during IVF. FSH levels decreased and E2 levels increased. Through oriental medical treatment, it was possible to confirm the restoration of ovarian function through changes in hormone levels such as FSH and E2, changes in the size of the ovaries through ultrasound, and changes in the number of eggs to be collected.

**Disclosure of interests:** There are no conflicts of interest.

### CLINICAL ANALYSIS OF INFERTILITY COUPLES USING NAPRO TECHNOLOGY IN KOREA

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**PROBLEM STATEMENT:** In 2020, the birthrate in Korea is 0.837 per childbearing woman. The average age of childbirth is also rising. Fertility problems caused by falling birth rates

and elderly pregnancies are becoming serious. The Napro pregnancy method is a natural pregnancy method that maximizes fertility by observing and recording the menstrual cycle by women themselves using a Creighton model, not an artificial procedure that violates ethics based on Catholic spirituality. In Korea, it was the only hospital in Yeouido St. Mary's Hospital and has treated 1,300 patients since 2016. I would like to summarize the clinical review of the napro pregnancy method in Korea. **METHODS:** From July 1, 2016, to April 21, 2022, we searched the napro charts of 1259 couples had visited the Napro Center of St. Mary's Hospital in Yeouido for pregnancy attempts, who educated about napro technology. The patient's propensity (birth date, husband's age, occupation, religion, number of pregnancies, underlying disease, gynecological history, number of months treated at the Napro center, pregnancy results after napro education, duration to pregnancy success, cause of infertility, and factors of pregnancy success were analyzed. Patients who had postoperative pregnancy, 40 years of age or older, male factors, AMH (anti-mullerian hormone) degradation, habitual miscarriage, and four or more experience in vitro fertilization were classified and analyzed as high-level pregnancy. **RESULTS:** Currently, 103 patients are in progress, 373 are not visiting the hospital, and 594 are pregnant or terminated because they have given up pregnancy. The cumulative pregnancy rate of 209 people by April is estimated to be 30.2% at the Napro Center. Among the cumulative number of pregnancies/ (more than 2 months + non-inpatient + number of pregnancies), 106 are high-level pregnancies and 146 are cumulative births. The average age of a woman who visited the Napro pregnancy center was 38, and the duration of the Napro technology was seven months. **CONCLUSION:** In 2017, the success rate of pregnancy per in vitro fertilization procedure in Korea was 30%. The success rate of pregnancy at the Napro Pregnancy Center is similar to that of domestic in vitro fertilization procedures at a low cost.

### CLINICAL EFFECTIVENESS OF ELECTIVE SINGLE VERSUS DOUBLE EMBRYO TRANSFER FOR PATIENTS WITH UNIQUE WINDOW OF IMPLANTATION

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**Problem statement:** Unique window of implantation is a condition when embryo nidation possible on the unusual time during menstruation cycle. Normally this period is detected on day 6th- 8th after LH pick. Women may face, and which is a common reason for RIF. Pinopodies are one of the marker of endometrium receptivity. Their expression is one of the most important condition of fertilization and implantation. There are different treatment methods which are practiced for women with RIF. **Methods:** Electron microscopy of the endometrium was used to determine the window of implantation. The mean age of participants was 37 (34; 42) years old. Endometrial biopsies were obtained precisely 6, 8 and 10 days after the initiation of progesterone. After defining the most convenient day for FET studied group was divided for two cohorts. First cohort (98 women) - patients whom eSET was done on the most convenient day. The second cohort (101 women) - the patients who had double embryo transfer day before and day after the most convenient day of progesterone administration. **Results:** There is not significant difference between clinical pregnancy rate (CPR) (60.0% versus 62%, p-Value: 0.75), live birth rate (LBR) per ET (46.0% versus 52%, p-Value: 0.47) and miscarriage rate (12.0% versus 6%, p-Value: 0.29) in elective embryo transfer (eSET) and double embryo transfer



groups.

Both treatment methods are equally effective and can be practiced in clinic. **Conclusion:** There is not statistically significant difference between outcomes in elective embryo transfer (eSET) and double embryo transfer groups of patients with unique WOI.

#### AUTOLOGOUS PLATELET-RICH PLASMA INFUSION AND GRANULOCYTE-COLONY STIMULATING FACTOR (G-CSF) TREATMENT IMPROVES PREGNANCY RATE IN WOMEN WITH THIN ENDOMETRIUM IN HETEROLOGOUS FERTILIZATION

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**Problem statement:** Endometrial thickness has been identified as a prognostic factor for pregnancy rate for patients who carry out an embryo transfer in heterologous fertilization. Despite advances in infertility treatment, repeated implant failure due to insufficient thickness of the endometrium continues as a challenging difficulty also in heterologous fertilization. The implantation of the embryo is influenced by many factors. Much effort has been made to improve implantation rate with different methods such as platelet rich plasma (PRP) treatment in patients with thin endometrium which has been shown to be effective in improving pregnancy rate. Another factor is the granulocyte colony stimulating factor (G-CSF) which contains endometrial cell receptors and may play a role in implantation. G-CSF is a hematopoietic specific cytokine produced by bone marrow cells, stromal cells, fibroblasts and macrophages. G-CSF increases phagocytosis and oxidative process which is necessary for implantation. Moreover GCSF appears to affect endometrial expression of genes critical for the implantation process, such as endometrial vascular remodeling, local immune modulation and cellular adhesions mechanisms. **Materials and methods:** In this study n.93 patients undergoing embryo transfer in heterologous fertilization and with the history of cycle cancellation due to thin endometrium were studied. Prp was prepared from autologous blood using Plasmolifting kit according to manufacturer's instructions. After controlling platelet degranulation at microscope, 1 cc of pure PRP was infused on the endometrium under transvaginal ultrasound guidance using Gynetics catheter. G-CSF micro-dose Guna was taken by patients in an oral dose of 20 drops x2 times a day from day 1 of the menstrual cycle until the time to determine serum levels of beta-HCG. **Results:** After PRP infusion and G-CSF somministration, the endometrium thickness in PRP group was significantly thicker than that in control group. Furthermore, treated group had lower cycle cancellation rate when compared to control group. The implantation rate and clinical pregnancy rate in treated group were significantly higher than those in control group. **Conclusion:** Treatment with G-CSF and PRP may increase chemical pregnancy and implantation rate in patients with recurrent implantation failure.

#### OVARIAN AND ENDOMETRIUM PLATELET-RICH PLASMA (PRP) THERAPY IN REPRODUCTIVE MEDICINE

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**Problem statement:** Platelet-rich plasma (PRP) contains high levels of various growth factors and cytokines, which play critical roles in different cellular and inter-cellular pathways. In this study we have applicated PRP to reproductive medicine

to overcome problem of patients with low ovarian reserve and patients who cannot obtain adequate endometrial thickness for successful embryo transfer. We evaluated effectiveness of ovarian drilling and PRP injection, in order to rejuvenate and reactivate ovaries with the ultimate goal of indicating a possible correlation between this mode of treatment and reproductive effect in women with diminished ovarian reserve as determined by one prior IVF cycle canceled for poor follicular recruitment response. PRP application in endometrium has also been associated with increased of thickness and progesterone receptor activity. Progesterone receptors are the main actors that help maintain a thick and healthy endometrial lining, which in turn, helps with embryo implantation. **Methods:** We have started offering ovarian and endometrium PRP applications for 157 patients (32 and 47 years old) with: IVF failures, poor oocyte yield and Premature Ovarian Failure and patients who cannot obtain an adequate endometrial thickness. Ovarian infusion of PRP is programmed in 8-10 day of menstrual cycle while endometrial PRP application is administered 48-96 h before embryotransfer. PRP was prepared from autologous blood using Plasmalifting kit according to manufacturer's instructions. After controlling platelet degranulation at microscope, 1 cc of pure PRP was infused on ovaries using a thin needle under transvaginal ultrasound guidance and/or infused on the endometrium using Gynetics catheter. **Results:** To verify action of this treatment we attach importance to presence of dominant follicle in 8-10 day of next cycle; we also check the hormonal profile of FSH and E2 in 3rd day of menstrual cycle; after application of PDGF, the endometrial thickness was satisfactory in all patients (8 mm), with endometrial three-layer pattern. Results of PRP treatment in ovary and endometrium are promising because 38% of these patients with previous IVF failures achieved pregnancy. **Conclusion:** PRP treatments seems to have important regenerative function of reproductive system. These results translates into several pregnancies, registered in all women with previous IVF failures.

#### COULD WE CORRELATE SOME POOR EMBRYO'S QUALITY MORPHOLOGICAL ANOMALIES WITH THE IMPLANTATION RATE IN PATIENTS UNDERGOING IVF TREATMENT?

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**PROBLEM STATEMENT:** Given the high percentage of patients who have only poor quality embryos, we wonder if there is any relationship between different embryo morphotypes and implantation rate which allow us to give the patient a better pregnancy chance. **METHODS:** Retrospective descriptive study of poor quality embryos transferred in the Human Reproduction Unit of Hospital Universitario 12 de Octubre, Madrid, Spain in a public IVF program from November 2019 to March 2022. Embryo culture was performed using a time-lapse system and classification of embryos following the Asebir criteria. Embryo transfers were performed on day 2 or 3 of culture. Confirmation of pregnancy was made by measuring the hormone bHCG in serum 12-15 days post transfer and the presence of a gestational sac by ultrasound. A total of 951 embryos were analyzed, out of which 286 were of poor quality (group D according to Asebir criteria), which represents 30% of the embryos studied. It has been analyzed whether maternal age influences establishing 2 age groups ( $\leq 35$  and  $> 35$ ) and the type of morphological characteristic establishing 3 groups: multinucleation (MN),



fragmentation (FR) and anomalies in the division rhythm (RD). The following reproductive parameters have been analyzed in both age groups: Implantation rate (IR), ectopic pregnancy rate (EPR), miscarriage rate (MR) and ongoing pregnancy rate (OPR). Analysis data was performed using Pearson's chi-squared test and P values at less than 0.05 are considered significant. **RESULTS:** No significant differences were found between the 2 age groups in any of the variables analyzed, neither IR, nor EPR, nor MR, nor OPR (table 1)

	Global (n=286)	≤ 35 (n=103)	>35 (n=183)
IR	12,58	13,59	12,02
EPR	3,6	7,1	0
MR	25,0	14,3	40,9
OPR	71,4	78,6	59,1

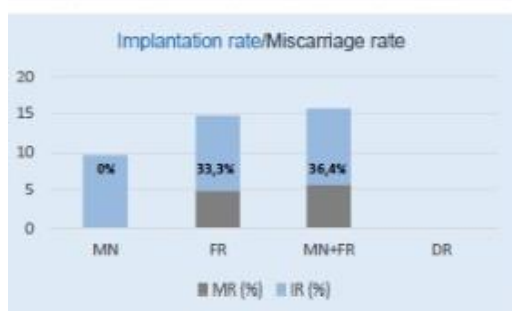


Table 1. A: Influence of maternal age in reproductive outcomes  
B: Implantation and miscarriage results

The implantation rate was analyzed in each group of anomalies: Group 1 (MN) 9.6%, Group 2 (FR) 14.7%, Group 3 (MN+FR) 15.7% and Group 4 (RD) 0%, not being significant (table 1). A lower implantation rate is observed in the MN group, although it is also the group with the lowest miscarriage rate. **CONCLUSIONS:** Having not found any statistically significant differences in the anomalies described in poor quality embryos in terms of implantation and miscarriage rates, the choice between poor quality embryos will continue to be the embryologist's criteria.

#### ASSISTED REPRODUCTIVE TECHNIQUES (ART) WITH POOR ENDOMETRIAL RESPONSE, POSSIBLE ETIOLOGIES

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**Problem statement:** A poor endometrial response can be a tough-to-solve problem in ART. As it can be caused by multiple etiologies, knowing the actual reason is especially important to provide the accurate treatment. **Methods:** Four different cases of not-responding endometrium during ART have been chosen and analysed as a sample of the heterogeneity of the problem.

#### Results:

##### Case 1

24 years old. Primary amenorrhea, normal hormone levels.  
- Ultrasonography: normal sized and shaped uterus, thin endometrium despite hormonal treatment. Normal ovaries.

- Hysteroscopy: hypoplastic uterine cavity. Biopsy: absence of endometrium.

- Magnetic Resonance Imaging (MRI): suspected absence of endometrial cavity.

**Diagnosis:** congenital absence of endometrium

**\*\*Platelet-rich plasma (PRP) was infused as adjuvant therapy: not endometrial response achieved.**

##### Case 2

37 years old. Primary ovarian insufficiency (POI) for 12 years, hormone replacement therapy since then.

- Ultrasonography: normal sized and shaped uterus, thin endometrium despite hormonal treatment. Atrophic ovaries.

- Hysteroscopy: atrophic looking endometrium. Biopsy: secretory endometrium

**Diagnosis:** not-responding endometrium related to long term POI

**\*\*PRP infusion has been suggested as adjuvant therapy, currently waiting for new IVF (in vitro fertilisation) cycle.**

##### Case 3

33 years old. History of puerperal curettage for retained trophoblastic tissue.

- Normal hormone levels.

- Ultrasonography: normal sized and shaped uterus, thin endometrium despite hormonal treatment. Normal ovaries.

- Hysteroscopy: irregular and hypoplastic cavity with synechiae. Proliferative looking endometrium. Adhesiolysis is performed.

**Diagnosis:** not-responding endometrium related to Asherman's syndrome.

**\*\*PRP infusion was used as adjuvant therapy, achieving an appropriate endometrial response and pregnancy.**

##### Case 4

34 years old. Not relevant medical history known.

- Normal hormone levels

- Ultrasonography: normal uterus and ovaries. Thin endometrium despite hormonal treatment.

- Hysteroscopy: hypoplastic cavity, inflammatory looking endometrium. Biopsy: tuberculosis granuloma.

**Diagnosis:** not-responding endometrium related to endometrial tuberculosis.

**\*\*Antituberculosis therapy followed by PRP adjuvant therapy were used: not endometrial response achieved.**

**Conclusion:** A poor endometrial response in ART can be related to different etiologies. Reaching an accurate diagnosis and providing the correct treatment can enable pregnancy. Intrauterine PRP infusion, despite being experimental, could be an option as adjuvant therapy for ART.

#### WOMEN WITHOUT MALE PARTNER: ACCESS TO ASSISTED REPRODUCTIVE TECHNIQUES THROUGH THE YEARS

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**Problem statement:** The number of women without a male partner who have undergone in vitro fertilization (IVF) has been considerably increased in the last 10 years. Here we analyse this increase and the results obtained in this group.

**Methods:** Descriptive study of the IVF cycles involving women without male partner that took place at our Hospital between 2011 and 2021. **Results:** During these 10 years, 255 cycles have been performed on 148 women, the average of oocytes obtained per cycle has been  $8.10 \pm 5.75$ , with  $6.42 \pm 4.8$  oocytes in metaphase II per cycle after an average



stimulation of  $11.6 \pm 2.1$  days long. 25 out of the 255 (9.8%) were cancelled, while 54 pregnancies were achieved via fresh embryo transfer (pregnancy rate: 21.2%; 9.25% multiple gestations, 30% abortions). Over the last 10 years, the number of women without a male partner who underwent IVF has shown an upward trend (except in 2020, possibly because of the SARS-CoV-2 pandemic and the uncertainty caused by it), increasing from 2-3 annual cycles in 2011-2012 to 44 cycles per year in 2019 and 2021. Regarding the results obtained per cycle and year, every time the number of cycles has been 15 (except in 2020), the average oocytes in metaphase II obtained per cycle has been 6-7, while the average number of transferable embryos per cycle (fresh embryo transferred + cryopreserved embryos) has been 2.5 (except in 2020 and 2021). **Conclusion:** Over the last 10 years, the access of women without a male partner to IVF with sperm from donor has increased by 20x. When the number of cycles performed has been 15, the results obtained have not changed. In 2020 there was a decrease in the number of women without a male partner who underwent IVF cycles, possibly due to the uncertainty caused by the SARS-CoV-2 pandemic.

#### EFFECT OF GROWTH HORMONE ON UTERINE RECEPTIVITY IN WOMEN WITH REPEATED IMPLANTATION FAILURE AND/OR RECURRENT PREGNANCY LOSS: A CASE SERIES

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**Problem statement:** Administration of growth hormone (GH) during endometrial preparation has been shown in several studies to improve success rates of embryo implantation. By the time, we don't know which are the mechanisms involved, but some studies relate the improvement of endometrial thickness in refractory endometrium. To assess the effect of this treatment, we studied if the administration can improve the chance of pregnancy and birth in women who experienced repeated implantation failure (RIF) and/or recurrent pregnancy loss (RPL) after transfer of good quality embryos. **Methods:** A total of 11 infertile women were enrolled in the study: All the women with a history of RIF, and 5 of them with 2 or more pregnancy losses. 9 women received egg donation and only 2 ICSI with own eggs and PGT-A. All women received Tesarik based GH protocol with daily subcutaneous injections of approximately 1 mg (3 IU) recombinant human GH (Saizen, Merck) during 10 consecutive days of endometrial proliferative phase, the last injection was administered 1 or 2 days before starting the treatment with progesterone. **Results:** The results show an increase in endometrial thickness of a mean of 2.04 mm compared to the previous cycle without GH in 7 women (63%). Of the 4 that did not experience this improvement, only 1 achieved an evolutionary gestation. 8 women achieved pregnancy (72.72%), of which 2 ended in abortion (25%) and 5 had a pregnancy with a normal evolution and a live newborn. Considering only euploid embryo transfers, thus eliminating the genetic factor, a pregnancy rate of 85.7% is reached after the administration of GH. **Conclusion:** Treatment during endometrial preparation with GH in women with previous failures may improve ongoing pregnancy rates. More randomized studies are needed to confirm the results and to be able to offer safe and effective treatments to these patients.

#### IN VITRO MADURATION OOCYTES COLLECTED UNDER MINIMAL STIMULATION PROTOCOL

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##### Problem statement:

One of the current challenges in assisted reproduction clinics is the in vitro oocyte maturation (IVM). This technique consists in the in vitro maturation of immature oocytes to obtain a higher number of eggs useful for reproductive cycles. Despite the different strategies employed, the maturation rates are under 30% of the total recovered oocytes. The present study aims to evaluate the maturation rates of donor oocytes under minimal stimulation protocols and to assess their quality.

**Methods:** Seven donors were included in the study, with prior informed consent. On the second day of menstruation, the stimulation started with 150 IU of rFSH for 3 days. On the third day of stimulation, follicle antral count was assessed. When the size of the follicles was between 8 and 9 mm, 2 ampoules of hCG were administered after 24 h. Egg retrieval was performed 36 h after hCG. The Cumulus-oocyte complexes (COCs) were cultured for 2 h in LAG medium (MEDicult IVM System) and then transferred to IVM culture medium. At 24 h post culture, oocytes were denuded, and oocyte maturation (first polar body extrusion) and oocyte quality were assessed by morphological methods. **Results:** 64 COCs were recovered from the 7 donors, all of which appeared immature, small size and with compact granulosa cells. After culture of the COCs, a total of 25 metaphase-II (MII), 16 metaphase-I (MI) and 21 vesicles germinal (VG) were obtained, giving a maturation rate of 39% of the immature oocytes recovered. Regarding the quality of the oocytes, the MII oocytes showed a normal size, cytoplasm, perivitelline space and zona pellucida. **Conclusion:** The present study shows that stimulation with low-dose gonadotropins allows obtaining immature and viable COCs for IVM, which mature at 24h of culture with a good morphological quality. This application could help patients undergoing oncological treatments who cannot be administered high doses of gonadotropins, as well as patients with a high number of immature eggs. A larger number of donors and COCs, as well as more strategies to study oocyte quality, will be performed to validate the results.

#### CHANGES IN DONATION PROGRAMS WITH THE USE OF FROZEN OOCYTES

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**Problem statement:** Over the years, assisted reproduction treatments have been increasing, especially egg donation. In oocyte donation programs, patients undergo a much simpler endometrial preparation cycle than in vitro fertilization cycles, since in this case the oocytes that we are going to be used are oocytes from anonymous donors. (heterologous). For many years, fresh oocyte donation has been the gold standard. In this type of donation, the endometrial preparation of the recipient takes place during egg donor hormone stimulation. Currently, more and more centers are encouraged to carry out donation programs with vitrified oocytes. This allows us to have a greater selection of donors, avoiding long waiting times and avoiding possible cancellations that may occur during donor stimulation. **Methods:** Retrospective and unicentric study. It has been included patients who underwent oocyte donor cycles from 2020 to 2022 at Ruber. 118 patients were



included. The aim of this study is to assess the percentage of cycles in which fresh oocytes have been used versus vitrified oocytes. **Results:** The results are shown in table 1.

	Fresh oocytes	Frozen oocytes
Cycles (%)	38,2 %	61,8 %
Mean number of donated oocytes	8,45	9,55
Transfer	15	47
Pregnancy rate	73,7% ns	70,2% ns

**Conclusion:** The use of frozen oocytes does not affect the donation program and it is easier to work with frozen oocytes because we have more chances in order to find the perfect match and easier to synchronize. There were no significant differences in pregnancy rates.

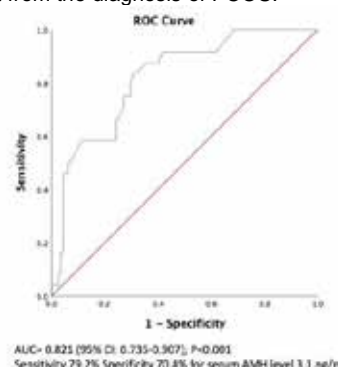
#### INCREASED SERUM ANTI-MÜLLERIAN HORMONE LEVEL IS AN INDEPENDENT PREDICTOR FOR PRETERM DELIVERY IN ASSISTED REPRODUCTIVE TECHNOLOGY PREGNANCIES

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**Problem Statement:** The reproductive dysfunction severity in polycystic ovary syndrome (PCOS) has a positive correlation with serum anti-müllerian hormone (AMH) levels. Debate on the impact of PCOS on pregnancy outcome continues. The objective of this study was to compare the pregnancy outcome in ART pregnancies of women with and without PCOS and to assess the independent impact of serum AMH levels on pregnancy outcome. **Methods:** In this single-center retrospective cohort study, ART cycles performed at a university hospital the infertility center were reviewed. The study group consisted of women with PCOS and the control group consisted of women without PCOS. The outcome of clinical pregnancies were assessed. The inclusion criteria were singleton pregnancy following intracytoplasmic sperm injection/embryo transfer (ICSI/ET) at the infertility center, primary infertility, and age between 20 and 40 years old. **Results:** A total of 92 (48.42%) patients with PCOS and 98 (51.58%) without PCOS who achieved clinical pregnancy following ICSI/ET were included. Patients with and without PCOS were comparable except for the rate of mild-moderate OHSS, serum AMH level, and hysteroscopic corrections for CUA (19.6% vs. 7.1%, respectively;  $P=0.017$ ). The miscarriage rate was significantly higher in patients with PCOS than in patients without PCOS (37% vs. 12.2%, respectively;  $P<0.001$ ). The term delivery rate (72.2% vs. 89.4%) and mean birth weight ( $3090\pm 613$  g vs.  $3218\pm 435$  g) were significantly lower in patients with PCOS. In addition, the overall rate of pregnancy complications was higher in PCOS patients (18.5% vs. 5.9%,  $P=0.025$ ). The mean serum AMH level was significantly higher in women with preterm delivery than women with term delivery ( $5.3\pm 2.7$  vs.  $2.5\pm 2.1$ ,  $P<0.001$ ). Multiple logistic regression analysis revealed that increasing serum AMH level had a significant impact on preterm delivery risk (OR: 1.503, 95% CI: 1.201-1.881,  $p<0.001$ ) after adjusting for age and BMI. The sensitivity and specificity of serum AMH level of 3.1 ng/ml calculated from the ROC curve were 79.2% and 70.4%, respectively (area under the curve: 0.821, 95% CI 0.735–0.907;  $p<0.001$ ) (Figure 1). **Conclusion:** Increasing AMH levels are significantly associated with ART pregnancy

complications, particularly with preterm delivery risk, independent from the diagnosis of PCOS.



#### EFFECT OF PRE-IMPLANTATION GENETIC SCREENING ON FROZEN EMBRYO TRANSFER SUCCESS RATES AT IVF BRIDGE FERTILITY CENTRE

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**Background:** Pre-implantation Genetic Screening (PGS) is a technique used to detect chromosomal abnormality of IVF embryo. PGS takes a biopsy cell(s) sample from embryos and evaluates or test for chromosomal abnormality. Embryos that test chromosomally normal (euploid) are then considered for embryo transfer into uterus.

#### COMPARISON OF RESULTS AND PREGNANCY OUTCOMES ON DAY 3 VERSUS DAY 5/6 EMBRYO TRANSFER. A RETROSPECTIVE STUDY

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**Purpose/Objective:** To compare the results and pregnancy outcomes of day 3 versus day 5/6 embryo transfer. **Method:** This was a retrospective study conducted at IVF Bridge Fertility Centre, in Malaysia. Data was collected and compared in two main groups – the first group received embryo transfers on day 3 and the second group had embryo transfer on day 5 or 6. Each group included 100 patients ranging from ages 28 to 47, who had ideally received frozen embryo transfers throughout the year of 2021. However, as the fertility centre gradually reduced its practice of day 3 embryo transfers, the data had to include patients from years 2018 to 2021 and 22 patients who had fresh embryo transfers on day 3 in order to reach a cohort size of 100 patients. **Results:** The results showed that a pregnancy rate of 25% (25 pregnancies in 100) was achieved in the patient group that received day 3 embryo transfers, whereas the group with day 5/6 embryo transfers had a pregnancy rate of 68% (68/100). Miscarriage rates were 4% in day 3 embryo transfers and 12% in day 5 or 6 embryo transfers. Biochemical pregnancy rates were 4% in both day 3 and day 5/6 embryo transfer groups. **Conclusion:** Pregnancy was more successful with day 5/6 embryo transfers than day 3 embryo transfers, as shown respectively by pregnancy rates of 68% and 25%. Interestingly, miscarriage rates were higher in patients receiving day 5/6 embryo transfers and biochemical pregnancy rates were the same in both groups.



**OUR CLINICAL EXPERIENCE WITH ONCOFERTILITY PATIENTS**

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**Problem statement:** The American Society of Clinical Oncology recommends starting to discuss the possibility of infertility as early as possible with cancer patients treated during their reproductive years. In this study, we aimed to publish the results of our case series of newly diagnosed cancer patients who applied for fertility preservation (FP).

**Methods:** This study was conducted with 28 newly diagnosed cancer patients who were referred to Ankara City Hospital IVF clinic for FP. A report was requested from the medical oncology department containing the patient's diagnosis, life expectancy, and approving the suitability of controlled ovarian hyperstimulation (COH). COH was applied to 21 patients for FP. A total of seven patients could not undergo COH because three patients and their parents did not accept treatment, one patient's medical condition was not suitable for treatment, one patient had a low ovarian reserve and one patient had elevated liver enzymes. Antagonist protocol was applied to all patients as random-start COH in 13 patients and conventional COH in 8 patients. An aromatase inhibitor 5 mg/day was administered to 13 patients with breast or ovarian cancer to prevent supra-physiological serum estradiol levels. Oocyte pick-up was administered transabdominally to 3 patients.

**Results:** The most common cancer type was breast cancer with ten patients, followed by seven patients with ovarian cancer and seven patients with lymphoma, two patients with colon ca, one patient with liposarcoma, and one patient with osteosarcoma. The mean age of the patients was 25.82±7.308. Both oocyte and embryo cryopreservation were performed in 13 married patients and the median number of oocytes retrieved was 11(5-32), the median number of mature oocytes was 8(3-26), the mean number of embryos was 4.46±2.79 and the mean fertilization rate was 74.69±20.8%. Only oocyte cryopreservation was performed in 8 patients and the median number of retrieved oocytes was 8 (4-16) and the median number of mature oocytes was 7 (2-12). **Conclusion:** With the survival rates of cancer patients increasing gradually over the years, interdisciplinary communication is important in terms of choosing the most appropriate fertility preservation strategy considering the current status and prognosis of the cancer patient

Table : The distribution of cancer types, demographic characters and cycle outcomes

Age, year	Diagnosis	AMH ng/ml	AI	Peak Estradiol level, pg/ml	Embryo count	Fertilization rate,%	Total oocyte count,n	MII oocyte count,n
36	Breast ca	4,4	-	1401	11	78,7	32	26
34	Breast ca	4,51	-	698	6	100	13	13
28	Breast ca	2,5	-	204	5	62,5	12	12
23	Recurrent tm (squamous carcinoma)	4,84	-	336	2	100	5	3
28	Breast ca	3,49	-	388	4	80	7	7
29	Breast ca	2,4	-	96	2	50	12	6
33	Breast ca	4,82	-	178	6	75	10	10
13	Dysgerminoma	0,78	-	697	-	-	16	12
18	Hodgkin lymphoma	1,9	-	3699	-	-	13	11
29	Breast ca	1,23	-	297	-	-	8	7
19	Hodgkin lymphoma	3,94	-	1375	-	-	4	2
44	Breast ca	0,4	-	300	-	-	4	3
25	Hodgkin lymphoma	5,79	-	249	-	-	12	9
27	Colon ca	7,8	-	2669	8	100	31	10
25	Breast ca	3,51	-	333	2	50	11	8
28	Dysgerminoma	5,44	-	889	5	100	11	5
33	Liposarcoma	0,45	-	883	2	50	6	4
24	Recurrent sarcom	2,8	-	1209	-	-	8	7
35	Breast ca	4	-	386	2	50	14	12
18	Invasive carcinoma	3,6	-	1039	-	-	6	4
30	Breast ca	0,99	-	143	3	75	11	8

**DIAGNOSTIC PROCEDURES**

**TRANSVAGINAL ULTRASOUND VERSUS MAGNETIC RESONANCE IMAGING FOR PREOPERATIVE ASSESSMENT OF MYOMETRIAL INFILTRATION IN PATIENTS WITH ENDOMETRIAL CANCER: A RETROSPECTIVE STUDY**

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**PROBLEM STATEMENT:** Preoperative selection of endometrial cancer cases with less than 50% of myometrial infiltration depth (MID) has been shown to avoid unnecessary lymph node dissections. Therefore, accurate preoperative evaluation of these cases is crucial. To compare the diagnostic accuracy of transvaginal ultrasound (TVS) and magnetic resonance imaging (MRI) in detecting patients with more than 50 % MID in endometrial carcinoma. **METHODS:** The study was performed at a single tertiary centre from June 2021 to June 2022, and included women diagnosed by biopsy of endometrial cancer who subsequently underwent TVS and/or MRI to assess MID based on the medical decision at the time of assessment. The results of both tests were later compared to the MID at the surgical anatomy piece as a reference method. **RESULTS:** A total of 33 patients were analyzed for the study. The mean age was 63.76, the youngest patient was 32 years old and the oldest was 88. According to the reference method, there were 21 (60.6%) cases in the study with MID 50%, and 12 (33.3%) with MID 50%. Before surgery, 26 patients were staged by ultrasound and 20 by MRI, because in 13 patients both tests were performed. TVS showed a concordance of 73%. Sensitivity, Specificity, Positive Predicted Value (PPV) and Negative Predictive Value (NPV) were 63.5%, 77.0%, 55.0%, 82.0% respectively. MRI presented a 60% concordance. Sensitivity, Specificity, PPV and NPV (PPV) were 70.0%, 50.0%, 58.0% and 62.0%. **CONCLUSION:** While Recent meta-analyses





have shown that% for detecting MID 50%, TVS has a sensitivity of 78% to 85% and a specificity of 82% to 84% and MRI has a sensitivity of 81% to 90% and a specificity of 82% to 89%, Our comparison shows higher specificity and higher NPV for the TVS assessment compared to MRI.

## HYSTEROscopic MANAGEMENT OF OSSEOUS METAPLASIA AND SECONDARY METHORRAGIA AND DYSpareunia: A CASE REPORT AND REVIEW OF THE LITERATURE

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**Problem statement:** Osseous metaplasia of the endometrium (OME) is a rare disorder characterized by the presence of mature/immature bone formation. Bone fragments act like a foreign body, this entity shows heterogeneous clinical manifestations. **Methods:** 44-year-old woman presented to a gynaecologic consult with a 12-year history of infertility, spotting and dyspareunia. Had a history of spontaneous miscarriage followed by uterine curettage 15 years ago, doubted whether if an IUD was placed after the procedure. Physical examination was normal. A 2D/3D-ultrasound revealed a hyperechogenic structure at the uterine cavity and in the cervical canal, with posterior acoustic shadowing, suspicious of foreign body. **Results:** An office hysteroscopy was performed. Two whitish, disc-shaped, resembling osseous structures, were found, with no other findings. Bone fragments were removed without complications. Histopathologic analysis established the diagnosis of OME. Three months later the patient denied any symptoms. **Conclusion:** OME is an uncommon entity, with an estimated incidence of 3/10000, 60-80% of cases report a history of pregnancy. Etiopathogenesis remains controversial, most accepted theories are the transformation of endometrial stromal cells into osteoblasts induced by chronic endometritis and the dystrophic calcification of residual ovular tissue. Clinical presentation includes dysmenorrhea, abnormal uterine bleeding, and infertility. Other symptoms, such as pelvic pain, vaginal discharge or dyspareunia may appear, 15% cases could be asymptomatic. The 2D/3D ultrasound plays a primary role for diagnose, showing a hyperechoic image with acoustic shadowing. Differential diagnoses might include IUD/foreign bodies, Asherman's syndrome, calcified fibroids, Mullerian tumor, endometrial tuberculosis and retained fetal tissue. Gold standard for management is hysteroscopy, it allows removal of the tissue and histopathological analysis. After treatment, improvement of the symptoms and fertility has been reported. Even though OME is an uncommon finding, it should be ruled out as a possible cause of various gynaecologic symptoms when the ultrasound pattern is found.

## FETOMATERNAL MEDICINE

### MATERNAL AND PERINATAL OUTCOMES IN PATIENT WITH ANTEPARTUM HEMORRHAGE AT PROF. DR. R. D. KANDOU GENERAL HOSPITAL

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**Problem Statement:** Antepartum hemorrhage is a burden problem for maternal morbidity and perinatal mortality worldwide. Placenta previa is the most prevalent etiology of antepartum hemorrhage (up to 50%). Considering the prevalence and harmful outcomes of antepartum hemorrhage from maternal and perinatal aspects, this condition should be a concern for healthcare management. **Methods:** The study is cross-sectional of the patient with antepartum hemorrhage at the Prof. Dr. R. D. Kandou General Hospital Manado. The data source is the medical records from all the patients with antepartum hemorrhage from January to December 2021. This study aims to identify the maternal outcomes (placenta abnormality, anemia, shock, and the delivery methods) and perinatal outcomes (prematurity, low birth weight, and perinatal mortality) in the patient with antepartum hemorrhage. **Results:** The total subjects of our study are 31 patients with antepartum hemorrhage, dominated by the age of 20-35 years old (54.83%) on their first pregnancy (38.70%). The gestational age varied: 28 weeks (0.03%), 28-36 weeks (48.38%), and 37-40 weeks (48.38%). The subjects were mostly without a history of uterus operation (77.41%), and all subjects did not have a history of placenta previa. All the subjects had placenta abnormality: total placenta previa (83.87%), solution placenta (0.06%), and total placenta previa with accreta (0.09%). The maternal outcomes are anemia (67.74%), shock (25.80%), and section caesarian (96.77%). The perinatal outcomes are prematurity (51.61%), low birth weight (51.61%), and perinatal mortality (19.35%). **Conclusions:** The study concludes that antepartum hemorrhage is associated with several harmful maternal and perinatal outcomes.

**Keywords:** antepartum hemorrhage, maternal, perinatal, pregnancy

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**Conflict of Interest:** None to declare

**Author Contributions:** All authors were involved in the conception and editing of the manuscript. All authors were also involved in the clinical care of the patients.

**Data Availability:** The authors declare that data supporting the findings of this study are available within the article

## PERFORMANCE OF FETAL ULTRASOUND AND MAGNETIC RESONANCE IMAGING IN PREDICTING THE EXTREMES OF BIRTHWEIGHT ACCORDING TO DIFFERENT GROWTH CHARTS

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**Problem statement:** The estimation of fetal weight (EFW) by fetal magnetic resonance imaging (MRI) has a higher sensitivity to predict macrosomia in comparison to ultrasound (US). The purpose of this study is to compare the performance of MRI and US in the prediction of birthweight (BW) according to four selected growth charts: Yudkin, INTERGROWTH-21st (IG-21) project, World Health Organization (WHO), and Fetal Medicine Foundation (FMF) growth charts. **Methods:** Data of a prospective, single-center, blinded cohort study that compared the performance of MRI and US at 36+0/7-36+6/7 weeks of gestation (WG) in the prediction of BW $\geq$ 95th percentile were analyzed (PREMACRO study). EFW and BW were categorized as superior or inferior to the 5th, 10th, 90th,



and 95th percentile according to the four growth charts. The performances of US and MRI in the prediction of BW5th, 10th, 90th, and 95th percentile in each growth chart were compared. **Results:** 2378 women were eligible for final analysis. The incidences of BW90th and 95th percentiles were the lowest with the FMF chart and the highest with the IG-21 chart. The sensitivity of MRI in the prediction of BW95th percentile was significantly higher than that of US among the four growth charts, however, its specificity was slightly lower than that of US. In contrast, the sensitivity of MRI in the prediction of BW90th percentile were close to those of BW95th percentile, and findings for the prediction of BW. **Conclusion:** The sensitivity of MRI is higher than that of US in the prediction of large for gestational age fetuses and lower than that of US in the prediction of small for gestational age fetuses among the different studied growth charts.

**Disclosure of Interests:** none

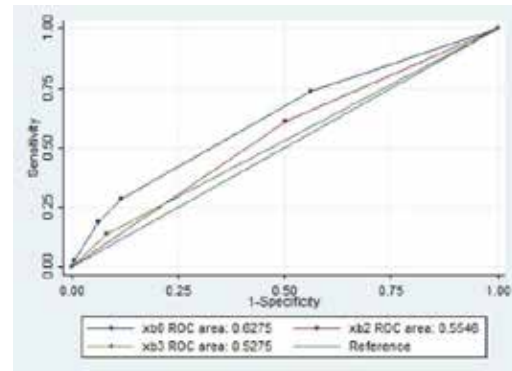
**COMPARISON OF THE PREDICTIVE ABILITY FOR PERINATAL ACIDEMIA IN NEONATES BETWEEN THE NICHD 3-TIER FHR SYSTEM COMBINED WITH CLINICAL RISK FACTORS AND THE FETAL RESERVE INDEX**

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**Problem statement:** Electronic fetal monitoring alone is a poor screening test for detecting fetuses at risk of acidemia or asphyxia. We aimed to evaluation of predictive ability of the National Institute of Child Health and Human Development (NICHD) 3-tier fetal heart rate (FHR) system combined with the maternal, obstetric, and fetal risk factors for predicting perinatal acidemia, and to compare this with the predictive of the NICHD 3-tier system alone, and the Fetal Reserve Index (FRI). **Methods:** A retrospective cohort study was conducted among singleton term pregnant women. Fetal heart rate tracings of the last two hours before delivery were interpreted into the NICHD 3-tier FHR classification system by two experienced obstetricians. Demographic data were compared using the  $\chi^2$  or Fisher's exact test for categorical variables and the Student's t test for continuous variables. Logistic regression model was used to identify factors associated with perinatal acidemia in neonates. The Odds ratios (OR) and probabilities with 95% confidence intervals (CI) were calculated. **Results:** A total of 674 pregnant women were enrolled in this study. Using the NICHD 3-tier FHR categories I and II combined with the selected risk factors (AUC 0.62) had a better performance for perinatal acidemia prediction than the NICHD 3-tier FHR alone (AUC 0.55) and the FRI (AUC 0.52), (P0.01). Improvement of predicting perinatal acidemia was found when NICHD category I was combined with preeclampsia or arrest disorders of labor (OR 3.2, 95% CI 1.30–7.82) or combined with abnormal second stage of labor (OR 6.19, 95% CI 1.07–36.06) and when NICHD category II was combined with meconium-stained amniotic fluid (OR 4.73, 95% CI 2.17–10.31). **Conclusions:** The NICHD 3-tier FHR categories I or II combined with selected risk factors can improve the predictive ability of perinatal acidemia in neonates compared with the NICHD 3-tier system alone or the FRI.



**UTERINE SCAR DEHISCENCE DESPITE SUCCESSFUL VAGINAL BIRTH AFTER CAESAREAN (VBAC) - AN ATYPICAL CASE PRESENTING AS POST-PARTUM HAEMORRHAGE (PPH)**

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**Introduction:** Uterine scar rupture or dehiscence is a serious complication that can occur during a trial of Vaginal Birth After Caesarean (VBAC). A high index of suspicion is essential to obtain an early diagnosis in order to minimise morbidity and mortality risk. Following the rising trend of caesarean sections worldwide, there has also been an increase in the number of VABCs being offered to mothers after their first caesarean section. **Problem Statement:** It is well-known that with each successful VBAC, subsequent attempts are associated with a higher probability of success. However, there is minimal literature describing the obstetric and gynaecological complications after a successful VBAC. As such, clinicians may be led into a false sense of security when attempting subsequent trial of VBAC with patients. **Case Presentation:** We describe a case of a patient with previous uncomplicated caesarean section that underwent a successful VBAC but was diagnosed with uterine scar dehiscence in the early postpartum period. Although the patient was well immediately postpartum, she subsequently developed postpartum haemorrhage followed by lower abdominal pain 10 hours post-delivery. A high index of suspicion with expedient imaging allowed for decisive surgical intervention that avoided hysterectomy and deterioration in her condition. The myometrial defect within the uterine scar was repaired via a modified technique described by Siraj et al.[1] in order to re-establish anatomical integrity. **Recognition and Reattachment of the Retracted muscles (3R Technique)** is an essential step to achieve adequate Residual Myometrial Thickness (RMT) thus reducing morbidity associated with uterine scar defects. The patient made a full recovery with long-term imaging demonstrating good RMT. **Conclusion:** Uterine scar pathology caused by a myometrial defect is a potential complication that can occur following a VBAC. In some cases, its presentation may not be characteristic of a scar rupture. It is imperative that clinicians maintain a high index of suspicion when approaching patients presenting with postpartum haemorrhage post-VBAC.

[1] Siraj, S.H.M., Lional, K.M., Tan, K.H. et al. Repair of the myometrial scar defect at repeat caesarean section: a modified surgical technique. *BMC Pregnancy Childbirth* 21, 559 (2021). <https://doi.org/10.1186/s12884-021-04040-9>



## POSTSURGICAL ANALGESIA IN OBSTETRICS: PATIENTS' ATTITUDES

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**Problem statement:** Childbirth is important in women's life, but a few studies have examined obstetric patients' anesthesia preferences and satisfaction. One of the obligations of obstetrician and anesthesiologist is eliminating postoperative pain. Appropriate pain management allows better recovery. The aim of this research is the assessment of the patient's preferences and satisfaction regarding anesthesia and postcesarean analgesia. **Methods:** Questioning was based on cross-sectional study. Specially created questionnaires were distributed to 62 women in order to determine patients preferences, fears and postoperative anesthesia outcomes. Questionnaire contains questions about demographic characteristics, previous experience with total and regional anesthesia, questions about anticipatory fears and outcomes after the caesarean section, whose intensity is graphically evaluated on a visually analog scale of 0 to 100mm (VAS 0-100). **Results:** In developed countries, the percentage of regional anesthesia for elective caesareans is over 90%. In our study, of the 62 women who underwent a caesarean section, only one underwent regional anesthesia (1.6%). The results of the study show that the most patients were satisfied (68,9%), with no serious side effects. The greatest fear was throat pain (marked on VAS 0-100, mean 20 mm), followed by fear of side effects of anesthesia on baby, vomiting and shivering. The most common clinical side effect was throat pain (35 mm VAS 0-100), followed by shivering and vomiting. There were no significant statistical correlations between demographic characteristics, the previous birth experience with the frequency of anticipatory attitudes or post-operative experience. **Conclusion:** The decision of the way in which cesarean section should be performed should be made by the doctors and patients together, taking into account the preferences of the mother. regional anesthesia is preferred if there are no contraindications for it. Therefore, further research should be conducted on the discrepancy between the frequency of regional anesthesia in caesarean section in Serbia compared to the world trend. Raising the awareness of obstetrician and anesthesiologist about anticipatory attitudes, as well as the most commonly experienced unwanted effects of anesthesia, would significantly contribute to finding the most optimal solution in treatment - effective pain relief, without harmful consequences for the mother and the baby.

## A CASE OF INTRAUTERINE DEATH FOLLOWING KELL ALLOIMMUNIZATION

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**Problem statement:** This is a case report about an intrauterine death with marked hydrops fetalis due to severe anemia which was associated with maternal Kell alloimmunization. **Methods:** A 29-year-old female presented for her booking visit at 11+5 weeks gestation. This was her third pregnancy following a miscarriage at 4 weeks in 2010 and delivery of a healthy term foetus in 2012 by emergency lower section Caesarean section for foetal distress. The mother's blood group was noted to be O positive but also positive for anti-Kell antibodies. This hadn't been determined during previous pregnancies. The mother was followed up

throughout pregnancy with all the necessary investigations until she eventually presented with an intrauterine death. **Results:** The mother herself was Kell negative, but the father was heterozygous for Kell. Through an indirect antiglobulin test the antenatal maternal titre levels were found to be high at 512 and in view of this, they were scheduled to be repeated 4-weekly up to 28 weeks, then 2-weekly thereafter until delivery. Molecular testing for Kell was scheduled for after 20 weeks gestation to determine whether the baby was Kell positive. The mother was scheduled for detailed biometry and middle cerebral artery- peak systolic velocity ultrasound scans looking for any foetal anaemia from 24 weeks onwards. The patient presented for a routine antenatal visit at 19+5 weeks gestation. On examination fundus measured according to dates but there was no foetal heart detected on doppler foetal monitor. An ultrasound confirmed marked foetal hydrops and foetal demise. Both parents were informed and the case was discussed with the caring consultant. The patient was admitted and administered Misoprostol to allow for delivery. **Conclusion:** It is recommended that all pregnant women are screened for the presence clinically significant red cell antigens including Kell blood group antigens on their first antenatal visit. Early determination of the anti-Kell titer is sufficient to select pregnancies at increased risk for haemolytic disease of the foetus and newborn (HDFN) with need for transfusion therapy. Kell negative red cell blood should be routinely provided for all females with child-bearing potential to reduce the risk of Kell-associated HDFN.

## DICHORIONIC TRIAMNIOTIC TRIPLETS CASE REPORT

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**Problem statement:** This case report details the antenatal course of a spontaneous dichorionic triamniotic triplet pregnancy complicated by twin-to-twin transfusion syndrome (TTTS) in early gestation, leading to foetal demise of one foetus, followed by premature labour and the demise of the other two prematurely born foetuses. **Methods:** A 34-year-old female presented in her second pregnancy following a normal vaginal delivery of a healthy term infant in 2020. During her first trimester scan a diagnosis of a dichorionic triamniotic triplet pregnancy was made. The mother was followed up closely by regular antenatal visits with ultrasound to assess viability and growth of the triplets. **Results:** At 16 weeks gestation it was noted that there was selective IUGR with supra-imposed TTTS stage 3 affecting one of the monochorionic foetuses. The patient underwent laser ablation of the placental vessels at 16+4 weeks gestation at a tertiary referral centre in the UK. Post-ablation, foetal demise of one of the monochorionic foetuses was confirmed. At 17+1 weeks the patient presented with leakage of clear fluid vaginally. This was confirmed to be amniotic fluid and the patient was started on oral antibiotics. Ultrasound confirmed that the liquor was draining from the demised foetus's sac and that the other two twins had satisfactory amounts of liquor and the cervix was closed. The patient was followed up conservatively. At 26+2 weeks the patient presented complaining of abdominal tightenings which led to premature labour and resulted in her having an emergency Caesarean section. Despite relatively good weights, the preterm twins passed away after only a few hours. **Conclusion:** TTTS is a serious condition affecting multiple pregnancies. Due to the low incidence of this condition and its unique physiology, disease progression may be difficult to predict and hence these cases should always be referred to and managed in tertiary centres. Laser coagulation of placental anastomoses has emerged as the standard therapy for this condition both in twin and in triplet pregnancies. So far it seems that survival rates are lower in



the latter form of multiple pregnancies, but more studies are needed.

### TIMING OF ELECTIVE CESAREAN DELIVERY AND PERINATAL OUTCOME IN NON-COMPLICATED SINGLETON PREGNANCIES

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**Problem statement:** We compared the maternal and neonatal outcomes in women with non-complicated singleton pregnancies according to scheduled timing of elective cesarean delivery. **Methods:** This was a retrospective cohort study of 2,367 women with singleton pregnancy who delivered by elective cesarean section in a single institution between 2010 and 2021. Pregnant women with preterm delivery, multiple gestation, vaginal delivery, complicated pregnancy, and non-scheduled emergency cesarean delivery were excluded. Subjects were categorized into three groups according to scheduled date of cesarean delivery: 37 (37+0–37+6) weeks (n=147), 38 (38+0–38+6) weeks (n=1487), and 39 (39+0–39+6) weeks (n=733) of gestation. Pregnancy outcomes and neonatal outcomes were reviewed. **Results:** Pre-pregnancy BMI, proportion of multipara, and the rate of previous preterm delivery history significantly decreased with increase in scheduled week of cesarean delivery. Indication for cesarean delivery was significantly different between the three groups. The rate of emergent cesarean delivery significantly increased with increase in scheduled week of cesarean delivery. The rate of small-for-gestational age and large-for-gestational age, neonatal hyperbilirubinemia, and neonatal composite outcome were significantly different between the three groups. Neonatal ventilator use and respiratory distress syndrome significantly decreased with increase in scheduled week of cesarean delivery. On the contrary, neonatal meconium staining significantly increased with increase in scheduled week of cesarean delivery. The rate of emergent cesarean delivery was significantly higher at 38 weeks of gestation (adjusted odds ratio (aOR) 4.70, 95% confidence interval (CI) 1.71–12.93) and at 39 weeks of gestation (aOR 8.83, 95% CI 3.18–24.50) compared to 37 weeks of gestation. The rates of maternal composite outcome and neonatal composite outcome were significantly higher at 37 weeks of gestation (OR=2.63, 2.74, respectively), but not at 38 weeks of gestation compared to 39 weeks of gestation. **Conclusion:** In non-complicated singleton pregnancy, planning elective cesarean delivery at 37 weeks of gestation was associated with a higher risk of adverse pregnancy outcome. However, planning elective cesarean delivery at 38 weeks of gestation showed no worse pregnancy outcome than 39 week of gestation.

**Disclosure of Interest:** No conflicts of interest to declare

### PERINATAL OUTCOMES OF CESAREAN DELIVERY ON MATERNAL REQUEST VERSUS TRIAL OF LABOR IN NON-COMPLICATED SINGLETON NULLIPAROUS PREGNANCIES

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**Problem statement:** This study aimed to compare the maternal and neonatal outcomes between cesarean delivery on maternal request (CDMR) and trial of labor (TOL) in

nulliparous non-complicated singleton pregnant women. **Methods:** This retrospective case-control study included 1,184 nulliparous singleton pregnant women who delivered in a single institution between 2010 and 2021. The case group (CDMR) consisted of 296 women who chose CDMR, and their controls (TOL) were randomly selected (n=888) (1:3 matching ratio) from 5,198 women who chose TOL. Pregnant women with preterm delivery, multiple gestation, complicated pregnancy, and who had indications for cesarean section that would normally preclude TOL were excluded. Pregnancy and neonatal outcomes were compared between the CDMR and TOL group. **Results:** In the CDMR group, all women underwent cesarean section, and 27.6% women in the TOL group underwent emergency cesarean section. In the CDMR group, maternal age was younger and maternal body mass index at delivery was higher than the TOL group. Preoperative hemoglobin levels was similar in the two groups, but hemoglobin levels on the first day (10.3±1.4 vs. 10.8±1.3, P0.001) and third day after surgery (9.7±1.3 vs. 10.3±1.3, P0.001) were significantly lower in the TOL group than those of the CDMR group. The rates of postoperative complications including postpartum hemorrhage, endometritis, wound infection, dehiscence, or re-suture were similar in the two groups. 3rd- or 4th-degree perineal tear (7.9%) and episiotomy infection (3.9%) occurred only in the TOL group, as expected. The rate of small-for-gestational age was higher and the rate of large-for-gestational age was lower in the CDMR group than the TOL group. The rate of 1-minute Apgar score less than 4 was significantly higher in the TOL group. However, the rate of neonatal composite outcome was comparable between the two groups. **Conclusion:** In our study population of women with non-complicated nulliparous singleton pregnancy, maternal and neonatal short-term outcomes were comparable between the CDMR and TOL group. However, CDMR was associated with a lesser decrease in hemoglobin after delivery. However, long-term consequences of CDMR versus TOL remained to be investigated to draw a conclusion.

**Disclosure of Interest:** No conflicts of interest to declare.

### PREDICTIVE MODELS FOR OUTCOME AFTER PHYSICAL EXAMINATION INDICATED CERCLAGE

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**Problem statement:** We try to develop a predictive model for surgical success and delivery over 28 weeks of gestation for physical examination-indicated cerclage. Design: This was a multicenter retrospective cohort study. A total of 103 patients were included. **Methods:** Study subjects were patients who had physical examination-indicated cerclage during a gestation period of 14 to 28 weeks. Characteristics of groups with surgical success and pregnancy maintained up to over 28 weeks were analyzed. Predictive models were devised using binary logistic regression based on the results from univariate analysis. **Results:** The mean gestational age at diagnosis was 21.8 ± 2.6 weeks and the mean gestational age at delivery was 28.3 ± 6.9 weeks. With the predictive model of probability of success for cerclage = 6.28941 – 1.00889 × Ultrasound B (cm) – 0.57890 × CRP at admission (mg/dL) – 0.04885 × Operation time (min), predictive accuracy was 0.91 (95% CI: 0.834 – 0.989) and cutoff value was 0.94. With the predictive model of probability of delivery over 28 weeks of gestation = – 12.04094 + 0.59767 × Gestational age (weeks)



+ 0.25873 × amniure (0, positive; 1, negative) + 0.03553 × Ultrasound C (cm) – 0.95187 × Cervical dilatation (cm), predictive accuracy of the model was 0.85 (95% CI: 0.719 – 0.984) and cutoff value was 0.47. **Conclusion:** Predictive models proposed in this research are expected to predict a patient's prognosis more objectively and provide counseling for the patient and her family before and after surgery

#### THE TREND IN CESAREAN MYOMECTOMIES AND THE RISK OF OBSTETRICAL COMPLICATIONS IN KOREA

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**Problem statement:** To evaluate the pregnancy outcome and the risk of adverse obstetrical outcomes of performing cesarean myomectomy (CM) compared to cesarean section (CS) only and to investigate the trend of surgeon to choose CM. **Methods:** A retrospective cohort study was done of all patients who underwent CS which is complicated with leiomyoma at two university hospital from January 2010 to May 2020. All patients were categorized into CM group and CS only group. We analyzed the demographic factors, obstetric factors, surgical outcomes and possible risk factors for adverse outcomes between two groups. **Results:** A total of 438 women in CS only group and 341 women in the CM group were included. Women who underwent CS only group had significantly higher of history of previous myomecomy, multiple leiomyomas compared to women who underwent CM. Gestational days at delivery and the complication of pregnancy were significantly high in CS group. The mean size of leiomyoma was larger in CM group than CS group (5.8±3.2cm vs 5.2±3.1cm, p=0.005). Operation time, history of previous CS and preterm labor were higher in CM. It seems that preterm labor and abnormal presentation were relatively higher in the CM group than in CS group due to presence of leiomyoma. Because of hemostasis during operation and myomectomy, operation time of CM is longer than CS. There are no significantly differences about pre and postoperative Hemoglobin level. The size of leiomyoma and operation time 60minutes were significant independent predictors of adverse outcomes after CM. **Conclusions:** Cesarean myomectomy is a reliable and safe approach to prevent from the need of another operation for remnant leiomyoma. In our study, surgeons seem to perform CM when uterine leiomyomas are large, subserosal type or small in number. Standardized treatment guidelines for myomectomy during cesarean section in pregnant women with uterine leiomyoma should be established.

#### THE CORRELATION AND PREDICTIVE VALUE OF ANEUPLOIDY MARKERS FOR LOW RISK PREGNANT WOMEN COMPLICATED WITH EARLY ONSET PREECLAMPSIA

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**Problem statement:** This study aimed to investigate the predictive value of each aneuploidy marker for the onset period of preeclampsia (PE) and to clarify the association of pregnancy-associated plasma protein A (PAPPA) and other second trimester markers in pregnant women complicated with subsequent early-onset PE. **Methods:** Among the 794 pregnant women who delivered in single tertiary hospital, excluding those with high risk pregnancies, 555 pregnant women were subdivided into 3 groups: normotensive, early-

onset PE (EOPE) and late-onset PE (LOPE). Statistical correlations between each markers and onset period of PE, in terms of alterations in the second trimester markers according to change in PAPP-A values in each group were evaluated. **Results:** PAPP-A was significantly lower in the EOPE group than in the LOPE and normotensive groups. Levels of  $\alpha$ -Fetoprotein ( $\alpha$ FP) and human chorionic gonadotropin (hCG) among the second trimester markers were significantly higher, while uE3, while those of unconjugated estril (uE3) and inhibin-A were significantly lower in the EOPE group than in the LOPE and normotensive controls. The association between PAPP-A and other second markers showed that changes in uE3 values were only related to changes in PAPP-A in each group. **Conclusion:** Alterations in serum markers levels were significantly associated with EOPE. However, these markers alone had limitations in the screening for early diagnosis of PE. For more precise prediction of EOPE, further investigations using novel sex steroid markers based on the above results are warranted.

#### A PREDICTIVE MODEL FOR SUCCESSFULLY INDUCING ACTIVE LABOR AMONG PREGNANT WOMEN: COMBINING CERVICAL STATUS ASSESSMENT AND CLINICAL CHARACTERISTICS

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**Background:** To develop a predictive model for successfully inducing active labor by using a combination of cervical status and maternal and fetal characteristics. **Methods:** A retrospective cohort study was conducted among pregnant women who underwent labor induction between January 2015 and December 2019. Successfully inducing active labor was defined as achieving a cervical dilation 4 cm within 10 hours after adequate uterine contractions. The medical data were extracted from the hospital database; statistical analyses were performed using R software, and a logistic regression model was used to identify the predictors associated with the successful induction of labor. The receiver operating characteristic (ROC) curve and area under the curve (AUC) were used to assess the accuracy of the model. **Results:** In total, 1448 pregnant women were enrolled; 960 (66.3%) achieved successful induction of active labor. Multivariate analysis revealed that maternal age, parity, body mass index, oligohydramnios, premature rupture of membrane, fetal sex, dilatation, station, and consistency were significant factors associated with successful labor induction. The ROC curve of the logistic regression model had an AUC of 0.7728. For the validated score system to predict probability of success, we found that a total score 60 has 73.0 % (95% CI 59.0-83.5) probability of successful induction of labor into the active phase stage within 10 hours. **Conclusions:** The predictive model for successfully achieving active labor using the combination of cervical status and maternal and fetal characteristics had good predictive ability and was easy to use in clinical practice.

#### PRENATAL DIAGNOSIS AND MANAGEMENT OF SACROCOCCYGEAL TERATOMA: A CASE REPORT

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**Problem statement:** Sacrococcygeal teratoma (SCT) is the most common tumor site in neonates, occurring in 1 out of



20,000-40,000 births. With more advancements in ultrasonography (US), more cases of SCT are diagnosed prenatally. A 26-year-old primigravida at thirty-seven weeks and three days of gestation was referred to our hospital due to prenatal diagnosis of sacrococcygeal teratoma at the 25th week of pregnancy. **Methods:** Observational **Result:** Ultrasonography revealed a single viable intrauterine fetus with longitudinal lie, cephalic presentation, and right occiput position, an estimated fetal weight of 2917 grams, single deepest pocket of 2.9 cm, estimated gestational age of 36 weeks and 3 days, the appearance of cardiomegaly and a coccygeal tumor of the size 7 cm x 7 cm. Based on history, physical examination, and supporting examination, the diagnosis was primigravida (G1P1A0) of 37 weeks and 3 days of gestational age (term pregnancy) with fetal cardiomegaly and sacrococcygeal tumor. The patient underwent a caesarean section delivery the following day. The male baby was delivered without any complications, with Apgar scores of 8/10, birth body weight of 3000 grams, body length of 46 cm, and a visible sacrococcygeal mass. **Conclusion:** Sacrococcygeal teratoma is a common neonatal neoplasm. Prenatal diagnosis is essential to avoid complications, morbidity, and mortality. Pregnancies with prenatally diagnosed SCT can be managed with fetal intervention or planned term delivery based on a number of clinical indicators. Early diagnosis and complete resection of the tumor with removal of the coccyx is associated with good prognosis.

#### INTERSTITIAL ECTOPIC PREGNANCY: A CASE REPORT

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**PROBLEM STATEMENT:** Interstitial ectopic pregnancy is the most common non-tubal ectopic pregnancy (1-11%). It is defined when the pregnancy is implanted in the junction between the interstitium of the fallopian tube and the myometrium. It is associated with high maternal mortality (20% of maternal deaths secondary to ectopic pregnancies). It can be confused with angular intrauterine pregnancy that is considered as a variation of normality. **METHODS:** We report a case of a woman of 29 years, with history of a previous caesarian section of a twin pregnancy at week 33, who came to the emergency room complaining of metrorrhagia similar to menstruation with a positive pregnant test the day before. She referred an amenorrhea of 5.3 weeks. **RESULTS:** The patient was stable and vital signs and parameters from the initial blood test were normal and the beta human chorionic gonadotropin (b-hCG) hormone was initially 7.695 mIU/L. In the vaginal ultrasound we founded an elongated gestational sac of 17 mm, located at the level of the uterine horn surrounded by a myometrium of 2.9 mm. Our diagnosis was based on the ultrasonography criteria of the ESHRE (European Society of Human Reproduction and Embryology) recommendations so finally the case was managed as a right interstitial pregnancy. The patient received 4 doses of methotrexate and 4 doses of calcium levofolinat every 48 hours and was followed up every week by serial b-hCG hormone measurement and transvaginal ultrasound examination. After a follow-up of 93 days levels of b-hCG were 0.17 mIU/L and there was no evidence of extra uterine gestational sac. **CONCLUSION:** The clinical challenge is to avoid managing an interstitial ectopic pregnancy as an intrauterine angular pregnancy. Interstitial pregnancies should

be interrupted at the time of diagnosis since it may lead to major complications. Angular pregnancy should be considered as a potentially viable intra-uterine eccentric pregnancy and can be managed expectantly. Standardizing the classification of these pregnancies near the uterotubal junction is important to unify conservative and effective management strategies. This case highlights the importance of developing standardized criteria to differentiate the types of ectopic pregnancies and their correct management.

#### RARE CASE OF ACUTE KIDNEY INJURY IN PREGNANCY WITH PRE-EXISTING AORTIC STENOSIS

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Acute kidney injury (AKI) that occurs during pregnancy or in the post partum period is a serious obstetric complication with an increased risk of maternal and fetal morbidity and mortality. First trimester causes of AKI in pregnancy include hyperemesis gravidarum and septic abortion. In the third trimester, causes such as preeclampsia, acute fatty liver of pregnancy, HELLP syndrome and the thrombotic microangiopathies (thrombotic thrombocytopenic purpura, atypical hemolytic uremic syndrome) exhibit overlapping features and often present as a diagnostic dilemma. Clinical judgement and experience along with laboratory investigations become paramount in making an accurate diagnosis. Rarely, renal biopsy may have to be considered for the exact diagnosis and plan appropriate treatment, but the risks and benefits need to be carefully considered. Typically, AFLP and HELLP syndrome improve after delivery of the fetus, whereas plasma exchange is the first-line treatment for pregnancy associated thrombotic microangiopathies (P-TMA). We observed that preeclampsia/eclampsia is the most common cause of AKI in late third trimester and postpartum periods followed by puerperal sepsis and postpartum hemorrhage. Amniotic fluid embolism and postpartum hemorrhage are major death causes of pregnant women with AKI. The treatment of AKI in pregnancy is generally supportive, often coupled with expedient delivery, especially when diagnosis is AFLP or HELLP. Given the recent trends of increasing maternal age at the time of pregnancy, as well as the availability of modern reproductive methods both of which may be associated with significant co-morbidities, the issues surrounding AKI in pregnancy may become more relevant in the coming years.

#### ABBREVIATIONS:

AKI- Acute kidney injury  
HELLP- Hemolysis, Elevated liver enzymes and Low platelets  
AFLP- Acute Fatty liver of pregnancy  
P-TMA- Pregnancy associated thrombotic microangiopathies.

**DISCLOSURE:** The authors declare they have no competing interests.

#### REMOTE ELECTRONIC FETAL HEART AND VITAL SIGNS MONITORING IN A COVID-19 REFERRAL HOSPITAL IN THE PHILIPPINES USING A LOCALLY MADE MONITORING DEVICE: RXBOX VERSION 2

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**Problem statement:** COVID-19 infection was observed to have detrimental effects both to the mother and fetus. Due to its high infectivity, different forms of technology were developed and utilized to provide better health care delivery



while decreasing risk of exposure of health care providers. RxBox version 2 is a locally made vital signs and electronic fetal monitoring device initially developed and validated for transmission of medical data and information from remote areas of the Philippines. It was utilized during the pandemic for continuous and remote monitoring of pregnant patients. The aim of this study was to describe the use of RxBox version 2 among pregnant patients infected with COVID-19. **Method:** A retrospective descriptive study of the use of RxBox version 2 was conducted in a COVID-19 referral hospital, Philippine General Hospital. A total of 28 patients were included in the study whom maternal characteristics, vital signs, fetal heart monitoring and neonatal outcome were collected. Descriptive statistics were computed. **Results:** Majority of the cases at 75% (n = 21) were classified to have mild COVID-19. Elevated blood pressure was noted in 17.9% (n = 5) and 21.3% (n = 6) of all traces were categorized as non-reassuring. The fetal Cardiotocogram and vital signs read by the RxBox version 2 were used to provide abrupt and appropriate management namely providing antihypertensive medications for elevated blood pressure, giving oxygen support for low oxygen saturations and doing emergency cesarean section for non-reassuring fetal heart rate pattern. Remote monitoring was used for patients at the intensive care unit, for patients undergoing dialysis, and patients who are far from labor and delivery. **Conclusions:** During COVID-19 pandemic, the locally-made monitoring device, RxBox version 2, enabled continuous and remote monitoring of patients infected with COVID-19 leading to prompt and appropriate management. This device has a potential to provide better quality of health care especially during this pandemic. Further prospective studies and acceptability studies are recommended.

Disclosure of interest: Authors state no conflict of interest.



Image 1. RxBox Version 2 and attachments

#### RUPTURE OF AN ECTOPIC PREGNANCY WITH NEGATIVE BETA-HUMAN CHORIONIC GONADOTROPIN. A CASE REPORT

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**PROBLEM STATEMENT:** Ectopic pregnancies represent 11 over 1000 pregnancies and in 80% of the cases they are located in the ampullary region of the tube. Medical treatment with Metotrexate has an effectivity of around 80-90%. It is considered solved when beta-human chorionic gonadotropin (b-hCG) becomes 20mUI/ml (considered negative) which can last from 19 up to 129 days. Risk of rupture is from 7-14% and levels of b-hCG are a direct risk factor. Ultrasonographic image corresponding to the ectopic pregnancy can persist even during 1 year. **METHODS:** We report a case of a 34 years-old woman, who was diagnosed of an extrauterine

pregnancy and managed with medical treatment (Metotrexate). Initially, the patient was 7.8 weeks amenorrheic, asymptomatic, b-hCG levels were of 1221mUI/ml and the ultrasound revealed no evidence of intrauterine pregnancy but a right paraadnexial image of 12x16mm with doppler showing a hypervascular ring around the image. During the follow-up after metotrexate administration, levels of b-hCG decreased progressively until 18mUI/ml (negative) after 62 days when the episode was considered solved and the patient was discharged. **RESULTS:** 3 weeks after the discharge, the patient came again to emergencies of the hospital in fair good condition and intense abdominal pain of 24h of evolution. In the physical examination it stood out hypotension and painful abdomen with positive decompression in right iliac side. B-hCG levels in that moment were of 4.12mUI/ml and the ultrasound revealed a right heterogenous adnexial image of 71x32mm comprehending the ovary and a maximum column of fluid of 56mm in the pouch of Douglas. Rupture of the ectopic pregnancy was suspected and an exploring laparoscopy was performed with the following findings: 500cc of hemoperitoneum and rupture of the ectopic pregnancy in the right tube that required salpingectomy. Posteriorly the extrauterine pregnancy was confirmed by the pathological examination. **CONCLUSIONS:** This is an exceptional case where the rupture occurred after negative levels of b-hCG. It is important to consider extrauterine pregnancy in the differential diagnosis of abdominal pain and unstable condition when the patient has recent history of extrauterine pregnancy.

#### DIAGNOSIS AND CLINICAL MANAGEMENT OF MONOCHORIONIC MONOAMNIOTIC TWIN PREGNANCIES. A CASE REPORT

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**Problem statement:** Monochorionic monoamniotic pregnancies are rare, representing 1% of twins, but carry a high risk of complications. Only 70% of all monoamniotic twins survive and approximately half of fetal deaths occur because of high incidence of fetal anomalies such as: TRAP sequence, twin-to-twin transfusion syndrome (TTTS), tight cord entanglement and conjoined twinning. Early anatomy screening in the first trimester is recommended and, after viability, fetal surveillance should be intensified in order to prevent in utero deaths. If no other complications arise, twins should be delivered at 33-34 weeks<sup>1</sup>, ideally by caesarean section.

**Methods:** We report a case of a 29-year-old woman, gravida 0 para 0, diagnosed in the first trimester ultrasound with a monochorionic monoamniotic twin pregnancy in another facility and was sent to ours at 15 weeks. Second trimester screening showed an intermediate risk of chromosomal anomalies, cell-free DNA test showed low risk for T21, T13 and T18. Pregnancy was closely followed with semi-monthly ultrasounds after reaching viability until 29 weeks, then controls were intensified with weekly ultrasounds and semi-weekly office appointments. At 28 weeks first round of betamethasone for lung maturation was administered, second and last at 32 weeks. All ultrasounds resulted normal with no signs of TTTS. **Results:** Patient was admitted at hospital at 32+5 weeks for intensive monitoring of the pregnancy and daily non-stressed test. Elective c-section was performed at 33+5 weeks, agreed with the patient and neonatal unit,



resulting in the birth of two healthy babies. **Conclusion:** Monochorionic monoamniotic pregnancies are rare but carry a high risk of severe complications. There are many controversies about follow-up and timing of delivery, therefore, patients need to be able to get all the information available in order to make an informed decision guided by professionals.

#### INTRAUTERINE MIDGUT VOLVULUS WITH ISCHEMIC NECROSIS

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A 26 years old, G2P1A0 presented to us in established preterm labour at 34+5 weeks of gestation. She was an unbooked lady with no antenatal care in her index pregnancy. As she came in established spontaneous preterm labor, an obstetric ultrasound could not be performed. On admission she had suspicious CTG, the bedside scan showed polyhydramnios with markedly dilated gut loops raising the suspicion of intestinal obstruction/meconium ileus, there was free fluid in abdomen as well. Couple was explained about the abnormal findings in scan and suspicious CTG. Emergency cesarean section was offered but Patient opted normal vaginal delivery. She delivered a baby boy weighing 2.5kg, with Apgar score of 3, 5 and 6 at 1, 5 and 10 minutes. Abdomen was markedly distended with bluish discoloration of skin. Baby was intubated and shifted to NICU. After initial stabilization, baby underwent laparotomy with resection of 80cms of ischemic gut and end to end anastomoses for the remaining healthy gut.

#### THE EFFECT OF ASPIRIN THERAPY ON HEPATOCYTE NUCLEAR FACTOR 1 ALPHA LEVELS IN PREGNANT WOMEN WITH RISK FACTORS FOR PREECLAMPSIA

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**Problem statement:** Preeclampsia is one of the main causes of maternal death worldwide, including Indonesia. Morbidity and mortality from preeclampsia occur in 5 to 7% of all pregnancies and are responsible for more than 70,000 maternal deaths and 500,000 fetal deaths worldwide yearly. Although the etiology of preeclampsia is still not fully understood, the main pathophysiological mechanisms believed to be endothelial dysfunction and impaired placental vascularization are mediated by oxidative stress. Aspirin as a preventive therapy for preeclampsia has a mechanism that is not clearly known. Previous studies have shown that there is a relationship between Hepatocyte Nuclear Factor (HNF) as a transcription factor and the mechanism of aspirin in preventing preeclampsia. However, studies that discuss the direct relationship between HNF and aspirin in the prevention of preeclampsia are still limited. **Methods:** This study is an observational study using a cross-sectional design with comparison. This study was conducted on 54 women who met the inclusion criteria where 27 of them took aspirin during pregnancy and 27 others did not take aspirin during pregnancy. Furthermore, this study compared HNF1 $\alpha$  levels, the incidence of preeclampsia, systolic blood pressure, and diastolic blood pressure in pregnant women with risk factors for preeclampsia who received aspirin therapy and did not receive aspirin therapy. **Result:** There was a significant difference in HNF1 $\alpha$  levels in the group receiving aspirin therapy (246.15  $\pm$  270.88) with the control group (128.34  $\pm$  28.08). In addition, the mean blood pressure of the aspirin

group was significantly lower than that of the control group, both systolic (145.22  $\pm$  20.56 VS 156.89  $\pm$  14.51) and diastolic (89.63  $\pm$  8.98 VS 99.41  $\pm$  10.01). Then the incidence of preeclampsia in the aspirin group was significantly lower than in the control group (p0.05). **Conclusion:** Aspirin can increase HNF1 $\alpha$  levels, reduce the incidence of preeclampsia and reduce systolic and diastolic blood pressure in pregnant women with risk factors for preeclampsia

**Keywords:** Aspirin, Preeclampsia, Hepatocyte Nuclear Factor 1 Alpha (HNF1 $\alpha$ )

#### ASSOCIATION OF ENOS POLYMORPHISMS WITH RECURRENT MISCARRIAGES

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**Problem statement:** Alteration of normal NO levels, a possible factor involved in recurrent miscarriages, could be partially explained by eNOS genetic polymorphisms that alter the expression and activity of the protein. It has been shown that polymorphisms -786TC within the regulatory region (rs2070744), and eNOS 4b/a lead to altered expression and activity of the eNOS enzyme and increased risk of miscarriage. To test this hypothesis, we propose to investigate the possible association of the eNOS polymorphisms -786TC (rs2070744), 4b/a with recurrent miscarriages. **Methods:** Peripheral blood samples were collected from 100 women with repeated miscarriages and 100 fertile women, aged 25-40, from which the DNA was isolated. The studied genes were amplified by polymerase chain reaction (PCR). In order to identify the presence of the polymorphism, incubation with restriction enzymes was applied (Restriction Fragment Length Polymorphism) RFLP. MspI enzyme was used for the rs2070744 polymorphism. The products of the enzyme reaction give 140 and 40 bp for the normal allele (T), or 90, 50, and 40 bp for the occurrence of the polymorphism (C). **Results:** eNOS 4b/a polymorphism was confirmed after electrophoresis in agarose: four repeats of the 27-base sequence correspond to 393 bp (allele a) and five repeats of the 27-base sequence bases in 420 bp (b allele). An association was found for rs2070744 and eNOS 4b/a. The TT genotype is associated with an increased probability of miscarriage (P = 0.0445). Furthermore, regarding the eNOS 4b/a polymorphism, it appears that the presence of 4b/a is also associated with recurrent miscarriages (p=0.025). **Conclusion:** The above results demonstrate the possibility of creating a genetic profile related to recurrent miscarriages. Consequently, its use in the context of laboratory tests can help to establish a personalized treatment for women with recurrent miscarriages. The creation of genetic panels related to infertility issues leads to more effective solutions to achieve pregnancy.

**Disclosure of Interest:** None Declared

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## DETECTION OF RS1801260 SNP OF CLOCK GENE IN WOMEN WITH RECURRENT MISCARRIAGES

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**Problem statement:** According to ESHRE, recurrent pregnancy loss (RPL) is defined as the loss of two or more pregnancies before 24 weeks of gestational age, including pregnancy losses both after spontaneous conception and after ART treatments, but excluding ectopic and molar pregnancies. Unfortunately, there is a lack of information and global consensus about the various causes concerning this condition, leaving a 40% of the cases to unknown diagnosis. Clock gene is the main factor of the organism's circadian pacemaker, which is the Clock system. Studies show that the protein of this gene is expressed in the placenta and oocytes, thus making these organs peripheral clocks. An association has also been identified between several single nucleotide polymorphisms (SNPs) of the hClock gene and female infertility, some of which are connected to recurrent pregnancy loss cases. In this study, we examined the possibility that the presence or absence of a specific gene variation in the female genome, could predict fertility problems in the Greek population and may be the cause of RPLs. To that end, we focused our research on the SNP rs1801260 of the hClock and its association with RPL. **Methods:** The study group consisted of 104 women with history of two or more RPLs and 82 women with at least two live births and no history of pathologic pregnancies. After DNA extraction from their blood samples, the chosen SNP rs1801260 was genotyped via Real-Time PCR. **Results:** The results showed no statistically significant difference between the phenotype and the presence of the SNP. Moreover, we could not identify a single heterozygote A/G in our sample. **Conclusion:** Our data suggest that there is a need for further confirmation and mechanistic investigation of our results with a larger study group. Also, further research is of great importance, in order to assess the possible correlation between rs1801260 and the age and psychological profile of women with infertility problems.

**Disclosure of Interest:** None Declared

## ESTIMATED PREVALENCE OF HEMOLYTIC DISEASE OF THE NEWBORN FROM 1996 TO 2010 IN THE UNITED STATES

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**Problem statement:** Rates of hemolytic disease of the newborn (HDN) or fetus and newborn (HDFN) in the United States have not been evaluated over years at the national level since the 1980's. Current estimates based on indirect data sources suggest an incidence of 3-80/100,000 for Rh HDFN and 30-700/100,000 for ABO HDFN. This study aims to estimate the rate of HDN in neonates in the US from 1996 to 2010 based on a nationally representative medical care survey, the National Hospital Discharge Survey. **Methods:** The study focused on neonates with International Classification of Disease-9 codes 773.0-773.5, corresponding to HDN caused by Rh, ABO and other/unknown red cell

antigens. Assessments included rates of neonatal HDN, demographics, and outcomes, which were evaluated over the 15-year timeframe and were compared to those of non-HDN newborns. Neonates requiring exchange transfusion or IVIg or suffering hydrops, late onset of anemia or death were classified as having severe HDN. We utilized weighted frequencies and Chi Square analyses (SAS v9.4). **Results:** A total of 480,230 births were included in this analysis. The rate of all HDN remained stable at 1,700 cases/100,000 newborns. Rh HDN decreased, on average, from 85 to 60 cases/100,000 newborns. Most cases of HDN resulted from ABO incompatibility or other/unknown antigens. The majority of HDN was in white newborns; however, the rate of HDN was higher in black (2.3%) versus white (1.6%) neonates. HDN newborns had longer hospital stays (3 days versus 2 days), were less likely to be routinely discharged (97.99% versus 99.72%) and had higher rates of Caesarean section (30.6% versus 20.9%) compared with healthy newborns. Severe HDN was observed in 5.8-7.5/100,000 newborns. **Conclusion:** The estimated rate of HDN in this study, which utilized a nationally representative database, is consistent with that observed in previous studies. Severe disease and a low rate of Rh HDN persist despite RhIg prophylaxis, highlighting the need for increased neonatal care. Demographic and clinical disparities warrant additional research.

**Disclosures of Interest:** D.Y. is a paid intern at Janssen Pharmaceuticals. M.L.T. and L.E.L. are employees of Janssen Pharmaceuticals. K.J.M. receives research funding from Janssen Pharmaceuticals, Inc.

## GYNECOLOGICAL ONCOLOGY

### LAPARO-ENDOSCOPIC SINGLE SITE SURGERY FOR EARLY ENDOMETRIAL CANCER – A FEASIBLE APPROACH

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**Problem Statement:** Laparo-endoscopic single site (LESS) surgery is a novel technique for benign gynaecological conditions. It has advantages of shorter operative stay, less post-operative pain, better cosmesis, and improved patient satisfaction. However, similar data is limited in endometrial cancer. This study aims to analyse the peri- and post-operative outcomes of LESS surgery for endometrial cancer. **Methods:** This was a retrospective, single-centre study. One gynaecologist trained in minimally invasive surgery performed 70 cases of LESS surgery for endometrial cancer at Singapore General Hospital, Singapore from January 2018 to June 2022. **Results:** All 70 patients underwent total hysterectomy bilateral salpingo-oophorectomy, with 65 (92.9%) and 3 (4.3%) patients also undergoing pelvic and para-aortic lymphadenectomy. A mean of 18 pelvic lymph nodes (range 8-33) were retrieved. The mean operative time was 167.2 minutes, with an average estimated blood loss of 129.4ml. Two patients received blood transfusion intra-operatively. The mean age was 61.1 years old with an average BMI of 23.6kg/m<sup>2</sup>. 44 (62.9%) and 15 (21.4%) patients had pre-operative cancer stages 1A and 1B. None required conversion to multi-port laparoscopy, laparotomy or mini-laparotomy for specimen retrieval. There was one case of inadvertent large bowel serosal injury – repaired intra-operatively – during extensive adhesiolysis due to severe endometriosis and previous open uterine surgery. Post-operatively, 75.7% (53) and 94.3% (66) of patients were ambulant and passing urine independently by post-operative



day (POD) one. The average hospitalization stay was 2.19 days. Two patients (2.9%) were readmitted within 30 days. One patient readmitted for fever of unknown source on POD 14 and treated with antibiotics. Another presented on POD 20 for small bowel obstruction secondary to intra-abdominal lymphocele treated conservatively with antibiotics and albumin. The patients were followed up for 358.1 days on average. No cancer recurrence was reported. One patient passed away 63 days post-operatively of septic shock from COVID19 pneumonia and cholangitis on a background of metasynchronous stage 2A lung adenocarcinoma and stage 3A endometrial carcinosarcoma. **Conclusion:** Patients with early-stage endometrial cancer should be offered LESS surgery. It confers better cosmesis, and reduces post-operative pain compared to conventional laparoscopic surgery without compromising on peri- and post-operative outcomes.

#### ANALYSIS OF RECURRENCE ENDOMETRIAL CANCER AFTER SURGERY IN OUR ENVIRONMENT

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**Problem statement:** The objective of this study is a descriptive analysis of post-surgical recurrences of cancer of endometrium in our environment. **Methods** We retrospectively reviewed all data from all patients diagnosed with recurrence of primary endometrial cancer operated at the Hospital Universitario de Canarias between January 2015 and June 2020. A descriptive analysis of the data was performed. We reclassified all histologies according to the new FIGO 2009 classification. Recurrence-free interval (RFI) was defined as the time interval between the date of surgery staging and the recurrence at histologically or radiologically confirm. **Results:** Between January 2015 and June 2020, 288 patients were operated diagnosed with endometrial cancer, 13 of this patients (4.51%) presented locoregional or systemic recurrence during follow-up. The mean age of patients with tumor recurrence was 67.7 years, with a median of 68. The youngest patient was 53 years old. All the patients had an anatomopathological diagnosis of endometrial cancer type I (endometrioid). The pre-surgical tumor stage (FIGO) established by imaging techniques (US, MRI or both) was, 69.2% (9/13) in stage IA and 30.8% (4/13) in stage IB. All patients underwent hysterectomy with double adnexectomy. Pelvic lymphadenectomy was performed on all patients in stage IB. The mean RFI time was 44.92 months, with the minimum time to recurrence being 7 months and the maximum time of 180 months. We observed 7 vaginal and 6 pelvic or distant recurrences. Colpectomy was performed on all vaginal recurrences, and three of them also underwent adjuvant brachytherapy. Three of the patients who presented distance affectation required intestinal surgery. None of the patients with recurrence of the disease presented lymphovascular invasion in the surgical anatomy piece. **Conclusion:** Although survival of endometrial cancer is good, recurrence of the disease has a poor prognosis. Endometrial cancer recurrence and Disease-free survival (DFS) rates are associated with several factors. The implementation of new prognoses factors such as classification of endometrial cancer based on molecular phenotypes studies can improve the selection of those patients who benefit from adjuvant treatment without increasing the morbidity of those patients who present a low risk.

#### SIGNIFICANCE OF ANTENATAL CORTICOSTEROIDS IN THE LATE PRETERM: A RETROSPECTIVE COMPARATIVE STUDY IN A PRIVATE TERTIARY HOSPITAL IN A DEVELOPING COUNTRY

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**Problem Statement:** Is there a benefit in giving Antenatal Corticosteroids (ACS) in parturients at risk of preterm labor at 34 to 36 6/7 weeks age of gestation? **Methods:** A retrospective comparative study involving 48 mothers was done to describe the real world experience of a private tertiary hospital in a third world country. Parturients in the late preterm (LP) who were and were not given ACS were compared on the basis of neonatal respiratory morbidities such as Respiratory Distress Syndrome, Transient Tachypnea of the Newborn, Need for Surfactant Administration, Need for Mechanical Ventilation, and Need for Oxygen Support. Data collected were analyzed using STATA 17.0. Variables were expressed as frequencies and were compared using Fisher's exact tests. A p-value of 0.05 was considered statistically significant. **Results:** There was no reduction in the occurrence of neonatal respiratory morbidities in those neonates whose mothers received ACS in the LP. **Conclusion:** Treatment with ACS did not appear to reduce neonatal respiratory morbidities in the LP. Currently, there is still conflicting data among professional societies on the administration of ACS in the LP. This paper aims to share the findings of this real world study as it may serve as a spring board in the development and modification of current clinical practice guidelines.

#### GESTATIONAL TROPHOBLASTIC DISEASE METASTASIZED TO THE VAGINA: CASE REPORT

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**Background:** Gestational trophoblastic disease is caused by placenta abnormalities and can metastasize in several places outside the uterus, including the vagina. Its criteria are based on physical examination, laboratory examination, ultrasonography, and histopathology. In addition, the malignancy classification is based on FIGO 2000. Treatment is then carried out according to the malignancy level, and monitoring of results can be carried out based on the  $\beta$ -hCG measurement. **Case illustration:** A 38-year-old multiparous patient with a gestational age of 12 weeks based on HPHT experienced bleeding in the last three hours before admission to the hospital, originating from a 4 x 4 cm vaginal mass detected in the lower 1/3 of the vagina and active bleeding. Ultrasound examination of the whole abdomen showed that the uterus was enlarged and anteflexed with a uterine size of 18x20 cm according to the gestational age of 20 weeks; a multilocular cystic mass appeared in the adnexa area with the impression of a lutein cyst measuring 3x3 cm; a heterogeneous mass appeared in the uterine cavity with multiple anechoic areas giving a Honeycomb appearance; no gestational sac was seen, and the myometrium was intact. Also, the examination of  $\beta$ -HCG levels was found to be more than 1,000,000 mIU/mL. Based on the presence of a vaginal mass suspected of being metastatic from the uterus, a WHO scoring was performed, and a score of 7 was obtained so that it was included in the high-risk category. **Conclusion:** Diagnosis and classification of gestational trophoblastic disease help determine appropriate management, thereby increasing patient treatment success.

**Keywords:** Gestational, malignancy, trophoblast



## AREAS OF URETERAL ANATOMICAL RISK IN WERTHEIM SURGERY

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Injury to the ureter is the most serious and difficult complication of Wertheim surgery and can be unilateral or bilateral. The last 3 cm of the ureter is usually affected. Because most lesions can be diagnosed intraoperatively, a systematic assessment of urinary tract integrity should be part of the surgical plan. The identification of the lesions and their location urges immediate repair. Common sites for ureteral lesions are found under the uterine vessels near the cardinal ligament, under the infundibulopelvic ligament, and in the Wertheim tunnel. Ureteral repair is based on careful mobilization, suturing with absorbable fines (4-0, 5-0) and temporary stenting. Postoperative signs and symptoms of ureteral injury may include unilateral flank pain, fever, prolonged ileus, and accumulation of abdominal or pelvic fluid (urinoma).

**Conclusions:** In pelvic surgery, the surgeon's responsibility is mainly related to ureteral risk, but also to vascular risks.

## KRUKENBERG TUMOR 25 YEARS AFTER RESECTION OF GASTRIC CARCINOMA: A CASE REPORT

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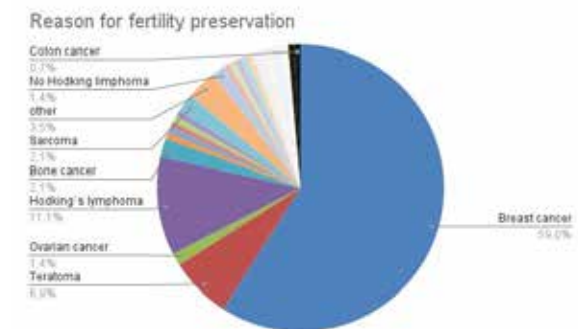
**Problem statement:** Krukenberg tumor is a rare metastatic tumor of the ovary. The source of Krukenberg tumors in the great majority of reported cases is a gastric carcinoma, usually arising in the pylorus. Carcinomas of the large intestine, appendix and breast are the next most common primary sites. The gallbladder, biliary tract, pancreas, cervix and urinary bladder are rare sources of this tumor. The average age of patients with Krukenberg tumor is about 45. One-quarter to almost one-half of the patients are under 40 years old. Only slightly more than 10% of them are over 60 years old. **Methods:** We present a case of a 75 years old caucasian female with solid tumors of the ovary on both sides. The specimens were routinely stained with hematoxylin and eosin. Moreover Periodic acid-Schiff (PAS) were processed. Also they were immunohistochemically stained with primary antibodies Pan-cytokeratin (Roche), cytokeratin 5/6 (Roche), cytokeratin 7 (Roche), cytokeratin 20 (Roche), vimentin (Roche), PD-L1 (DCS Diagnostics) and KI-67 (Roche) were performed. In addition a Her2- Silver in situ hybridisation (Roche) was performed. **Results:** Next to the remains of an origin ovarian stroma a composition of jumbled admixtures of indifferent cells, glands and background stroma was detected. Moreover using PAS staining signet-ring cells were proven. Using Immunohistochemically we detected a positive reaction for Pan-cytokeratin, cytokeratin 7 and a negative reaction for cytokeratin 5/6, cytokeratin 20 and vimentin in the tumor cells. In accordance with the dako score we detected a Her-2 score 0 (negative) and by using the Silver in situ hybridisation we detected a score of 1,13 (not amplified). **Discussion:** We present a case of Krukenberg tumors 25 years after resection of a gastric carcinoma. There is no other tumor and we detect the typically histological and immunohistochemically findings of this rare tumor. This appears to be the case with the longest interval between resection of the primary gastric cancer and the occurrence of Krukenberg tumors in the literature.

## FERTILITY PRESERVATION PROGRAM IN THE PUBLIC HEALTH SYSTEM

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**Problem statement:** The development of vitrification techniques of oocytes and / or embryos began to be implemented in our center in 2008. The increase in the incidence of cancer and other diseases that involve gonadotoxic treatments in young women without children and the increasing survival rates justify these programs. **Methods:** Observational retrospective cohort study including 240 cycles of fertility preservation in 203 women during the years 2008-2022. **Results:** The average age was 29,8±5,4 years. There were only 14 patients who vitrified embryos and 189 vitrified oocytes, 90,7% of all of them were due to cancer (65% were breast cancer).



It has been vitrified 1826 oocytes total (8,99±6,3 per patient) and 19 embryos.

14,3% of the women returned to the unit to use them.

Among the Women who vitrified embryos, 8 of 14 (57,14%) have claim fertility treatments subsequently. A total of 4 children have born by this technique (50% of them). Among the 189 Women who vitrified oocytes only 21 (11,1%) have returned to the unit, and it has been a total of 7 newborns by this technique (33,3% of them).

30 patients got pregnant by other methods (natural or other fertility treatments).

18 patients (10,3%) have passed away.

**Conclusion:** The percentage of Women who ask for reproductive techniques after a fertility preservation is not negligible and it may increase in the next years. Also it stands out the women percentage who get pregnant spontaneously or by other techniques.

There are a lot of this women who are still undergoing cancer treatments or have finished them recently so they haven't tried to get pregnant or even thought about it yet.

## FERTILITY PRESERVATION IN ENDOMETRIAL CANCER

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**Problem statement:** Endometrial cancer (EC), the third most frequent neoplasm among women in western populations, 25% of all cases occur in premenopausal women. The standard results in the loss of fertility. The candidates for conservative management are young women who have well differentiated endometrioid EC with no metastatic disease.



Treatment with oral gestagens is the option of choice in such cases. There is no consensus regarding the ideal agent or optimal dose. **Methods:** We present two case of pregnancy after a EC with medical treatment. **Results:** The first case is a 29-year-old woman who had primary sterility due to severe male factor. Ultrasonographic images were suggestive of endometrial polyps, and hysteroscopy disclosed two endometrial polyps, one of which was atypical. Both were resected. The pathology identified a hyperplastic endometrial polyp and well-differentiated endometrioid adenocarcinoma. Nuclear staging: IA. The patient declined surgery so she started with 160 mg/day megestrol acetate. Follow-up hysteroscopy and biopsy were negative. After 6 months of treatment she underwent an artificial insemination with donor semen. The patient became pregnant after the first cycle. Three months after delivery, hysteroscopy and endometrial biopsy were normal. The patient declined subsequent hysterectomy and has been followed regularly. Eight years later she remains in remission and has become pregnant two more times. The second case is a 32-year-old woman who had primary sterility due to male factor. Ultrasonographic images of the endometrium were suggestive of a polyp. Hysteroscopy disclosed an atypical endometrial polyp which was completely resected, and the pathology identified EC superimposed on a polyp. Nuclear study showed no myometrial invasion. The woman wished to preserve her fertility, and treatment was started with 500 mg/day medroxyprogesterone acetate (MPA). Follow-up studies after 3 and 6 months were negative. In vitro fertilization resulted in a viable pregnancy. She currently remains in complete remission. **Conclusion:** It is possible to preserve fertility in young women with EC, hormonal therapy is effective in most cases but involves incomplete treatment for this type of cancer. Women should be selected carefully and informed about their treatment options, risks, and that assisted reproduction techniques will be needed to ensure conception.

#### FERTILITY PRESERVATION WITH LETROZOL

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**Problem statement:** Set the effect of letrozol over the quantity and quality of the oocytes obtained from women into a cryopreservation fertility program (CFP). **Methods:** Non-experimental research: observational retrospective cohort Study including 112 Women from 18 to 40 years old who were into CFP between 2009-2020 in Virgen de las Nieves University Hospital (Granada, Spain). They were divided in two groups: the first one with 59 Women got letrozol during the ovaries' stimulation and the second one with 53 didn't. SSPS and MedCalc software were use for the statistical analysis of the datas. The study was admitted by CEIM/CEI Granada on 24th February 2021 **Results:** There was statistically significant difference in the medium age being older in the group treated with letrozol ( $28 \pm 5.9$  yo vs.  $32 \pm 4.3$  yo;  $p < 0.001$ ). There were more patients with breast cancer into the letrozol group comparing with other pathologies (OR: 1309;  $p < 0.001$ ). We observed a statistically significant difference in the units of FSH given ( $2155.6 \pm 855.2$  UI vs.  $2523.8 \pm 681.9$  UI;  $p < 0.05$ ) and serum estradiol's concentration ( $576.5 \pm 454$  pg/mL vs  $2129.1 \pm 1296.7$  pg/mL ;  $p < 0.001$ ) the day hCG was administered. Referring to labs variables, we only found statistically significant difference in the FSH dose needed for oocyte obtained ( $307.8 \pm 318.7$  UI vs.  $574.9 \pm 796.6$  UI;  $p < 0.05$ ) and the concentration of serum estradiol for

oocyte obtained ( $66.1 \pm 51.3$  pg/mL vs.  $280.7 \pm 272.8$  pg/mL;  $p < 0,001$ ) being both lower into the letrozol's group. **Conclusion:** Including letrozol during the ovaries' stimulation allows to get around 4 times lower serum estradiol's concentration. It increase the security of this treatment in women with estrogen- dependent cancer. Letrozol doesn't affect the quantity or quality of oocytes obtained. It doesn't increase either the duration of ovaries' stimulation, so it wouldn't cause any delay in case chemotherapy or radiotherapy were needed.

## GYNECOLOGY

### HORMONAL CONTRACEPTION AND UTERINE MYOMA IN OBSTETRICIAN-GYNECOLOGIST PRACTICE

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**Problem statement.** The aim was to study the features of clinical approach of obstetricians-gynecologists to the management of patients with uterine fibroids (UF) interested in hormonal contraception. **Methods.** The method of voluntary anonymous questioning among obstetricians-gynecologists (random sample) about various aspects of the use of combined hormonal contraceptives (CHC) for contraception in women with UF was used. **Results.** There were 298 respondents 25-74 years old ( $41.7 \pm 0.9$  y.o.). Work experience of 63.1% ( $n=188$ ) doctors was 10 years or more. 87.3% ( $n=260$ ) of respondents correctly consider it possible to use any CHC in women with UF, however, only every second (47.7% ( $n=142$ )) classifies UF as the 1st category of CHC eligibility. 29.2% ( $n=87$ ) and 5% ( $n=15$ ) of obstetricians-gynecologists unreasonably considered that an asymptomatic submucous fibroid (F1-2) or dysmenorrhea in women with UF, respectively, are as a contraindication to CHC. Only 45.3% ( $n=135$ ) of the participants were informed about the reduced risk of developing UF when using CHC for 5 or more years. Opinions about the effect of CHC on UF were divided. There were the following erroneous assumptions that CHC: a) cause regression of UF— 26.8% ( $n=80$ ) of doctors; b) in the overwhelming majority of cases, cause the growth of UF—2% ( $n=6$ ); c) significantly increase the risk of new UF—2% ( $n=4$ ). At the same time, 55.4% ( $n=165$ ) of the participants correctly indicated that CHC, as a rule, do not affect the size of the uterine leiomyoma. Every ninth (11.4%;  $n=34$ ) doctor could not answer this question. 6% ( $n=18$ ) doctors recommend taking breaks in the use of CHC in connection with UF. Every 8th participant (12.1% ( $n=36$ )) believes that the presence of UF limits the duration of CHC use for contraception from 1 to 5 years. **Conclusion.** In the analyzed cohort of experienced obstetricians-gynecologists, barriers to the use of CHC for contraception in women with uterine fibroids were identified: fear/refusal to prescribe CHC, current insufficient awareness of reducing the risk of developing UF when using drugs of this group for 5 or more years and the presence of positive non-contraceptive effects in women with symptomatic uterine myoma.



## CHARACTERISTICS OF ENDOMETRIAL RECEPTIVITY IN WOMEN WITH "THIN" AND "ABSOLUTELY THIN" ENDOMETRIUM

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**Problem statement.** The objective was to study the endometrial expression of steroid receptors (estrogen – ER, progesterone – PR) in women with a history of fertility disorders of unclear reasons in the anamnesis with «thin» and «absolutely thin» endometrium in comparison with healthy women. **Methods.** There were three groups of patients (20-40 years old): I – main (n=42) – «thin» (7mmM-echo≥5 mm on the 11-13th day of the cycle according to ultrasound) endometrium, II – comparison group (n=10) – «absolutely thin» (5 mm) endometrium, III control (n=16) – healthy fertile women. Endometrial biopsy (to examine of samples by histological and immunohistochemical (ER, PR expression: scores in the range of 0-300) methods) and peripheral venipuncture (to determine the concentration of estradiol (E2), progesterone (P)) were performed on the 6-8th day after ovulation. **Results.** Women had  $P \geq 16.1$  nmol/l; normoestrogenemia (E2, pmol/l):  $608.8 \pm 42.9$  (I) vs  $537.7 \pm 54.7$  (II) vs  $707.4 \pm 66.1$  (III); similar E2/P (p<0.05 for all parameters). Every fifth woman of I and II groups (21% (n=9 out of 42) and 20% (n=2 out of 10), respectively) had endometrial ER, PR expression, similar to healthy women. 79% (n=41 of 52) and 80% (n=8 of 10) of participants of I and II groups respectively did show significant differences in the expression of ER, PR in the endometrial glands and ER in the endometrial stroma (p<0.05) compared healthy women. There were no differences in the endometrial expression of ER, PR in women in groups with hypoplastic endometrium (p<0.05). The receptor counts were: in the endometrial glands ER  $184.1 \pm 12.8$  (I) vs  $190.0 \pm 27.1$  (II) vs  $113.7 \pm 8.3$  (III); PR  $190.5 \pm 16.9$  (I) vs  $171.0 \pm 42.3$  (II) vs  $28.1 \pm 2.4$  (III); in the endometrial stroma ER –  $161.7 \pm 12.4$  (I) vs  $161.0 \pm 24.1$  (II) vs  $80.6 \pm 8.7$  (III); PR –  $264.8 \pm 5.8$  (I) vs  $273.0 \pm 4.7$  (II) vs  $285.1 \pm 1.8$  (III) (p<0.05 for last indicator). **Conclusion.** M-echo is not an absolute marker of abnormal hormonal-receptor characteristics of the endometrium: the expression of ER and PR in 20% of the women with hypoplastic endometrium was comparable to values in healthy women. Expression of ER, PR in the endometrium in women with «thin» and «absolutely thin» endometrium was comparable (p<0.05).

## A COMPARISON BETWEEN MRI/CT AND PATHOLOGY IN OVARIAN CYST DIAGNOSIS: TERTIARY CENTER EXPERIENCE

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**Problem Statement:** Ovarian cysts represent one of the most common gynecological diseases around the world. Different types of ovarian masses vary in different age groups. We aim to assess patient risk factors, radiological and pathological characteristics of ovarian cyst. **Methods:** This is a retrospective cohort study, comparing two age groups (reproductive and menopausal age groups) in terms of patient risk factors, radiological feature and pathological diagnosis.

The study took place in King Abdulaziz Medical City (KAMC), Riyadh, Saudi Arabia from Jan 2016 – Dec 2021. We included all patients underwent ovarian cystectomy and had radiological evidence. **Results:** A total of 200 patients underwent ovarian cystectomy. The sample was categorized into two groups (Reproductive 170(85%) and Menopause 27(14%). BMI was higher in menopausal women  $34 \pm 7$ . Majority of reproductive age patients were nulliparous, unlike menopausal group. In reproductive age group, only seven patients only had previous cystectomy procedure and thirty-three had ovulation induction trials (OI). Pelvic adnexa torsion showed a significant association with reproductive age group (33(19%), P 0.001). Dermoid cyst accounted for the highest among other causes in reproductive age while mucinous cystadenoma in menopausal age. **Conclusion:** ovarian cyst presentation, diagnosis, and management differ based on age. Younger women had acute presentation unlike older age. Dermoid cyst was the commonest in younger age while mucinous cystadenoma in older age.

## DIFFERENT TREATMENT MODALITIES FOR MANAGEMENT OF CAESAREAN SCAR ECTOPIC PREGNANCY: A SINGLE-CENTER EXPERIENCE

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**Problem statement:** Caesarean scar pregnancy (CSP) remains a very rare form of ectopic pregnancy associated with a serious life-threatening condition. There is no consensus on the treatment modality or a generally accepted guideline in CSP. This study aims to evaluate the outcomes of the different treatment modalities used in CSP treatment at a single center. **Methods:** This is a retrospective case series study that was conducted; all women who diagnosed with CSP between January 2013 and November 2019 in Women's Specialized Hospital, King Fahad Medical City. The clinical characteristics, diagnosis, different treatment modalities, and clinical outcomes were analyzed. **Results:** Twenty-seven cases of CSP were identified during the study period. The mean maternal age was 36.55 years (range, 23-47 years). The gestational age at diagnosis ranged between 5 weeks and 5 days to 13 weeks and 6 days. All diagnoses were made by ultrasound. Fetal heartbeat was present in 10 cases (37.03%). The most commonly used method for first-line treatment was medical treatment. A total of 14 patients (51.85%) were treated with systemic methotrexate (MTX), Three (11.1 %) intra-sac and systemic MTX, and Two (7.4 %) intra-cardiac potassium chloride (KCl) along with systemic MTX, five (18.51%) cases had expectant management, one case initially treated with Laparotomy Wedge resection, and one case treated with Uterine artery embolization (UAE) and systemic MTX. A total of 20 (74.07%) patients were treated successfully with first-line treatment. Seven (25.92%) patients needed additional second line treatment. Among them, only one case had surgical intervention. None of the women in medical treatment group experienced any side effects. Overall, the mean  $\beta$ -hCG resolution time was 60.85 days (range, 28 - 95 days). **Conclusion:** The treatment of CSP should be individualized based on risk factors. Diagnosis and management of CSP need expertise and a multidisciplinary approach to prevent complications. Early diagnosis and management of cesarean scar ectopic pregnancy remains the mainstay for a successful outcome. *The authors have nothing to disclose*



### CHARACTERIZATION OF THE LYMPHOCYTIC POPULATION WITHIN UTERINE CERVIX AND ITS USE FOR EVALUATION OF THE REJECTION OF TRANSPLANTED UTERI

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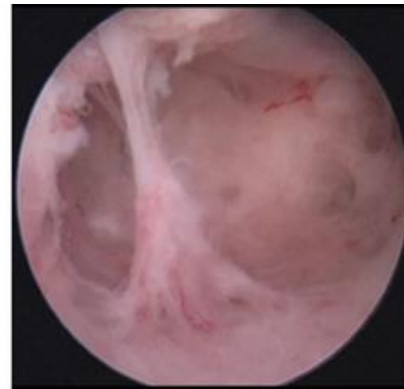
**Problem statement:** Uterus transplantation (UTx) is a causal treatment for absolute uterine factor infertility (AUF1). Assessing rejection signs using a histopathological examination of the ectocervical biopsy from the transplanted uterus is a common practice in all human UTx worldwide to date. The rejection diagnosis is based on the finding of the cellular inflammatory infiltrates within uterine cervix, which are populated mainly by lymphocytes. The prove and characterization of lymphocytes among non-transplanted uteri could contribute to the diagnostic approach and understanding of uterine rejection. **Methods:** This prospective observational study included cervical biopsies of 54 women who underwent hysterectomy for benign reasons. All biopsy samples were assessed histopathologically and immunohistochemically (IHC) using CD45RO, CD8, CD4, CD20 and C4d antibodies. The different lymphocytic populations were noted and their presence was correlated according to the anatomical site and provisional scoring system for subclinical uterine graft rejection. **Results:** Our data showed the presence of lymphocytes within uterine cervix of every patient with non-transplanted uteri. These lymphocytes represent predominantly T-cells with majority of CD8+ Tc-lymphocytes (46 % in ectocervix; 73 % in endocervix), which are also the major parts of the rejection infiltrates. There are as well differences between lymphocytic infiltration within the ectocervical and endocervical tissues - in 93% of endocervical samples, there are numerous CD20+ B lymphocytes, which are detected only in 4 % of the ectocervical samples. **Conclusion:** Non-transplanted uteri contain lymphocytic population, which represents certain overlap with the rejection infiltrates among uterine grafts. Also, there is a striking difference between lymphocytic population in ectocervix and endocervix - the latter contains numerous CD20+ B-cells, which are only rarely detected in ectocervix. This feature could help to distinguish between rejection mimics of the common endocervicitis tissue in cases with inadequate samples of ectocervical biopsy, which are routinely obtained for diagnosis of rejection of uterine grafts.

### ASHERMAN'S SYNDROME: A RECURRING PROBLEM

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**Problem Statement:** A 27 years old, G2P0 (0020) with a history of two spontaneous abortions underwent completion curettage, two hysteroscopic polypectomies and endometrial biopsy due to endometrial polyp. **Methods:** Hysteroscopy was done with intraoperative findings of asymmetric uterine cavity with thin endometrium. A columnar fibrous band was seen at the midcorpus with tiny pockets and cystic spaces noted at the left lateral wall. Fibrous bands were marginally located and partially obliterating both ostia. Transverse fibrous adhesions were lysed inadvertently upon advancement of the scope and the remaining adhesions posteriorly were resected using bipolar angled loop electrode while marginal synechiae were addressed using Collin's loop. Continuous resection was done

until c shaped areas are visible on the lateral walls, tubal ostia seen and presence of blood can be appreciated. Postoperatively, she was given Estradiol valerate 2mg three times for 21 days followed by Medroxyprogesterone acetate 10mg once a day for 10 days.



**Results:** Office hysteroscopy was done on follow-up showed fibrous bands at the isthmus and mid corpus areas while the fundal area and ostia cannot be visualized. The plan is to do hysteroscopic synechiolysis with application of anti-adhesive agent postoperatively. **Conclusion:** Hysteroscopic synechiolysis is the gold standard in treating Asherman syndrome as lysis of adhesions can be done under direct visualization and magnification. However, recurrence of adhesion post surgery is another hurdle that every gynecologist should face as it affects menstrual resumption and reproductive outcomes among patients.

### ABOUT A CASE: PROLAPSED GIANT CERVICAL MYOMA IN A PATIENT WITH TRACHELOCELE

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**Problem:** Uterine myomas are benign tumors that arise from the smooth muscle of the uterus. They are the most frequent type of tumor of the reproductive tract in women. They appear in the 20-50% of women during the reproductive stage. They can be located in all layers of the matrix; classified in submucosal, intramural or subserosal. According to location and size they course asymptomatic or may cause hypermenorrhoea, dyspareunia or symptoms of occupation pelvic. The fibroids of submucosal character, can be complicated by prolapse; causing a dilation of cervix and descending through the cervical canal into the vagina. It is estimated that only 2.5% of all fibroids suffer from this process. While fibroids are typical of reproductive age, organ prolapse pelvic usually appears after menopause. Here is the case of a young woman with coexistence of a prolapsed cervical fibroid and elongation cervical o trachelocele. **Clinic case:** A 39 years old nulliparous patient was referred to the gynecology service of our hospital for presenting iron deficiency anemia secondary to hypermenorrhoea and supuration of purulent material from vagina of recent appearance (Fig 1). During the history, the patient reported long-standing hypermenorrhoea that had required a transfusion of concentrate of red blood cells and sustained oral iron therapy. It was agreed together with the patient to perform a vaginal surgical treatment, scheduled and holistic, with exeresis of the lesion and subsequent anatomical correction of the trachelocele using Manchester- Fothergill surgery. **Conclusion:** vaginal myomectomy should be



considered as the first therapeutic option since. It is an effective and minimally invasive technique. In addition, the vaginal route in comparison to the abdominal, it implies less surgical time, less time of recovery, offers the possibility of performing loco-regional analgesia as an alternative to general anesthesia and avoids abdominal scarrings and its associated risk of future hernias. As it is not a highly urgent surgery, carrying out the treatment in a scheduled and by a team of gynecological surgeons who are experts in the pelvic floor, allowed in our case the simultaneous treatment of myoma and genital prolapse.



#### OUR EXPERIENCE IN OUTPATIENT SURGERY FOR PELVIC ORGAN PROLAPSE

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**Problem:** To know the results of the implementation of the pelvic organ surgery protocol without admission. **Material and methods:** This is a retrospective observational descriptive study, carried out in the gynecology department of the Hospital del Mar, in Barcelona (Spain). The date on which the data was collected in from November 2020 to March 2022. Patients who underwent surgery for pelvic organ prolapse (POP) were included.

The presurgery inclusion criteria in the study were the following:

- Age 70 years
- American Society of anesthesiologist status Classification (ASA): I - II
- Noprior chronic pelvic pain
- Accompaniment at home the night of surgery
- Acceptance of the protocol

And among the post-surgical inclusion criteria were:

- Hemodynamic stability
- Good general condition
- Visual abalog scale (EVA) of pain (1-10) 2

**Results:** The patient included were 73 women, with a mean age of 60,97 years (SD±13,85). The type and number of surgeries were as follows: vaginal hysterectomy 34, anterior colpoplasty 52, rectocele correction 24, enterocele correction 6, Richter colpofixation 19 and Manchester surgery 14. The mean duration of bladder catheterization was 4.73 hours (SD±6,13), that of vaginal packing was 4,22 hours (SD±7,14). Of the total number of patients described 39 (52%) were discharged without hospital admission, and of those who were admitted for at least one night, the reasons were the following:

- Presurgical breaches (70%)

- Pain (9%)
- Bleeding (6%)
- Intolerance to oral intake (6%)
- Criteria of the anesthesiologist (6%)
- Not recorded reason (3%)

**Conclusion:** The data analyzed show that POP surgery without admission is possible in patients in our setting. The hospital stay and the associated economic cost are reduced, with good acceptance by the patient and without repercussion on the post-surgical evolution. More studies with an experimental design are needed to draw more solid conclusions.

#### THE RELATIONSHIP BETWEEN INSULIN RESISTANCE AND MENSTRUAL CYCLE DISORDERS IN OBESE ADOLESCENTS

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**Problem statement:** Menstrual cycle disorders are the main symptom of anovulation, a phenomenon accompanied by decreased ovarian steroid secretion and production. Weight gain and an increase in adipose tissue in obese women, especially in the midsection, can disrupt the balance of steroid hormones such as androgens, estrogens, and sex hormone-binding globulins, which can affect the menstrual cycle in adolescents. The mechanism of obesity that is most often associated with menstrual cycle disorders is insulin resistance. One of the biomarkers of insulin resistance is the Homeostatic Model Assessment of Insulin Resistance (HOMA-IR). On that basis, this study aims to assess the relationship between insulin resistance and menstrual cycle disorders in obese adolescents. **Methods:** This study used a cross-sectional design with comparisons where in this study the researchers compared the levels of HOMA-IR, blood insulin levels and fasting blood sugar in obese adolescent women who had normal menstrual cycles and abnormal menstrual cycles. **Results:** HOMA-IR levels in the group with abnormal menstrual cycles were found to be lower than those in the normal menstrual cycle group, but no significant difference was found. In addition, insulin levels in the abnormal menstrual cycle group were found to be lower but not significant. Then the fasting blood sugar values in the abnormal and normal menstrual cycle groups were reported to tend to be the same and no significant difference was found. **Conclusion:** Insulin resistance, insulin levels and fasting blood sugar have no significant relationship to the menstrual cycle in obese adolescent girls.

#### BREAST TUBULAR ADENOMA: A RARE CASE IN A YOUNG WOMEN

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**PROBLEM STATEMENT:** Tubular adenoma of the breast is one of the most rare benign neoplasms, accounting for only 0.13% to 1.7% of all breast benign tumors. Tubular adenomas are commonly found in young women and rarely found before menarche or after menopause. They are described as palpable, well-circumscribed masses and are commonly diagnosed as fibroadenomas both clinically and radiographically. **CASE REPORT:** A 15-year-old woman presented to our center for evaluation of a mobile, non-tender right lower quadrant breast mass found with self breast



palpation. She denied any associated symptoms. She had no medical problems or previous surgery. Her grandmother had history of breast cancer. She was nulliparous and had menarca at age 12. Physical examination showed a mobile, well-defined 3cm mass in the right lower outer quadrant. There was no nipple discharge, skin changes or axillary lymphadenopathy. Ultrasound showed a well-circumscribed ovoid hypoechoic mass measuring 34 x 29 x 17cm, compatible with fibroadenoma. At surgery a periareolar incision was made and dissection revealed a well-circumscribed lesion similar in appearance to a fibroadenoma. On pathology review, it was described as a mass, measuring 3,9x3x2,5cm with tubular adenoma. **CONCLUSIONS:** Tubular adenoma is a rare breast benign neoplasm of young premenopausal women. It is difficult to diagnose tubular adenoma pre-operatively depending on clinical and radiologic findings. The final diagnosis is based on the histopathologic findings, which is a small amount of fibrous stroma containing proliferative tubular structures. The radiologic aspects are often worrisome and only the histopathologic analysis can achieve the correct definitive diagnosis by excluding all potential differential diagnoses.

#### INTRAVENOUS LEIOMYOMATOSIS: A VAGINAL LEIOMYOMA

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**PROBLEM STATEMENT:** Uterine fibroids (Leiomyomas) are benign tumors with different degrees of smooth muscle differentiation, being the most common form of pelvic tumor in women. There is a wide spectrum of variants of leiomyomas, one of which is intravenous leiomyomatosis. This rare variant is characterized by the benign proliferation of smooth muscle cells in the uterine venous plexus, which may progress, invading the pelvic and abdominal venous drainage system and may even reach the heart and pulmonary arteries. **CASE REPORT:** A 54-year-old woman was observed in a gynecology consultation for abnormal uterine bleeding and vaginal cyst. When performing endovaginal ultrasound, a heterogeneous image was detected with an irregular hyperechoic area, measuring 39x26mm, suggestive of teratoma. At the vaginal level, presence of suburethral nodular formation, with 27x22mm of anechoic content. Analytically, Ca-125 of 5.4 U/ml. A total laparoscopic hysterectomy with bilateral adnexectomy and excision of the vaginal cyst were performed. The pathological anatomy of the specimens removed shows uterine leiomyomas, often with endovascular growth (intravenous leiomyomatosis) with a vaginal leiomyoma; and a mature cystic ovarian teratoma. **CONCLUSION:** Early diagnosis may be difficult because patients may be asymptomatic despite extensive intravenous extension. Though intravenous leiomyomatosis imitates malignant neoplasm regarding its pattern of growth and extension, it must be differentiated histologically from malignant tumors to avoid overtreatment. Since this pathology has a tendency for recurrence, long-term follow-up of patients is recommended.

#### CERVICAL ECTROPION AND RECURRENT POST-COITAL BLEEDING: CO2 LASER TREATMENT

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**Problem statement:** Cervical ectropion is a physiologic condition caused by columnar epithelium migration from the cervical canal into the vaginal portion of the cervix and usually there is no treatment for clinically asymptomatic cervical ectropion. Treatment can be achieved by thermal cauterization (electrocautery), cryosurgery or laser vaporization. The aim of this study is to describe two cases of treatment of recurrent post-coital bleeding with cervical ectropion with CO2 laser. **Methods:** Retrospective study that included two women with recurrent post-coital bleeding with cervical ectropion who underwent laser vaporization. These patients after a cervical ectropion diagnosis were subjected to Pap smear in order to exclude an underlying dysplasia. The patients were subjected to CO2 laser vaporization in a continuous mode. **Results:** Two patients were subjected to continuous wave laser. The exposure time ranged from 1-3 minutes according to size of the ectropion and patient's cooperation. There was no bleeding nor pain intraoperatively. No bleeding post operatively and all with rapid return to the normal activity. After 4 weeks follow up, the findings were slight vaginal discharge. **Conclusions:** Laser therapy with CO2 appears to be effective for treatment of cervical ectropion. It is more precise in the tissue and can reach squamocolumnar junction and destroy the deepest glands. Patients typically present a rapid healing and without complications.

#### APPROACH TO DYSMENORRHEA DIFFERENT THAN PHARMACOLOGICAL TREATMENT

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Dysmenorrhea is the medical term used to refer to the pain associated with the menstrual cycle. These pains are associated with high levels of endometrial prostaglandins and are due to uterine contractions, which, by narrowing the blood vessels that supply the uterus, cause momentary ischemia. To date, it is not possible to attribute a specific cause to these phenomena, therefore the treatment of choice is the pharmacological one, which aims to reduce symptoms. According to the WHO, dysmenorrhea affects up to 81% of women and has been detected in 67-90% of women between the ages of 17 and 24. Despite being an underestimated disorder, even from the patients themselves, it is able to severely interfere with the quality of life of those who suffer from it, so much so as to interfere with school, work and other daily activities. In adolescent girls, for example, a degree of absenteeism due to dysmenorrhea ranging from 14% to 52% was found. Menstrual pain is still considered a taboo in conversations by most women in Italy; this often constitutes an obstacle to an effective diagnosis and to establish an indicated therapeutic approach. Hence our choice to try to define an osteopathic approach based on fascial and structural techniques (HVLA) able to alleviate symptoms, improve the quality of life of patients and reduce the intake of drugs during the menstrual period. The study was conducted on 19 patients, initially selected by questionnaire and corresponding to pre-established criteria. Subsequently, the candidates were subjected to an anamnestic evaluation in order to investigate in more depth the incidence of pain on the biological, psychological and social spheres and were re-evaluated at predefined intervals during the period examined. The results obtained are encouraging; the patients obtained a reduction in the intensity and duration of pain and, consequently, a spontaneous reduction of drugs taken. In the





light of the results obtained, methods and ways have been suggested to continue to deepen the research also on the medium-long term effect.

#### OVARIAN INDEX AND OLIGOMENORRHEA IN WOMEN WITH AUTOIMMUNITY

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**Introduction.** Menstrual irregularities of the oligomenorrhea type may depend on the presence or absence of hormonal or metabolic disorders. Antiovarian antibodies to the ovaries (AOA) can be one of the causes of hormonal disorders and related menstrual disorders. The aim of the study was to assess the functional state of the ovaries in women with oligomenorrhea and to compare the presence of antiovarian antibodies (AOA) with a group of healthy fertile women.

**Material and methods.** 105 patients of reproductive age with oligomenorrhea were examined. Control group consisted of 50 women of childbearing age with an undisturbed rhythm of menstruation. It was calculated the Body-Mass index and was performed ultrasound in all women. LH, FSH, estradiol, total testosterone were detected by immunochemiluminescent method. The concentration of Anti-Müllerian hormone (AMH) and AOA in blood were determined by ELISA method. Statistica software (StatSoft, USA) was used for statistical analysis. **Results.** The average LH level in women with oligomenorrhea was 51.75% higher than the control level ( $p = 0.048$ ), the LH / FSH ratio was higher by 44.28% ( $p = 0.007$ ), and the AMH value was higher by 33.86% ( $p = 0.048$ ). The AOA level in the main group averaged  $6.36 \pm 1.14$  ng / ml, in the control group -  $3.06 \pm 1.16$  ng / ml ( $p = 0.044$ ). In patients with oligomenorrhea, AOA correlated with all studied hormones by a statistically significant relationship, and a significant relationship was determined with the level of LH, AMH and estradiol. In contrast to the main group, in women with a normal menstrual cycle, AOA was correlated with a significant association with FSH, total testosterone, and a weak insignificant association with LH.

**Conclusion:** In women of reproductive age with oligomenorrhea, high levels of LH, AMH, LH / FSH and antiovarian antibodies are determined. Antiovarian antibodies to the ovaries in oligomenorrhea correlate with a direct, noticeable relationship with gonadotropic and steroid hormones. To identify the autoimmune process in patients with oligomenorrhea, it is necessary to determine antiovarian antibodies.

#### THE ROLE OF ANTI-MULLERIAN HORMONE ROLE IN THE FEMALE REPRODUCTIVE SYSTEM

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**Objective:** The present study was designed to assess the role of Anti-Müllerian Hormone (AMH) in pathologies of the female reproductive system. **Method:** Study population consists of 180 women (aged 20-45) with primary and secondary infertility. The study was performed at the Gynecology and Obstetrics Institute, Baku, Azerbaijan. The level of estradiol, FSH, LH, inhibin A, inhibin B, prolactin, androgen and AMH in the blood was measured by ELISA. Data was assessed with SPSS version 21.0 software. The statistical significance of the findings was defined with non-parametric Mann-Whitney U Test. **Results:** Based on the results of the study, women were divided into 2 groups - with normal AMH level and abnormal AMH levels. In the group with abnormal AMH levels, 51

women had lower AMH level - 0.2-1.0 ng/ml, and 36 women had higher AMH level - 7.0-16.0 ng/ml. Sonogram of patients with lower AMH level showed they had less than 4 antral follicles, suggesting poor ovarian reserve. IVF failed for these women. Women with higher AMH level had significant anovulation, amenorrhea, hyperandrogenemia. Sonograms detected polycystic ovary syndrome and premature ovarian failure. AMH levels in 93 healthy women (control group with normal AMH level) correlated with the age. Abnormal AMH levels had no age correlation - lower and higher AMH levels were detected in 20-year and 40-year-olds. **Conclusions:** The study confirmed that AMH level in blood is the primary and the most credible marker for assessing the female reproduction system. A low AMH level signifies that a woman has an ovarian reserve disorder. A higher AMH level may signify complications like polycystic ovary syndrome, premature ovarian failure and others. An AMH level changes before gynecologic pathologies can be clinically detected. Early AMH tests can help timely diagnosing female infertility and contribute to positive treatment outcomes.

#### CONSERVATIVE MANAGEMENT OF SPONTANEOUSLY PERFORATED PYOMETRA: TWO CASES

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Pyometra is the collection of pus in the uterine cavity, and it is known as a rare condition. Spontaneously perforated pyometra (SPP) is very rare. We describe two cases of SPP in elderly women treated with non-invasive treatment. The first case is a 83-year-old woman transferred from local clinic with peritonitis with focal wall defect of uterus on CT. We treated with antibiotics and inotropic in ICU because of her septic shock. After her general condition was recovered, so we had diagnostic laparoscopy. The patient was discharged more than a week antibiotics therapy. The second case is a 85-year-old woman with abdominal pain and diarrhea was diagnosed with SPP and pneumoperitoneum. She improved and was discharged on 15th hospital days only with antibiotics and drainage. The prognosis for SPP is sometimes poor, especially in older women. Its early diagnosis leads to adequate treatment that can reduce the important morbidity and mortality. Minimally invasive intervention might be considered for in such cases.

#### SPONTANEOUS RUPTURE OF PYOMYOMA LEADING TO SEVERE SEPSIS IN A POSTMENOPAUSAL LADY – A CASE REPORT

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**Introduction:** Pyomyomas, also called infectious or suppurative leiomyomas are a rare but serious complication of benign leiomyomas. We report a case of spontaneous perforation of pyomyoma in a postmenopausal lady who presented to us in a state of septic shock. **Case Description:** A 70-year-old, nulliparous, postmenopausal lady with diet-controlled type 2 diabetes, hypertension and hypothyroidism presented to our A and E with sudden onset severe abdominal pain. She had a recent CT scan suggestive of a 10 cms degenerating fibroid in the uterine fundus. On presentation, she was severely hypotensive, needing intravenous fluids and vasopressor support, with normal heart rate and normal temperature. Physical examination revealed tenderness over the entire abdomen with rebound tenderness. Her Hb was 106



g/l with normal inflammatory markers. ABG was suggestive of raised lactates and metabolic acidosis. Procalcitonin was increased to 100 ng/ml. A contrast CT scan revealed a ruptured cystic fibroid with large amount of intraperitoneal free fluid due to degenerated material from the fibroid. She was transferred to ITU, commenced on antibiotics, intubated and an emergency midline laparotomy was performed. Around 2 litres of pyoperitoneum was noted. A perforation was seen at the uterine fundus leaking purulent material. Total hysterectomy with bilateral salpingo-oophorectomy was performed. Histology reported benign findings. She had an uneventful postoperative recovery.



**Discussion:** This case presented as a diagnostic dilemma as initially the symptoms of shock were considered to be secondary to bleeding from fibroid. CT abdomen with contrast helped to exclude any active bleed from the fibroid. The timely intensive care, surgery to remove the source of sepsis and administration of antibiotics helped us save this patient from life-threatening emergency. **Conclusion:** Pyomyoma is a relatively rare condition with only 32 cases reported in non-pregnant women so far. Pathology of pyomyoma in postmenopausal women involves vascular flow insufficiency resulting in infarction followed by superimposed infection. A serious complication of a pyomyoma is its spontaneous rupture, which presents as an acute abdomen with septicaemic shock. In postmenopausal women, the possibility of malignancy should always be considered.

#### RELATIONSHIP BETWEEN TYPE OF HORMONE REPLACEMENT THERAPY AND INCIDENCE OF FRACTURE IN POSTMENOPAUSAL WOMEN

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**Problem statement:** Even though hormone replacement therapy (HRT) is known to prevent fractures, long-term protection effect on various sites are still controversial and some studies showed opposite results. In this study we analyzed the effect of hormone therapy on incidence of spine, radius and femur fracture according to the types, age of commencement, duration of use, and dose of hormones in Korean women. **Methods:** This study was a nested case-control study using National Health Insurance Service database. Among the women aged  $\geq 50$  years with menopause between 2004 and 2007, spine/radius/femur fracture incidence until 2017 was analyzed in 36,446 women using or having used HRT for 1 year and in 36,446 women

who did not used any HRT. Type of HRT and duration were into three categories: estrogen -progesterone therapy (EPT), estrogen only therapy (ET) and tibolone and 1-3, 3-5, and 5 years, respectively. **Results:** EPT significantly lowers the incidence of spine/radius/femur fracture with conventional dose but not with low dose. Tibolone showed significant decrease of spine fracture in age 50-59 when used more than 5 years, decrease of femur fracture in age over 60 when used more than 3 years, however no effect on radius fracture. ET was not as efficient in fracture except it significantly lower the risk of radius fracture in 50-59 age group and femur fracture in total age group when used more than 5 years with Estradiol component. **Conclusion:** For menopausal women, HRT use generally lowered fracture. Effects of hormone on each fractures, however, varies on the type of HRT; ET did not effective spine fracture and EPT only lowered radius fracture, though all HRT lowered fracture femur fracture

#### SPIRIT LONG-TERM EXTENSION (LTE) STUDY: SUSTAINED EFFICACY AND SAFETY OF ONCE-DAILY RELUGOLIX COMBINATION THERAPY (RELUGOLIX-CT) IN WOMEN WITH ENDOMETRIOSIS-ASSOCIATED PAIN OVER TWO YEARS

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**Problem statement:** Endometriosis is mainly characterised by dysmenorrhoea and non-menstrual pelvic pain (NMPP) affecting daily lives. **Methods:** SPIRIT 1&2 were international, Phase 3, replicate, randomised, double-blind, placebo-controlled studies of Relugolix-CT (relugolix 40mg, estradiol 1mg, norethisterone acetate 0.5mg) in premenopausal women with moderate-to-severe endometriosis-associated pain. Women who completed the 24-week pivotal studies were eligible into enrol in an 80-week, open-label, single-arm LTE, representing up to 104 weeks of treatment. All women received once-daily Relugolix-CT. Primary endpoints: proportion of dysmenorrhoea and NMPP responders at Weeks 52 (Wk52) and 104 (Wk104) based on daily Numerical Rating Scale (NRS) scores. Responders were defined as women who achieved a predefined, clinically meaningful reduction from baseline in NRS score and no increase in analgesic use. Secondary efficacy endpoints included change in Endometriosis Health Profile (EHP)-30 pain domain scores, use of opioids/analgesics. Safety endpoints included adverse events and bone mineral density (BMD) percentage change. Outcomes in women continuously treated with Relugolix-CT for 104 weeks are described. **Results:** Of 1261 randomised women in SPIRIT 1&2, 1044 (83.4%) completed the pivotal studies; 802 (76.8%) enrolled in the LTE and 501 (62.5%) completed 104 weeks of treatment. Demographics and baseline clinical characteristics were consistent between LTE and pivotal study populations. Sustained improvement of endometriosis-associated pain was demonstrated with Relugolix-CT through 104 weeks. At Wk52 and Wk104, respectively, the proportion of responders for dysmenorrhoea was 84.8% (both), and 73.3% and 75.8% for NMPP. Least-



square mean change in EHP-30 pain domain score of  $-37.7$  (Wk52) and  $-41.3$  (Wk104) demonstrated sustained improvement in daily functioning and activities. The percentage of women taking opioids in the Relugolix-CT group decreased from 39.4% at baseline to 9.0% at Wk104/end of treatment; 91% of women continuously treated with Relugolix-CT were opioid-free, representing a 77% reduction from baseline. There was a corresponding reduction in overall analgesic use. No new safety signals were observed, and BMD was preserved (lumbar spine overall least-square mean change [baseline to Wk104]:  $-0.45\%$ ) through 104 weeks. **Conclusion:** Through 104 weeks, Relugolix-CT demonstrated sustained efficacy in women with endometriosis-associated pain. BMD was maintained over the extension period.

**Study funding:** Myovant Sciences GmbH.

### AGGRESSIVE ANGIOMYXOMA: A CASE REPORT

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**Introduction:** Aggressive angiomyxoma(AAM) is a rare mesenchymal tumor commonly found in premenopausal women, with the number of cases that have been reported was approximately less than 350. Diagnosis of AAM is not easy to make since its nonspecific clinical and radiological findings. The diagnosis is made after the histopathological examination. Since this tumor carries the aggressive local recurrent feature, the timely diagnosis and management of the disease become very crucial. Herein, we present a case of AAM that was diagnosed in a 46-year-old female with the chief complaint of painless mass protrudes from the birth canal.

**Case:** A 46-year-old female patient P6A0 was referred to our hospital with the provisional diagnosis of cervical cancer. Patient had been complaining of a painless mass coming out through the birth canal since one year ago. Ultrasonography revealed a mixed echogenicity encompassing the fornix with color doppler appearance. Based on history taking, physical examination, and supporting examination, the diagnosis of P6A0 with ectocervical polyp had been established. The patient underwent a cervical polyp removal surgery on the following day. The histopathological examination was performed, revealing aggressive angiomyxoma. **Conclusion:** Aggressive angiomyxoma is a rare mesenchymal tumor commonly found in premenopausal women. Diagnosis of aggressive angiomyxoma is not easy to make since its nonspecific clinical and radiological findings. Diagnosis is usually established postoperatively from the histopathological findings. The treatment approaches may include surgical excision and hormonal therapy. Long term follow-up is mandatory for evaluating recurrence of the cases.

### A RARE CASE OF CAESAREAN SCAR ECTOPIC PREGNANCY: A CASE REPORT

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Caesarean scar ectopic is one of the rarest types of all ectopic pregnancies. It is defined as when a blastocyst implants on a previous caesarean scar. The incidence of caesarean scar ectopic pregnancies has increased due to increase in number of caesarean deliveries. Early diagnosis is crucial as delay can lead to increased maternal morbidity and mortality. Fortunately, the use of first-trimester ultrasound imaging has led to a significant number of these pregnancies being diagnosed and managed early. Here, we highlight the importance of early diagnosis and treatment of caesarean scar ectopic pregnancies. Caesarean section scar ectopic pregnancy is a rare complication of pregnancy, occurring in approximately 1 in 2000 pregnancies. [1,2]. It's incidence is rising in parallel with the increase in primary and repeat caesarean sections. Globally, the incidence of primary caesarean section averages 18.6% of all births.[3]. A scar ectopic pregnancy has also been reported following previous myomectomy, uterine evacuation, previous abnormally adherent placentation, manual removal of placenta, metroplasty and hysteroscopy.[4]. There are two types of scar ectopic pregnancies. Type 1 develops in the myometrium and grows towards the uterine cavity, whereas type 2 progresses exophytically towards the uterine serosa [4]. Both have an ominous prognosis because they may result in spontaneous uterine rupture, haemorrhage and maternal death. There is potential for loss of fertility should massive haemorrhage necessitate a hysterectomy. The usual presentation is with vaginal bleeding and pelvic pain in the first trimester. The investigation of choice is trans-vaginal ultrasound.(TVUS) with colour doppler, which may be combined with a transabdominal scan for a panoramic view. Treatment modalities include expectant, medically with methotrexate or surgically with laparoscopy, hysteroscopy or suction evacuation[2,5]. We report a rare case of gravida 3, para 1 with previous one caesarean delivery diagnosed as caesarean scar ectopic pregnancy with the help of transvaginal ultrasound. Patient underwent suction evacuation under ultrasound guidance and on histopathological examination caesarean scar pregnancy was confirmed. This case report highlights the importance of early pregnancy imaging in high-risk patients to decrease maternal morbidity.

### A MIRROR-IMAGE ARTIFACT MIMICKING HETEROTOPIC PREGNANCY OBSERVED IN TWO DIFFERENT TIME-POINTS: A CASE REPORT

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We report a case of a 25-year-old woman showing two gestational sacs at obstetric ultrasound at 12 weeks of gestation. Thus, diagnosis of heterotopic pregnancy or a double uterus with a twin pregnancy was suspected. Following transvaginal ultrasound and complementary tests, she was diagnosed with a unique pregnancy with a mirror-image artifact. At 17 weeks of gestation, ultrasound examination showed, again, an specular image of a second embryo, being a mirror-image artifact. Although these artifacts are a very rare phenomenon, 7 cases of obstetric mirror-image artifacts have been previously published. Nevertheless, no cases of mirror-image artifacts at two different time-points in the same patient have been previously reported.

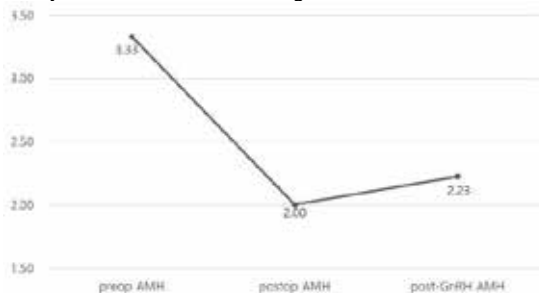


### THE EFFECT OF OVARIAN CYSTECTOMY AND GONADOTROPIN-RELEASING HORMONE AGONIST ADMINISTRATION ON OVARIAN RESERVE IN PATIENTS WITH OVARIAN ENDOMETRIOMA

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**Problem statement:** The purpose is to observe the effect of ovarian cystectomy and gonadotropin-releasing hormone agonist (GnRHa) administration on the AMH level of patients with endometriosis of the ovary. **Method:** A retrospective chart review of patients with ovarian endometrioma was done at one center in Korea from August 2016 to December 2020. All of these patients had undergone laparoscopic ovarian cystectomy with biopsy result of endometriosis of the ovary. In addition, these patients were treated with GnRHa. The AMH levels were measured three times before, after the operation, and after GnRHa administration (2 times to 6 times). The variables were analyzed using linear regression. A value of  $p < 0.05$  were considered significant. **Results:** A total of 109 women were included in this study. The mean age of the patients was 31.14 years old. The mean value of body mass index was 21.52kg/m<sup>2</sup>. The mean level of AMH which was measured before the operation was 3.33, with a minimum value of 0.08 and the maximum value of 10.4, and the standard deviation was 2.23. The mean values of AMH in postoperative and post-GnRHa administration were 2.00, and 2.23, respectively. The AMH levels were significantly decreased after the operation and increased after GnRH agonist administration. **Conclusion:** In conclusion, decreased ovarian function after the operation could be partially recovered after GnRH agonist administration.



The authors declare that there is no conflict of interest.

### EFFECTS OF INTRODUCING MIFEPRISTONE TO TERMINATION OF PREGNANCY SERVICE IN A TERTIARY INSTITUTION IN SINGAPORE

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**Problem statement:** Mifepristone, an anti-progestin, is a newly registered drug in Singapore. When used with prostaglandin, it has been proven to be safe and effective in terminating a pregnancy. Before the use of mifepristone in August 2019, the Termination of Pregnancy (TOP) service in a tertiary institution in Singapore uses surgical vacuum curettage for women with pregnancies between nine to 12 weeks of gestation and prostaglandin-only medical treatment for pregnancies between 14 to 24 weeks of gestation. This study aims to look at the effects of introducing mifepristone to the Termination of Pregnancy (TOP) service in this institution.

**Methods:** This is a retrospective study conducted between November 2018 and February 2020. The number of TOP by surgical and medical methods and waiting time to get TOP

during the study period were collected. A cohort study was also performed for women who underwent TOP between 14 to 24 weeks gestation. First group used the prostaglandin-only regimen for TOP between November 2018 and February 2019 (before introduction of mifepristone); second group used the combined regimen of mifepristone and prostaglandin method for TOP between November 2019 and February 2020. **Results:** Since the implementation of combined medical TOP regimen, there is an increase in the number of medical TOP performed and a drop in the waiting time to get an abortion (from mean of 14 days to six days) in this institution. This reflects women's acceptability and preference of this method. For women with pregnancy of 14 to 24 weeks' gestation, significant reduction in the median induction to abortion interval (from 834 minutes to 416 minutes), median number of prostaglandin doses (from three doses to two doses), median length of hospital stay (from three days to two days) and percentage of women requiring surgical evacuation of uterus for incomplete abortion (from 41.6% to 14.1%) were observed. **Conclusion:** The combined mifepristone and prostaglandin regimen is not only an effective method for TOP, its use has also resulted in a more efficient TOP service in this institution.

### PREVALENCE OF PCOS IN CENTRAL INDIA: A QUESTIONNAIRE BASED STUDY

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**Problem statement:** Polycystic ovary syndrome (PCOS) is one of the major endocrinopathy among reproductive-aged women. It affects 4%–20% of women of reproductive age. Its prevalence is increasing due modern life style and unhealthy food habits. The objectives of the present study were to estimate the prevalence of PCOS in college going students.

**Methods:** Present study was conducted to assess prevalence of PCOS in our community. A survey was conducted using self-assessment standardized questionnaire to diagnose PCOS. It has questions related to demography, menstrual history, body hair growth, body weight, height, Knowledge and awareness about PCOS. **Results:** Total 235 girls were included in the study. out of 235girls, 48 girls reported complain of irregular menstruation. Mean BMI of students who has complain of irregular menstruation was 20.99 +4.98 and students with regular menstruation was 20.94+4.51. There was no significant difference in the BMI of both the groups. 48 students had problem of hirsutism. 18 students reported hirsutism and oligomenorrhea both. 15 girls were confirmed cases of PCOS already diagnosed by physician. 75% students reported that they had knowledge about PCOS at the time of survey but 58 students were having no knowledge about PCOS. 40% girls reported that either themselves or close family member had PCOS. 95 girls reported that they got information about PCOS via internet. **Conclusion:** Prevalence of PCOS in Indian adolescents is 9.13%. In our survey prevalence was 7.6 % This may be because we only included patients with oligomenorrhea and clinical hyperandrogenism. If we will do Biochemical investigations and USG the no of patients may increase more than 10%. High risk students will be called for hormonal assay and abdominal USG to confirm PCOS diagnosis under ICMR funded project.



## BMSCS AND PECTIN-BASED E2-LOADED MICROCAPSULES WITH INJECTABLE PECTIN-PLURONIC® F-127 SCAFFOLDS FOR MOUSE ENDOMETRIAL REGENERATION APPLICATION

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**Problem statement:** Uterine endometrium is a highly dynamic tissue which consists of a basal layer and a functional layer. Bone marrow-derived mesenchymal stem cells (BMSCs) have been recognized as new candidates for the treatment of serious endometrial injuries. However, due to the local microenvironment of damaged endometrium, transplantation of BMSCs yielded disappointing results with respect to survival, attachment, differentiation, and proliferation. **Methods:** Pectin-Pluronic® F-127 scaffolds were fabricated. E2 was encapsulated into the W/O/W microspheres to construct pectin-based E2-loaded microcapsules (E2 MPs). The BMSCs/E2 MPs/scaffolds system was then injected into the uterine cavity of mouse endometrial injury model. Furthermore, the mechanism of E2 in promoting the repair of endometrial injury was also investigated. **Result:** Pectin-Pluronic® F-127 scaffolds could provide three-dimensional architecture for the attachment, growth, and migration of BMSCs. E2 MPs has the potential to serve as a long-term reliable source of E2 for endometrial regeneration. At four weeks after transplantation, it was demonstrated that the system increased proliferative abilities of uterine endometrial cells, facilitated microvasculature regeneration, and restored the ability of endometrium to receive an embryo, suggesting that the BMSCs/E2 MPs/scaffolds system is a promising treatment option for endometrial regeneration. Exosomes are critical paracrine mediators that act as biochemical cues to direct stem cell differentiation. In this study, it was found that the expression of endometrial epithelial cells (EECs) markers was up-regulated in BMSCs treated by exosomes secreted from endometrial stromal cells (ESCs-Exos). Exosomes derived from E2-stimulated ESCs further promoted the expression level of EECs markers in BMSCs, suggesting exosomes released from ESCs by E2 stimulation could enhance the differentiation efficiency of BMSCs. **Conclusion:** The BMSCs/E2 MPs/scaffolds therapeutic strategy may be beneficial in the treatment of severely damaged endometrium. Exosomes derived from ESCs play paracrine roles in endometrial regeneration stimulated by E2, potentially modulating the differentiation of BMSCs.

## HPV

### HIGH-GRADE SQUAMOUS INTRAEPITHELIAL LESION(HSIL) IN FORNIX OF VAGINAL CUFF

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**Problem statement:** The diagnosis of vaginal intraepithelial neoplasia (VaIN) has steadily increased in recent decades,

given the increased awareness of the diagnosis, higher screening rate, and the liberal use of colposcopy. Most VaIN3 are associated with high-risk HPV strains, with HPV 16 or 18 being more frequent. 1,2 As HPV-associated lesions are often multifocal and multicentric, up to 50-90% of patients with VaIN had or have neoplasia or carcinoma of the cervix, vulva, anus or perianal region.3-5 **Methods:** Retrospective review of a clinical case. **Results:** 52 years, personal history of mellitus diabetes, 2G2P, history of total hysterectomy at age 36 for in situ cervical carcinoma in situ. In 2020, hospital referral for VaIN2 on biopsy in the context of colposcopic evaluation for LSIL finding on cytology. The lesion was excised and LASER vaporized, and the histological examination confirmed VaIN3. In the 1st year of follow-up, HSIL cytology with positive HPV 16 test. At colposcopy, a dense acetowhite lesion with relief in the left fornix of the vaginal vault requiring the use of an endocervical retractor to visualize the lesion. A new excision was performed in the operating room followed by LASER vaporization, confirming HSIL. At follow up appointment, favorable evolution with adequate healing. **Conclusion:** Persistent HPV infection may be associated with lesions in the lower genital tract, which may affect the cervix, vagina or vulva. In this clinical case, despite the patient having been hysterectomized at early age, given the persistence of the infection, vaginal lesions developed. Vaginoscopy may represent a challenge due to technical difficulty in the gynecological examination and observation of the lesions, making the proper diagnosis and treatment difficult, namely its excision.

## HUMAN PAPILLOMAVIRUSES INFECTION AND NURSING APPROACHES

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Human papillomaviruses (HPV), which are among sexually transmitted infections, are an important health problem that threatens public health. Low-risk HPV types cause genital warts, while high-risk HPV types can cause cancer of the vagina, vulva, anus, penis and cervix. Nurses have important roles and responsibilities in controlling HPV infection, which can cause serious health problems. Nurses should improve themselves and follow up-to-date information to prevent HPV, which will be the basis for stopping cervical cancer. Nurses should determine the risk groups and transmission routes for HPV infection and keep HPV under control. Nurses should reach out to risk groups such as adolescents, pregnant women and sex workers and provide necessary information and guidance to prevent and fight HPV. Nurses should provide education to the society on issues such as prevention of HPV infection, risky behaviors, use of barrier methods, vaccination, participation in routine cervical cancer screenings. A significant reduction in the prevalence of HPV infections, cervical lesions, and cervical malignancies in young women has been observed with the administration of HPV vaccines. The introduction of participation in routine cervical cancer screening has significantly reduced cervical cancer-related morbidity and mortality in developed countries. Nurses should teach women about risk factors to encourage them to get tested for cervical cancer. She should also teach about other factors that can increase the risk of cervical cancer, such as smoking, having an immunosuppressive disease, using birth control pills for more than five years, giving birth to three or more children. Based on cervical



cancer screening test results, patients should be referred to another healthcare facility for further evaluation and management if necessary. In addition, nurses should disinfect other materials such as endovaginal ultrasound probe and speculum used in gynecological examination to prevent HPV transmission. It is very important for nurses to guide patients by educating the society in order to prevent HPV and to intervene before important health problems such as cervical cancer occur.

**THE ENDOCERVIX CONIZATION RESULTS AS PREDICTIVE FACTOR FOR PERSISTENT HPV INFECTION WHEN ENDOCERVIX IS INVOLVED**

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**Problem statement:** After conization for cervical intraepithelial neoplasia, the endocervical cone margin involvement was considered as one of the risk factors for future residual or recurrent lesions. This retrospective cohort study was performed to evaluate the additional endocervix conization results as predictive factors. **Methods:** Between January 2018 and December 2021, 420 women underwent conization for pathologically proven Cervical Intraepithelial Neoplasia (CIN) I, II, III, Carcinoma In Situ (CIS), Atypical Glandular Cell (AGC) or Adenocarcinoma In Situ (AIS) in one institution. We included the patients for whom endocervix specimens were reported as involved and high risk Human Papillomavirus (HPV) was detected preoperatively. The exclusion criteria were as follows: (1) No further endocervical resection; (2) invasive cancer or AIS identified; (3) all clear resection margins of endocervical tissue; and (4) no post-operative evaluation within 6 months of procedure. The chi-square test and independent-samples t test were used to find possible predictive factors for HPV infection persisting. **Results:** We included 48 patients with the following endocervical conization results: 8 (16.7%) patients with CIN I, 7 (14.6%) with CIN II, 21 (43.8%) with CIN III, and 12 (25.0%) with CIS. The mean age (±standard deviation) was 52.3 ± 15.1 years (range 25-88). The mean endocervical conization depth was 4.71 ± 1.96 mm (range 2.0-10.0). After conization, high risk HPV infection was detected as follows: same HPV types in 26 (54.2%) patients; other HPV types or no infection in 22 (45.8%). We evaluated the relationship between the severity of endocervical disease and persistent HPV infection, and there was no statistical significance (p=0.887). Only patient age was identified as an independent predictor of persistent HPV infection after endocervix conization involvement (mean age in HPV persistence group 56.3 ± 14.1 years, no persistence 47.6 ± 15.2, p = 0.045). Endocervix conization depth was not significant for HPV persistence (p = 0.706). **Conclusion:** When the endocervical lesions are confirmed by pathologic results, the HPV infection can be expected to persist as the patient gets older. The depth or disease severity of additional endocervical conization tissue was not significantly correlated with HPV persistence 3 to 6 months after conization.

All authors declare that they have no conflict of interest.

Endocervix conization lesion	Post-conization HPV infection		p-Value
	Persistent (N=26)	Not persistent (N=22)	
CIN1	4 (50.0%)	4 (50.0%)	0.887
CIN2, CIN3	16 (57.1%)	12 (42.8%)	
CIS	6 (50.0%)	6 (50.0%)	

Variable	Post-conization HPV infection		p-Value
	Persistent (N=26)	Not persistent (N=22)	
Age (years)	56.3 ± 14.1	47.6 ± 15.2	0.045
Endocervix conization depth (mm)	4.81 ± 2.02	4.59 ± 1.92	0.706

**OTHER**

**COVID-19 PANDEMIC FROM THE PERSPECTIVE OF A REPRODUCTION UNIT OF A TERTIARY REFERRAL HOSPITAL IN MADRID, SPAIN**

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**Problem statement:** Coronavirus disease 2019 (COVID-19) has had a substantial case fatality rate and a huge impact on society and healthcare. On March 13th 2020, the Spanish government declared a national state of alarm. Most of the Spanish National Health System resources were employed to control the pandemic and non-urgent medical procedures such as assisted reproduction treatments were cancelled, except fertility preservation treatments (FPT) for oncological patients. **Methods:** After activity interruption, the prioritization criteria for selecting patients and reducing in person assistance recommended by European and American Fertility Associations were followed to resume IVF cycles. Telephone medical appointments to reduce waiting list were used. In this retrospective cross-sectional study, the IVF activity of a reproduction unit in a tertiary referral hospital in Spain from January 2019 to December 2021 is analyzed in order to evaluate how pandemic affected IVF activity and results. **Results:** In March 2020, the programmed activity was interrupted: 191 IVF cycles, 25 hysteroscopies and 4 multicenter studies were stopped. The last follicular puncture after the state of alarm took place on March 18th, 2020 and all embryo transfer delayed by freezing the embryos. Only 1 FPC cycle in a patient with breast cancer was completed. On June 8th, the activity of the reproduction unit was carefully resumed. In 2020, 365 IVF cycles were performed on 329 patients, 236 less than in 2019 and 252 less than in 2021. The pregnancy rate of fresh IVF cycles in 2019 was of 32,4% (195/601) and in 2020 of 25,2% (92/365). The pregnancy rate of embryo-transfer cycles in 2019 consisted of 24,1% (81/336) and in 2020 of 35,4% (68/192). Telephone medical appointments reduced waiting time for first visits from 6 months to 4 months and to start a new IVF cycle from 5 months to 1-2 months. **Conclusion:** Our experience shows that appropriate hospital re-organization, adaptation of safety protocols, has had an impact in returning to normal activity after the COVID-19 pandemic. The number of cycles and pregnancy rates in IVF worsened as a result of working conditions and patient selection.



## CERVICAL PREGNANCY

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**Introduction:** Ectopic pregnancy (CP) refers to implantation that occurs outside the uterine cavity. The incidence of ectopic pregnancy is 1-2% in the general population and 2-5% in the population who have a history of ART (Assisted Reproductive Technology). As many as 98% of cases of ectopic pregnancy are in the fallopian tube. Non-tubal ectopic pregnancy is a rare occurrence, about 7-10% of all cases of ectopic pregnancy. There are six main locations for non-tubal ectopic pregnancy, namely cervical, interstitial, cornual, ovarian, cesarean, and abdominal scars. (1) Cervical ectopic pregnancies account for less than 1% of all pregnancies, with an estimated incidence of one in 2500 to one in 18,000. In the past, CP was associated with significant bleeding and was treated with hysterectomy.(2) This increase in ultrasonic resolution and early detection of pregnancy has led to the development of more conservative treatments that try to limit morbidity and preserve fertility. Given the rarity of the condition, even today, the most effective methods of management are being investigated.(2) **Case :** A 35-year-old woman came with the chief complaint of lower abdominal pain accompanied by bleeding from the birth canal. From the anamnesis, it was known that the patient had a history of using IUD contraception for 4 years. The patient had a history of two Caesarean Section operations and a history of diagnostic curettage. The patient also had 2 spontaneous pregnancies with uncomplicated vaginal deliveries. Physical examination of the uterine fundus was not palpable. On speculum examination, it was found that there was a mass coming out of the external uterine os and bleeding. Transabdominal ultrasound revealed an anteflexed uterus, mixed echoic images in the lower uterine segment measuring 38.8mm. The results of the plano test were positive. Routine blood tests are within normal limits. The differential diagnosis of cervical pregnancy is incipient abortion and Geburt's myoma. Curettage was performed under General Anesthesia. After urinary catheterization, in the lithotomy position, an anterior and posterior Sims speculum was inserted, a reddish mass was obtained from the external uterine ostium. The implantation of the gestational sac was freed from the cervix with abortiforceps and a curettage was performed. Control bleeding by sewing the cervix anterior (12 o'clock), lateral (3 o'clock direction) and posterior (6 o'clock direction) with the figure of eight technique on the placental bed and placing an intracervical band tampon. **Control:** Cervical ectopic pregnancies account for less than 1% of all pregnancies, with an estimated incidence of one in 2500 to one in 18,000. Common risk factors for cervical pregnancy are dilatation and curettage, previous caesarean section and in vitro fertilization. The diagnosis of cervical pregnancy is made by transabdominal and/or transvaginal ultrasound. Management of cervical pregnancy in the form of uterine artery ligation, uterine artery embolization, tamponade, curettage, amniotic feticide.

**Keyword:** Cervical ectopic pregnancies

## INDICATION OF CROSS-BINDING OF ANTIBODIES AGAINST OVARIAN CYST MUCIN(S) TO THYROID STIMULATING HORMONE

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**Problem statement:** There is increasing evidence that ovarian cysts are often associated with an impaired thyroid function and hypothyroidism. Also, it is well known that ovarian cyst fluid is a rich source of certain types of mucins called "blood group antigens". Recently we have shown, that anti-ABO commercial antibody ab212418 (Abcam), that is produced against mucins isolated from ovarian cysts and reacts with determinants of chain A and H type 3 (Gal1-3GalNAc-R) and 4 (Gal1-3GalNAc-R), cross-binds to human chorionic gonadotropin (hCG) and its subunits through the side sugar chains. hCG and thyroid stimulating hormone (TSH) are members of the same family, heterodimers with a shared  $\alpha$ -chain and hormone specific  $\beta$  chain. Here we are asking the question if antibody against the ovarian cyst mucins can cross-bind to TSH. **Methods:** We chose four commercial antibodies that are produced in response to ovarian cyst mucins and assessed their binding to TSH by a standard enzyme-linked immunosorbent assay (ELISA). These antibodies were specific for the following antigens: SPM522 (Novus biologicals) - to Lewis A Blood Group Antigen; ab212418 (Abcam) to Blood Group Antigen Precursor; ab3968 (Abcam) - to Lewis B Blood Group Antigen; SPM297 (Novus biologicals) - to MUC5AC mucin. All antibodies were used in serial dilutions from 2  $\mu$ g/ml to 62.5 ng/ml in PBS. **Results:** ab212418 (Abcam) monoclonal antibody which binds to carbohydrate determinant - Gal1-3GalNAc-R, showed significant cross-binding to TSH with optical density (OD)- 1,12134 $\pm$ 0,064632 reflecting the binding at 2 $\mu$ g/ml concentration of the antibody (control OD - 0,016667 $\pm$ 0,00153). The other tested antibodies did not show appreciable cross-binding (figure 1).



Figure 1. Binding of different f monoclonal antibodies: ab212418 (Abcam), SPM522 (Novus Biologicals), ab3968 (Abcam), SPM297 (Novus Biologicals) and IgG1 (Life technologies) as a isotope control to TSH assessed by ELISA. Our data is the first indication that Gal1-3GalNAc – a structural component of mucins released by an ovarian cyst, generates an antibody that cross-binds to TSH. **Conclusion:** Further studies on the identification of antibody responses in associated with ovarian cyst and thyroid gland dysfunction are important for understanding the mechanisms involved.

## THE EFFECTIVENESS OF KINESIOTHERAPY INVOLVING PELVIC BIOMECHANICS WITH USE OF A SWISS BALL DURING LABOR ON MATERNAL AND NEONATAL OUTCOMES: A PRAGMATIC RANDOMIZED CLINICAL TRIAL

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**Problem statement:** does kinesiotherapy involving pelvic biomechanics with use of a Swiss ball reduce the first stage of labor compared to routine care? **Methods:** a pragmatic randomized clinical trial with investigators blinded to allocation and outcome evaluation in two hundred women in active labor. The intervention group performed kinesiotherapy involving pelvic biomechanics with Swiss ball, including active exercises of pelvic anteversion and retroversion, lateral pelvic tilts and circular hip movements according to individual obstetric evaluation (fetal station and position, cervical dilatation and the presence of early pushing urge). The control group received the standard care provided at the institution. The primary endpoint was the duration of the first stage of labor and the secondary endpoints were intensity of pain, duration of the second stage of labor, mode of delivery, use of analgesia and oxytocin, vulvar or cervical swelling, fatigue, anxiety, maternal satisfaction and satisfaction of the accompanying person, Apgar scores, neonatal resuscitation and admission to a neonatal intensive care unit. **Results:** There was a reduction of 179.19 minutes in the duration of the first stage of labor with the protocol (95%CI: 195.72 - 212.66; p0.001) and of 18 minutes in the duration of the second stage of labor (95%CI: 12.54 - 25.22; p0.001). Pain was evaluated at 30, 60 and 90 minutes and decreased by 2.66, 2.10 and 1.96 points, respectively. The intervention protocol increased the likelihood of vaginal delivery by 19% (RR: 1.19; 95%CI: 1.04 - 1.36; NNT=7 [32-4]; p=0.019) and reduced the risk of a cesarean section by 54% (RR: 0.46; 95%CI: 0.25 - 0.86; NNT=7 [4-32]; p=0.019) and the risk of vulvar swelling by 79% (RR=0.21; 95%CI: 0.06 - 0.72; NNT=99 [31-5]; p=0.011). Fatigue decreased 18.30 points and anxiety 9.13 points. There was no difference between the others maternal and neonatal endpoints. **Conclusion:** the protocol reduced the duration of the first and second stages of labor, increased the likelihood of vaginal delivery, reduced the risk of cesarean section and vulvar swelling, and decreased pain intensity, fatigue and maternal anxiety. Others maternal and neonatal endpoints were unchanged. **Disclosure of interest:** The authors report no conflict of interest.

#### EPIDEMIOLOGICAL PROFILE AND FREQUENCY OF DEPRESSIVE AND ANXIETY SYMPTOMS IN PATIENTS WITH GESTATIONAL TROPHOBLASTIC DISEASE FOLLOWED AT THE REFERENCE CENTER OF PERNAMBUCO, BRAZIL: A CROSS-SECTIONAL STUDY

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**Problem statement:** Emotional disorders can affect women with Gestational Trophoblastic Disease (GTD). This study aims to describe the epidemiological profile and determine the frequency of depressive and anxiety symptoms in patients with GTD followed up as an outpatient at the Hospital das Clínicas of the Federal University of Pernambuco (HC-UFPE), Brazil. **Methods:** An observational, descriptive, cross-sectional study was performed at HC-UFPE between August 2020 and August 2021 including 155 medical records. To assess symptoms of anxiety and depression, the Hospital

Anxiety and Depression Scale (HADS) was applied to 64 patients, by telephone, three months after the diagnosis of the disease. **Results:** Regarding the epidemiological profile, 46.1% of the patients were between 15 and 25 years old, 60% declared themselves to be brown, 62.2% were unemployed and 63.4% single. As obstetric aspects, 59.5% had a history of one miscarriage and a median of 2 previous pregnancies (IQR = 2). Vaginal bleeding was reported by 37.4% of patients. Diagnosis was made up to 12 weeks of gestation in 68.1% of the sample, with a mean pre-empty beta HCG dosage of 655,674.25 mIU/ml. Curettage was performed in 59.5% cases and complications occurred in 10.3%. A complete hydatidiform mole was observed in 23.2% of the sample. Probable cases of anxiety (HADS<sub>A</sub>≥8) and depression (HADS<sub>D</sub>≥8) were observed in, respectively, 53.1% (n=34) and 43.8% (n=28) of patients with GTD. Moderate symptoms of anxiety (HADS<sub>A</sub> 11-14; 95% CI 0.65-1.27) and depression (HADS<sub>D</sub> 11-14; 95% CI 0.56-1.27) were identified in, respectively, 21.9% (n=14) and 17.19% (n=11) of the patients. Severe symptoms of anxiety (HADS<sub>A</sub> 15-21; 95% CI 0.54-1.37) and depression (HADS<sub>D</sub> 15-21; 95% CI 0.49-1.80) were observed in, respectively, 12.5% (n=8) and 4.7% (n=3) of the patients. **Conclusion:** The sample with GTD was predominantly mixed-race, had previous pregnancies and a history of abortion. Curettage was the most used uterine evacuation method and complications were rare. The frequency of symptoms suggestive of anxiety and depression three months after diagnosis was considered high, indicating the need for interventions in the mental health area during treatment for disease remission. **Disclosure of interest:** The authors report no conflict of interest.

#### AWARENESS AND PERCEPTIONS OF FILIPINO OBSTETRICIAN-GYNECOLOGISTS ON FERTILITY PRESERVATION

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**Background:** The demand for fertility preservation has increased substantially over the past decade as more women wish to delay childbearing and with improved survival outcomes of various medical conditions. This study evaluated the awareness and perception of Filipino obstetrician-gynecologists on fertility preservation. **Methods:** A cross-sectional survey was conducted among diplomates and fellows of the Philippine Obstetrical and Gynecological Society from September to December 2021. A self-administered questionnaire with 24 items was distributed online. Univariate descriptive statistics were reported as mean for continuous variables and frequency with percentage for categorical variables. Differences in responses were tested using the chi-square test. **Results:** A total of 215 respondents completed the survey. Majority of the respondents were female, general obstetrician-gynecologists practicing in the National Capital Region. There is an overall positive perception of fertility preservation, with 98.60% agreeing that discussions about childbearing intentions should be initiated. Most of the participants (98.60%) were aware of fertility preservation but had varying levels of awareness of the different techniques. Fifty-nine percent of the respondents were unaware of regulations on fertility preservation. Setting up dedicated centers for fertility preservation and offering it as a public service were viewed as necessary by the respondents. **Conclusions:** This study underscores the need to increase awareness of fertility preservation techniques among Filipino obstetrician-gynecologists. Meeting the need for comprehensive guidelines and centers is essential to





promote fertility preservation in the country. Efficient referral systems and multidisciplinary approaches should be established for holistic care.

## GLOBAL RESEARCH TRENDS ON PARTOGRAPH: A BIBLIOMETRIC ANALYSIS

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**Problem statement:** The coverage of delivery in health facilities has been increased but maternal mortality is still high due to problems that can be prevented by early detection of potential problems. Early detection can be done if the partograph is done in real-time and health workers are able to interpret the clinical data obtained through the partograph correctly. The gap between a high number of maternal and neonatal deaths that can be prevented by using partograph has encouraged researchers to conduct investigations on the evolutionary nuances and emerging trends using bibliometric analysis. **Methods:** Scopus database was searched for the following keywords: "Partograph" and "Partogram". Retrieved articles were analyzed to obtain standard bibliometric indicators. The analysis technique was carried out by two strategies: performance analysis using Scopus "analyze" function and network analysis using VOSviewer and the NVivo software. **Results:** a total of 414 articles were retrieved between 1965 to 2022. Based on performance analysis, the most cited articles were related to spontaneous labour patterns and pregnancy outcomes, skills of birth attendants, and management of labour. Most countries that produce articles were found in the United States, Ethiopia, and the United Kingdom. Network analysis found that partograph or partogram has a close link to health care quality, health care personnel, delivery, and health care facility. The research trends were growing and started from spontaneous delivery, dystocia, and maternal mortality. Recently, researchers expanded their view to involving Partograph or Partogram as a part of healthcare service quality improvement. Based on Pearson Correlation Coefficient, the strongest value was found between Partograph – Birth (0,81). Whereas strong correlation value was found between Partograph – Mortality (0,78) and Partogram - Health Care Workers Perspectives (0,76). **Conclusions:** Emerging trends in Partograph or Partogram research field are still growing and have not yet matured. The research field on Partograph or Partogram topic has been dominated by labour monitoring and its relation to maternal and fetus health outcomes. Recently, Partograph or Partogram research field has a new focus on a few themes such as labour management quality, healthcare quality improvement, and patient safety.

## AWARENESS AND ATTITUDES OF PREGNANT WOMEN REGARDING SMOKING IN PREGNANCY AT A DISTRICT GENERAL HOSPITAL IN THE U.K

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**Problem statement:** This was an anonymous questionnaire-based survey conducted at Barnsley Hospital amongst women smoking in pregnancy. The aim of the study was to identify their awareness regarding risks with smoking in pregnancy, their willingness to quit smoking and the factors that could influence their attempts at quitting. **Methods:** Sixty-six women smoking in pregnancy were surveyed using a pre-structured questionnaire, before their engagement with

maternity Stop Smoking Services (SSS) to assess their baseline knowledge. **Results:** Three fourths of the women surveyed had low educational attainment, nearly half were either unemployed or stay at home parents, more than two-thirds lived with smokers and one-third had mental health problems. 88% women were long time smokers with a moderate level of tobacco dependence. Nearly half of them had a previous failed attempt at quitting smoking. Most women (77%) were aware that smoking is harmful for their baby, but could not elaborate the various risks involved. Nearly two-thirds of the women were highly inclined towards quitting smoking in current pregnancy with the rationality of having a healthy baby. **Conclusions:** Barnsley district of UK has a high prevalence of smoking at the time of delivery of 13.6%, much above the national prevalence of 9.1%. Though most of our pregnant women were aware that smoking is harmful for the baby and were inclined towards quitting it, multiple factors like poor educational attainment, unemployment, living with family members who smoke, mental health concerns, previous failed attempts at quitting and prolonged tobacco dependence were understood to be responsible for them to carry on with it in pregnancy. Maternity SSS at Barnsley offer continuous behavioural support along with NRT and generous amounts of financial incentives to help pregnant women and their partners quit smoking. The results of the survey were shared with all healthcare professionals involved in the care of pregnant women and they were given information on how to support women to achieve smoking cessation in pregnancy. This will help us to improve the quit rate in pregnancy, give a smoke free start to every baby and reduce the physical and financial burden on antenatal services.

## LABOR INDUCTION VERSUS EXPECTANT MANAGEMENT IN LOW-RISK WOMEN AFTER 39 WEEKS OF GESTATION

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**Problem statement:** We compared the maternal and neonatal outcomes between labor induction versus expectant management in women with non-complicated singleton pregnancy after 39 weeks of gestation. **Methods:** This was a retrospective cohort study of 338 women with non-complicated singleton pregnancy at 38–39 weeks of gestation in a single institution between 2018 and 2021. Pregnant women with multiple gestation, complicated pregnancy, who delivered before 39 weeks of gestation, and who had indications for cesarean section that would normally preclude trial of labor were excluded. Pregnant women were counselled for benefit and risk of induction of labor and its timing. Eligible subjects were categorized into two groups by the choice of each subject: early planned induction of labor at 39–40 weeks of gestation (labor induction group) and expectant management until 41 weeks of gestation (expectancy group). Pregnancy outcomes and neonatal outcomes were reviewed. **Results:** Maternal characteristics including age, body mass index, estimated fetal weight, and cervical state were similar in the two groups, but the proportion of multipara was significantly higher in the labor induction group than the expectancy group. The rate of labor induction was significantly higher in the labor induction group compared to the expectancy group (78.7% vs. 31.4%, P<0.005) and the mean gestational age at delivery was significantly earlier in the labor induction group than the expectancy group, as expected. Pregnancy outcomes including instrumental delivery,



emergency cesarean section, pre- and post-operative hemoglobin levels, postpartum hemorrhage, and operative wound complications were comparable between the two groups. Neonatal outcomes were comparable between the two groups, except for a higher rate of neonatal intensive care unit (NICU) admission in the labor induction group compared to the expectancy group. **Conclusion:** In non-complicated singleton pregnancy, early planned induction of labor at 39–40 weeks of gestation did not improve or worsen pregnancy outcome than expectant management, but was associated with a higher rate of NICU admission of neonates.

#### ASSOCIATIONS BETWEEN PREGNANCY RISK FACTORS AND AUTISM SPECTRUM DISORDER

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**PROBLEM STATEMENT:** Autism Spectrum Disorder (ASD) is a group of disorders characterized by difficulties in communication, behavior and a limited, stereotypical as well as repetitive patterns of interests and activities. The exact causes of ASD are difficult to detect due to etiological and clinical heterogeneity. However, studies show association between children who develop ASD and pregnancy risk factors (RF). **METHODS:** A retrospective analysis was conducted. The sample consisted of 133 ASD patients registered in Lithuanian University of Health Sciences (LUHS) Kaunas Clinics database in 2015-2020. The following selection criteria were applied: 1. Elimination of duplicates (e.g.: ASD patient who visited LUHS Kaunas Clinics in 2017 and 2018 is included in the study only once). 2. If several different ASD diagnoses are made for one person, the diagnosis that is the latest is included in the study. 3. A history of perinatal period has been comprehensively described. Statistical analysis was performed using IBM SPSS 22.0 software. The study was authorized by the Ethics Committee of the LUHS. **RESULTS:** 44,4% of participants (n=133) had at least one pregnancy RF. The most common pregnancy RF was preterm birth (14,3%), the least frequent RFs were threatened preterm birth (0,8%), thyrotoxicosis during pregnancy (0,8%), intrauterine growth restriction (0,8%) and spontaneous abortion after childbirth of the newborn with ASD (0,8%). The other observed RF were: pregnancy hypertension – 1,5%, threatened miscarriage – 3,0%, maternal inflammatory disease (flu, viral infection, etc.) – 3,0%, gestational diabetes – 3,8%, preeclampsia – 6,0% and spontaneous abortion before childbirth of the newborn with ASD – 6,0%. Correlations between pregnancy RF and neurophysiological development during infancy have also been analysed. The analysed data was without statistical significance (p<0,05), however, when pregnancy RF were identified, impaired speech and motor development in infancy was observed more frequently compared to the group with no determined risk during pregnancy (respectively 12,3% and 9,3%). **CONCLUSION:** Preterm birth, spontaneous abortion before childbirth of the newborn with ASD and preeclampsia are the most common ASD RFs during pregnancy. When ASD is associated with pregnancy RFs, impairment of neurophysiological development during neonatal and infancy period is more frequently observed (p<0,05)

#### DO DANISH WOMEN USE THE WEBSITES OF THE RESIDENT SPECIALISTS IN GYNAECOLOGY? IS THIS INFLUENCED BY THE SOCIO-ECONOMIC STATUS OF WOMEN?

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**Problem statement:** In recent years, both political decision-makers and patient representatives have increasingly demanded that medical practices have an internet presence. Denmark is a country with an above-average level of digitalisation by European standards and an above-average number of users of digital services. It is not known to what extent Danish patients used the websites of the Resident Specialists in Gynaecology (RSG) to obtain information before consultation at the RSG and whether the offer was found to be useful. The present study examined whether the socio-economic status of the patients influences this. **Methods:** Cross-sectional questionnaire survey. Patients were recruited in the practices of six participating RSG. **Results:** Of the 3,962 women who received a questionnaire, 2,917 (73.6%) replied. Almost half of the patients (1428 (49.2%)) visited the RSG's homepage before the visit. Of these, 929 (63.1%) found the information useful for the visit to the RSG. It was found that especially women from higher educational backgrounds (e.g., Master/Doctor OR 2.35 (95% CI 1.6 – 3.28)) and not-working women (OR 1.46 (95% CI 1.18 – 1.80)) looked for information on the websites. Retired women searched to a lesser extent for information on the websites (OR 0.52 (95% CI 0.39 – 0.70)). Singles, not-working women and women with the highest income found the information beneficial to prepare their visit at the RSG (OR 1.43 (95% CI 1.10 – 1.86), OR 1.36 (95% CI 1.01 – 1.83) and OR 1.48 (95% CI 1.07 – 2.05), respectively). **Conclusion:** Even in a country with a relatively high affinity of the population to use digital services, less than half of the women use the websites of the Resident Specialists in Gynaecology to prepare their visit to these doctors.

#### ALTERATION OF INSULIN AND GLUCOSE IN CORD BLOOD ACCORDING TO THE DELIVERY MODE

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**Problem statement:** Through the process of labor and delivery, the pregnant women are affected by various hormones which results in changes in glucose and insulin concentrations. The altered maternal glucose level is transmitted to the fetus through the cord blood, which affects fetal glycogenesis and glycolysis. These alterations may result to affect the initial glucose level of the newborn. Therefore, the purpose of this study is to examine the differences in cord blood glucose and insulin concentrations according to delivery methods. **Methods:** In this study, maternity and fetus scheduled for delivery after 36 weeks were enrolled and a total 89 patients participated (11 of vaginal delivery and 78 of cesarean delivery). Concentration of glucose and insulin were quantified from cord blood collected immediately after delivery. Independent T-test was used to compare glucose and insulin concentrations between the groups. **Results:** The average of the glucose concentration in vaginal delivery was 129.1 (±47.18) mg/dl and in cesarean delivery was 73.8 (± 13.2) mg/dl. The average of the insulin concentration in vaginal delivery 5.13 (±3.04) uIU/ml and in cesarean delivery was 11.34 (±6.01) uIU/mL.



The concentration of glucose and insulin are statistical significance between vaginal delivery and cesarean delivery. **Conclusion:** It is consider that the concentration of maternal and fetal glucose increase under stressful conditions such as labor, and it would be further promoted through a decrease secretion of insulin in fetus.

### SCOPING REVIEW: ACHIEVEMENT OF DECISION-TO-DELIVERY INTERVAL IN SECTIO CAESARIA CATEGORY 1 AND FACTORS AFFECTING IT DURING THE PANDEMIC

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**Problem Statement:** The Covid-19 pandemic has changed the surgical practice system in hospitals. This study aims to review the Decision to Delivery Interval in category 1 cesarean section during a pandemic. **Methods:** Search literature using electronic databases such as Pubmed, ScienceDirect, and GoogleScholar using the keywords "Coronavirus", "Covid-19", "nCov-2019", "SARS-CoV-2", "Pandemic", "Surgical", "Surgery", "Emergency Surgery", "Sectio Caesarean Category 1", "Emergency Caesarean Section", "Decision to Delivery Interval", "DDI". These keywords are used alone or are a combination of two or more keywords. The articles used are articles that are relevant to any study design published from December 2019 to April 2022. **Results:** There are 21 articles reviewed in this study. From the articles obtained, there is information about the achievement of DDI 30 minutes which is influenced by adjustments to infection prevention protocols, pre-operative preparation, transfer time, operating time, availability and experience of specialist doctors, and the use of types of anesthesia. **Conclusion:** Changes in the surgical service protocol hindered the achievement of DDI 30 minutes in category 1 cesarean section. Pre-operative preparation was the obstacle that most affected DDI.

### LACK OF ATHLETE-SPECIFIC INFORMATION ON REPRODUCTIVE HEALTH AND FAMILY PLANNING MAY HINDER CHILDBEARING PROSPECTS OF PROFESSIONAL SPORTS WOMEN

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**Problem statement:** Female participation in sport at an elite level is on the rise. The peak of a female athlete's career often overlaps with the childbearing years which can result in athletes deferring plans to start a family to optimise their peak performance years. However, both increased age at childbearing and intense exercise at high frequencies and durations are associated with subfertility and infertility. In spite of this, there is a lack of education and awareness in both the athletic and wider communities of the extent to which reproductive health can be affected by intense physical exercise and the knock-on effects it may have on childbearing potential. **Methods:** A survey assessing reproductive health and family planning knowledge in athletes was disseminated to high-performance female athletes. **Results:** Nineteen high-performance athletes who were fully or partially employed and/or sponsored in their discipline responded to the survey. Only one respondent currently has children, 52.6% expressed an interest in having a family, 26.3% are unsure if they want a

family and the remainder declined to answer. 47.3% intend to pause or leave their career to begin a family. However, 84.2% of athletes report never having received information about where to seek specialist career advice on family planning or reproductive health and 78.9% are not aware of where to seek advice tailored to their career as athletes. **Conclusion:** Delaying childbearing till after the conclusion of a female athlete's career is a reproductive gamble, potentially leading to involuntary childlessness. However, the availability of athlete-specific reproductive health advice is lacking. Continued research in pregnancy and reproductive health in high-performance athletes is needed to ensure equal childbearing opportunities for those who chose this career path.

### PREVALENCE AND DETERMINANTS OF LONG-ACTING REVERSIBLE CONTRACEPTION (LARC) INITIATION AMONG TEENAGE MOTHERS IN A TERTIARY HOSPITAL

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**Problem:** According to the WHO, about 16 million girls ages 15-19 give birth each year. In the Philippines, 600 live births a day are registered under teenage mothers. At Mariano Marcos Memorial Hospital and Medical Center, 12% of all obstetric admissions yearly are teenagers. The American College of Obstetricians and Gynecologists (ACOG) recommends Long-Acting Reversible Contraception (LARCs), in the form of intrauterine device (IUD) and progestin subdermal implant (PSI) as pregnancy prevention options for young mothers. This objectives of the study are to identify the prevalence and determinants of long-acting reversible contraception (LARC) initiation among teenage mothers in MMMH&MC. **Methods:** Prospective observational study: A self-administered questionnaire are given to respondents wherein they will rank determinants involved in their selection of a contraceptive method on a scale of 1-4 (1 being the most important and 4 the least important). **Results:** A total of 162 teenage mothers participated in the study. Majority of the respondents were ages 17-18 years old, enrolled up to high school, single, unemployed and primiparas. 87% of all teenage mothers admitted at MMMH-MC from December 2020 to December 2021 used long-active reversible contraception. Ranked from most (1) to least (4) important, the respondents considered 1) Effectivity, 2) Long Duration, 3) Family Influence, 4) Peer Influence as their determinants for initiating LARC method. **Conclusion:** The high effectiveness and long duration of LARC were the primary reasons for initiation while the least factors they considered were that of peer and family influence.

### SOCIODEMOGRAPHIC FACTORS AND TYPE OF DELIVERIES IN OBSTETRICS PATIENTS WITH COVID-19 AT PROF. DR. R. D. KANDOU HOSPITAL

**Michelle Rachel Toemandoek<sup>1</sup>, Joice Sondakh<sup>1,2</sup>**

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<sup>2</sup>Department of Obstetrics and Gynecology, Prof. Dr. R. D. Kandou General Hospital, Manado, Indonesia

**Problem Statement:** COVID-19, a disease that firstly arose in 2019, impose a challenge for a normal ensuing of antenatal care and deliveries among obstetrics patients as it may cause transmission of the disease. This study aims to investigate the sociodemographic factors and type of deliveries amongst obstetrics patients with COVID-19 at Prof. Dr. R.D. Kandou Hospital. **Method:** This is a cross-sectional study taken from medical records of obstetrics COVID-19 patients in Prof. Dr.



R.D. Kandou General Hospital between 1 January 2020 until 31 December 2021. **Results:** From the sociodemographic factors the most common age group is 25-29 (28%), that lives out of town (65%), with the occupation of housewife/unemployed/student (75%), and most are high school graduates (60%). The antenatal care that is mostly frequented are OB/GYN services (42%), with 1-3 visits (35%), and using caesarean section (31%). **Conclusion:** The results show of a sociodemographic population that has a sufficient potential for good health care utilisation. While a good proportion of well antenatal care practice has been observed. **Keywords:** Sociodemographic factors; type of deliveries; Obstetrics; COVID-19

**Acknowledgements:**

The authors would like to acknowledge the valuable input and support from the doctors, and paramedics from the Department of Obstetrics and Gynecology, Faculty of Medicine Sam Ratulangi University - Prof. R. D. Kandou Hospital Manado.

**Financial Disclosure:** None to declare.

**Conflict of Interest:** None to declare.

**Author Contributions:** All authors were involved in the conception and editing of the manuscript. All authors were also involved in the clinical care of the patient.

**Data Availability:** The authors declare that data supporting the findings of this study are available within the article.

**CLINICAL AND SOCIODEMOGRAPHIC PROFILE OF PREGNANT WOMEN AND PUERPERAS WITH HYPERTENSIVE DISORDERS ADMITTED FOR CONFIRMED SARS-COV-2 INFECTION IN REFERENCE MATERNITIES IN NORTHEASTERN BRAZIL**

Leila Katz<sup>1</sup>, Anna Catharina Carneiro Da Cunha<sup>2</sup>, Thaise Villarim Oliveira<sup>2</sup>, Mayara Biasi<sup>2</sup>, Raissa Lemos<sup>3</sup>, Antonio Guerra<sup>3</sup>, Luiza Guerra<sup>3</sup>, Antonio Fragoso<sup>3</sup>, Manoel Luiz Ferreira Junior<sup>3</sup>, Maria Zilda Lacerda<sup>3</sup>, Marina Amorim Albuquerque<sup>4</sup>, Lucas Felix Marinho Neves<sup>4</sup>, Yasmin Dantas Pereira<sup>4</sup>, Arthur Ferreira Cerqueira Amorim<sup>4</sup>, Maria Claudia de Lima Silva Lira<sup>5</sup>, **Melania Maria Ramos Amorim<sup>2</sup>**

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**Problem statement:** This study aimed to describe the clinical and sociodemographic profile of pregnant and postpartum women with COVID-19 superimposed on hypertensive disorders in eight reference centers in northeastern Brazil.

**Method:** An ambidirectional cohort descriptive study was carried out, as part of the anchor project "Clinical and laboratory predictors of COVID-19 progression and maternal and perinatal outcomes in infected pregnant women/puerperal women in reference centers in the states of Pernambuco and Paraiba", previously approved by ethics committee. Pregnant women and postpartum women with any hypertensive disorders and a diagnosis of Covid-19 confirmed by real-time polymerase chain reaction (RT-PCR), admitted between April and October 2020, in eight maternity hospitals in northeastern Brazil were eligible. **Results:** A total of 130 women met the eligibility criteria. Pre-eclampsia was present in 6.1%, eclampsia was the diagnosis in 5.3% of cases and HELLP syndrome was present in 13.0% of patients. Severe acute respiratory syndrome (SARS) was present in 37.3% of cases and mechanical ventilation was required in 12.2% of patients. The average length of stay was 7 days. Two patients progressed to abortion and 79.6% were submitted to a

Cesarean section. Admission to Intensive Care Unit (ICU) was required in 33.6% of women. Within the sample there were 22 cases of near miss and six maternal deaths. **Conclusion:** Obstetric outcomes were severe, highlighting the high rate of cesarean section, near miss and maternal death due to COVID-19.

**Keywords:** pregnancy; COVID-19; maternal mortality; hypertension.

**A CASE OF PRIMARY AMENORRHEA AND FEMALE DELAYED PUBERTY IN AMBIGUOUS GENITALIA, DISORDERS OF SEX DEVELOPMENT(DSD), XX, CONGENITAL ADRENAL HYPERPLASIA**

**Dian Zilfira<sup>1</sup>**, Tita Husnitamadid<sup>1</sup>

Obstetric and Gynecology, Padjadjaran University, Reproductive Endocrinology and Infertility Division, Bandung, Indonesia

**Problem:** Disorders of sex development are medical condition in which the development of chromosomal, gonadal or anatomic sex varies from normal. Congenital adrenal Hyperplasia is a genetic disorder caused by enzyme defects in adrenal cortisol. Mostly of cases result from a deficiency in the enzyme 21hydroxylase. The more serious "salt-wasting" variety is characterized by severe deficiencies of both cortisol and aldosterone, resulting in salt wasting and dehydration, and virilization. In "simple virilizing", there is sufficient glucocorticoid and mineralocorticoid, but excess androgen production in utero results in masculinization of the external genitalia. The least severe "nonclassical" does not become apparent until adolescence, abnormally high androgen levels cause hirsutism and menstrual irregularities. Herein, we reported a 18 years old female, diagnosed with, ambiguous genitalia 46 XX karyotype (post clitoromegaly reconstruction) with congenital adrenal hyperplasia. She present a clitoromegaly at 2 years old and the penile-like organ become larger for about 1.5 cm long before the reconstruction procedures. **Method:** Since it was an elevated of 17-OH progesterone serum : 165,70 ng/dl, her karyotype was 46, XX. She also complain about the abundant hair over her face ( beard and moustache) as sign of excess of androgen.

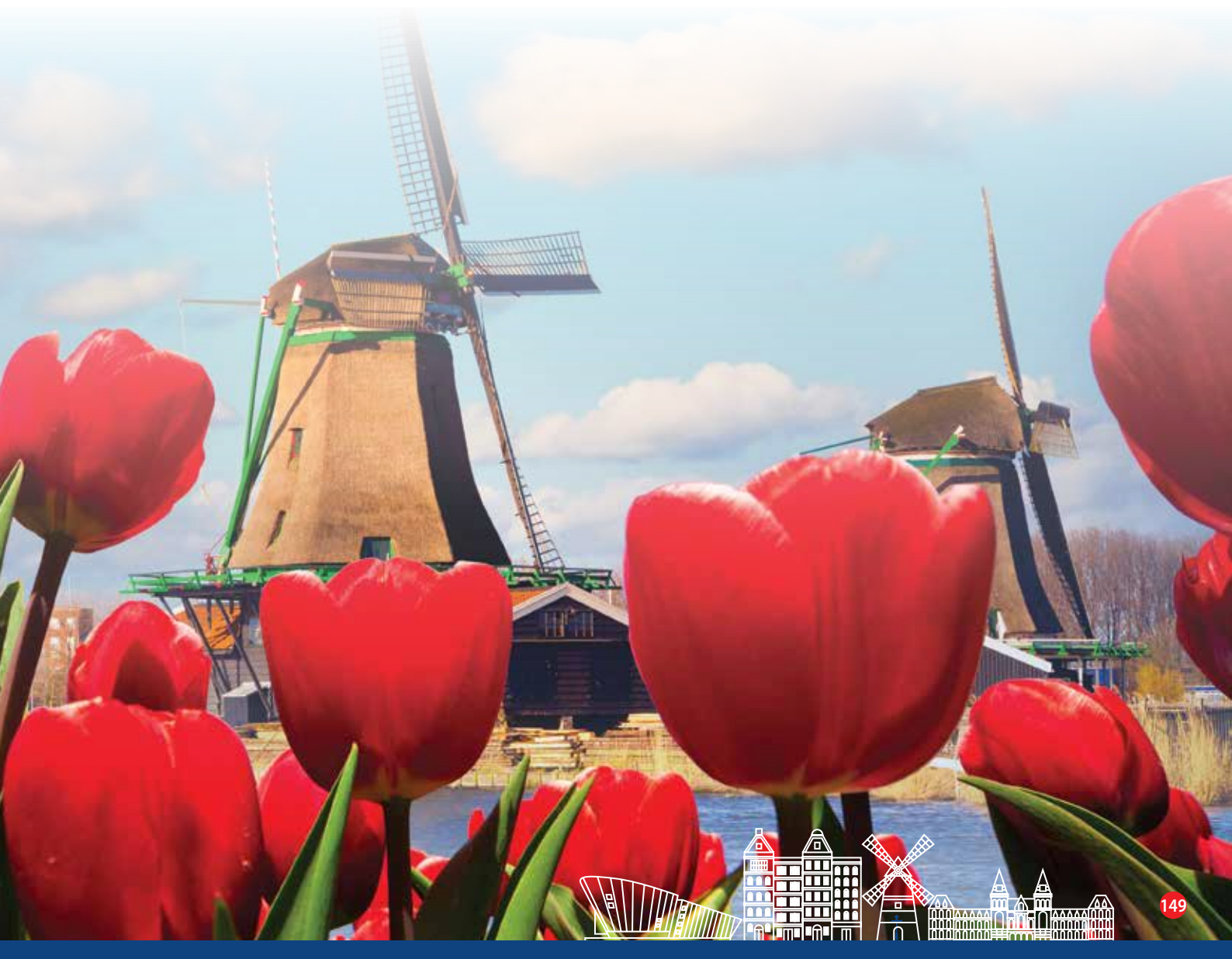
**Result:** At the present admission, the surgical treatment was completed with the removal of erectile tissue. postoperative period the wound healed well with good cosmetic results. This patient consume hydrocortison routinely 5 mgs daily since 1 year ago. Her current problems was primary amenorrhea and no sign of breast development ( Tanner 2). Our management now is continue her replacement steroid, hidrocoortison in order to allow the breast enlargement and also to achieve menstrual regularities. **Conclusion:** Primary amenorrhea and female delayed puberty with absent of breast development can be a clinical manifestation of a congenital adrenal hyperplasia. Androgen excess without treatment will not allow the estradiol biosynthesis. We suggest the early diagnosis and prompt treatment in order to prevent this such complication for the better outcome.





# *Industry*

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# COGI Laser Course

November 24<sup>th</sup> 2022

14.00 – 17.00, Hall B

Amsterdam, Netherlands

Postillion Hotel & Convention Centre Amsterdam

The 30<sup>th</sup> World Congress on Controversies  
in Obstetrics, Gynecology & Infertility

## Vaginal Erbium and Neodymium Laser for Women's Health

### Course Program:

0. Introduction by Program Coordinator  
14:00 -14:05 (Speaker: Zdenko Vizintin)
01. Overview of Laser Technology for Gynecology  
14:05 -14:20 (Speaker: Zdenko Vizintin)
- PART I – Genitourinary Syndrome of Menopause (GSM)**
02. Non-ablative Erbium Laser for GSM with Special Attention to Breast Cancer Patients and its Effects on Sexual Satisfaction  
14:20 -14:35 (Speaker: Dr. Marco Gambacciani)
03. Laser Treatment of Superficial Dyspareunia  
14:35 -14:50 (Speaker: Dr. Marco Gambacciani)
04. Q&A of Part I  
14:50 -14:55 (Moderators: Dr. Marco Gambacciani, Zdenko Vizintin)
- PART II – Stress Urinary Incontinence (SUI)**
05. Non-ablative Erbium Laser for SUI - Overview of Clinical Evidence  
14:55 -15:10 (Speaker: Zdenko Vizintin)
06. VEL for SUI – Our Experiences with Combined Intra-vaginal Plus Intra-urethral Treatment  
15:10 -15:25 (Speaker: Dr. Aleksandra Novakov-Mikic)
07. Q&A of Part II  
15:25 -15:30 (Moderators: Dr. Marco Gambacciani, Zdenko Vizintin)

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## PART III – Other Emerging Laser Applications for Women's Health

08. Nd:YAG Laser in Gynecology  
15:30 -15:45 (Speaker: Dr. Neza Koron)
09. Laser Treatment of Vaginal Laxity and POP  
15:45 -15:55 (Speaker: Zdenko Vizintin)
10. Intrauterine Non-ablative Erbium Laser for Improvement of ART Cryoprotocols  
15:55 -16:10 (Speaker: Dr. Olga Pustotina)
11. Other Laser Applications in Gynecology  
16:10 -16:25 (Speaker: Zdenko Vizintin)
12. Q&A of Part III  
16:25 -16:30 (Moderators: Dr. Marco Gambacciani, Zdenko Vizintin)

## PART IV - Test

12. End-of-Course Test  
16:30 -16:45

### Short Course Description:

Course participants will learn the basic principles of using lasers in a variety of non-surgical and surgical procedures within the fields of minimally invasive gynecology.

The entire course constitutes of twelve topics divided into four parts. In Part I the use of FotonaSmooth Erbium laser systems for Stress Urinary Incontinence will be discussed. The second part is dedicated to laser treatment of Genitourinary Syndrome of Menopause, 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 have to complete an End-of-Course Test.

Upon completing the End-of-Course Test, the participants will receive the Course Certificate.

# Industry Symposia

THURSDAY, NOVEMBER 24, 2022

17:40-18:40

HALL A

## CURRENT CONTROVERSIES IN OVARIAN STIMULATION FOR IVF

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<b>Chairperson</b>	<b>Bart Fauser, Netherlands</b>
17:40-18:10	<b>To change or not to change: "Should the FSH dose be changed during an ART stimulation cycle?"</b>
17:40	Pro: <b>Noémie Ranisavljevici, France</b>
17:50	Con: <b>Nicole Sänger, Germany</b>
18:00	Discussion
18:10-18:40	<b>Final follicular maturation and triggering with GnRH agonist</b>
18:10	Pro: <b>Nick Macklon, UK</b>
18:20	Con: <b>Antonio La Marca, Italy</b>
18:30	Discussion





FRIDAY, NOVEMBER 25, 2022

12:00-13:00

HALL A

**FERTILITY PRESERVATION BY ELECTIVE EGG FREEZING: QUALITY VS QUANTITY? HOW CAN WE MAXIMIZE FUTURE SUCCESS?**

*Supported by an Educational Grant from*



<b>Capsule</b>	The use of SOF is on the rise, however, the usage rate of the stored eggs is inherently low. Can we maximize the quantity, quality and usage rate of stored eggs.
<b>Chairpersons</b>	<b>Zion Ben Rafael</b> , <i>Israel</i> <b>Claus Yding Andersen</b> , <i>Denmark</i>
12:00-12:05	Introduction <b>Claus Yding Andersen</b> , <i>Denmark</i>
12:05-12:20	Success rate, usage rate, and cost-efficiency in SOF <b>Zion Ben Rafael</b> , <i>Israel</i>
12:20-12:35	Should we aim at normal or maximal egg retrieval, more is better? <b>Scott Nelson</b> , <i>UK</i>
12:35-12:50	Elective egg freezing: What to do with all the surplus eggs? <b>Guido Pennings</b> , <i>Belgium</i>
12:50-13:00	<b>Q&amp;A</b>



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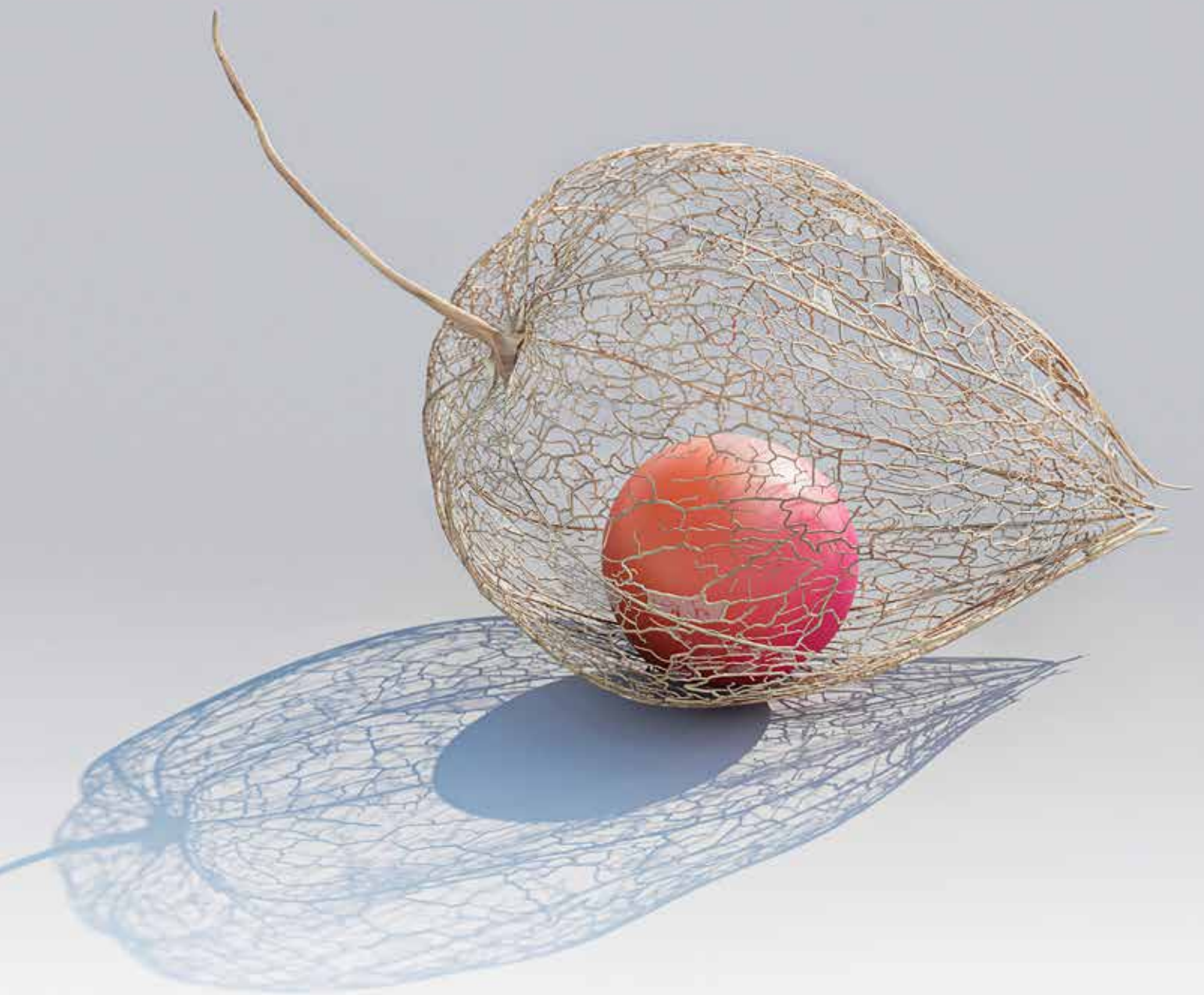
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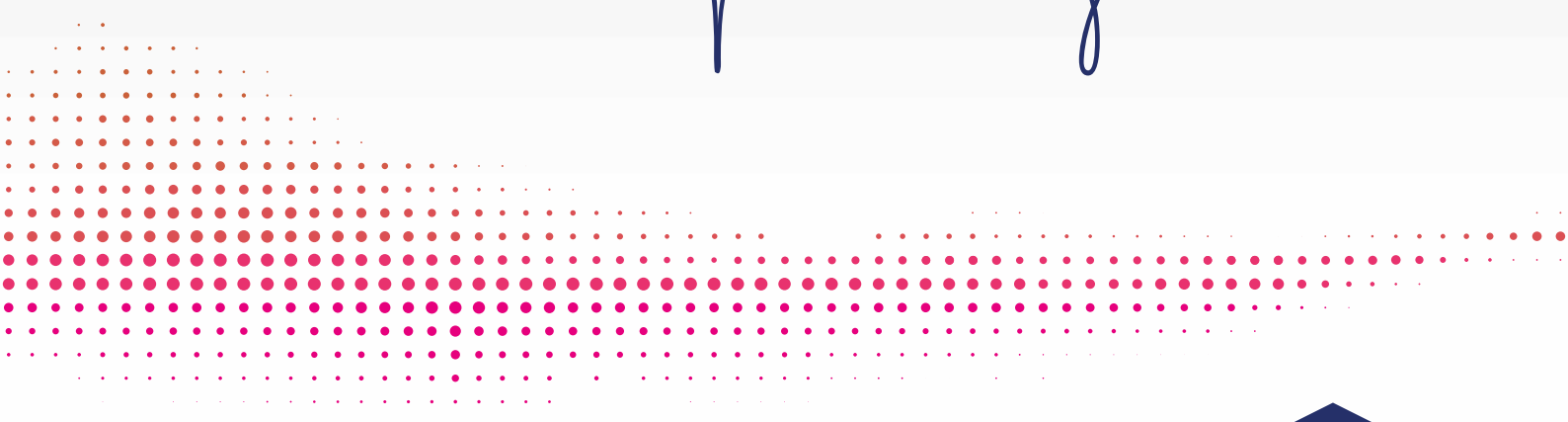
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