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ORAL PRESENTATION

[Abstract: 0106] [OP-01] [Accepted: Oral Presentation]

Frozen Embryo Transfer-is It Our Future? “Theory About Embryo Cryo-treatment”

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Objective: If we examine the statistics and compare the progression of cryopreservation technology during recent years, we will find that over of the last decade, there has been an over 2.5 times increase in treatment of frozen-thawed embryo transfer (FET), while the rate of fresh embryo transfers (ET) that was completed was the same. This increase in the usage of FET correlated with a quick growth in the number of live births, compared to fresh ET. The reason is that embryo freezing and thawing efficiency has improved dramatically with widespread use of vitrification vs. the older slow freezing method.

Materials-Methods: We consider the advantages and disadvantages of the “freeze all” strategy in assisted reproduction. From the analysis of multiple results in assisted reproductive technology, we created the first ever theory that provides a scientific explanation of the causes and mechanism needed for higher success rates of FET.

Results: We found evidence to support a ‘therapeutic’ effect of the freezing/thawing of embryos during the process of recovery of the embryo and its subsequent implantation. Freezing/thawing can be seen as a way to provoke the endogenous survival and improve responses in developing preimplantation embryos. Different molecular mechanisms can explain the higher success rate of FET compared to fresh ET in women of advanced reproductive age, including the higher miscarriage rate in cases of blastocyst FET compared to FET at early cleavage embryo, and the higher perinatal parameters of born children after frozen embryo transfer.

Conclusion: We suggest that the method of cryopreservation is not only a technology for storing embryos, but it is also a method of embryo treatment that can potentially improve the IVF procedure success rate. We believe that, through presenting the advantages arising from the freezing and thawing process described, as well as the theoretical rationale given in our theory, researchers should rethink the position of cryobiology in reproductive medicine.

Keywords: Cryopreservation, FET, fresh ET, mitochondria, pregnancy

[Abstract: 0164] [OP-02] [Accepted: Oral Presentation]

Evaluation of Chromosomal Analaysis Results of Female Patients with Recurrent Miscarriage Etiology who Admitted to Duzce University Research and Application Hospital

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Recurrent miscarriage or habitual abortus is an important human health problem and described as at least 2 or more consecutive pregnancy losses. Etiologic causes of the disease are uterus anomalies, maternal system disorders, genetic anomalies and autoimmune disorders. The chromosomes were obtained from peripheral blood samples of 356 females patients with habitual abortus etiology who admitted to Duzce University Research and analaysed for each patients. According to chromosomal analysis results; 327 females have normal karyotype (46,XX) (91.85%), 5 females have 46,XX,inv(9)(p11q13) (1.40%), 4 females have 46,XX,1qh+ (1.12%), 3 females have 46,XX,16qh+ (0.84%), 2 females have 46,XX,9qh+ (0.56%), 1 female has 46,XX,15cenh+ (0.28%), 1 female has 46,XX,21ps+ (0.28%), 1 female has 46,XX,13pstk+ps+ (0.28%), 1 female has 46,XX,del(15)(p11.2) (0.28%), 3 females have 45,X /46,XX) (0.84%), 2 females have 45,X/47,XXX/46,XX (0.56%), 2 females have 47,XXX /46,XX (0.56%), 1 female has 47,XXX/46,XX/45,X (0.28%), 1 female has 46,XX,t(18;20)(q22;p11.2) (0.28%),1 females has 46,XX,t(14;16)(q23;q22) (0.28%) and 1 females has 46,XX,t(13;16)(q34;q12) (0.28%). Abnormal karyotypes were detected in 29 (8.15%) from 356 females with habitual abortus etiology.

Keywords: Habitual abortus, chromosomal analaysis

[Abstract: 0165] [OP-03] [Accepted: Oral Presentation]

The Factor V Leiden (G1691A), Protrombin II and Methylenetetrahydrofolate Reductase (C677T, A1298C), FV Cambridge and Plasminogen Activator Inhibitor Gene Analysis Results of Female Patients with Habitual Abortus Etiology

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Recurrent miscarriage or habitual abortus is described as at least 2 or more consecutive pregnancy losses. For maintanence of successful gestation, A successful uteroplacental circulation is a crucial and important condition. Therefore, the maternal trombophilias {(Factor V Leiden (FVL), Prothrombin (PTm), MTHFR (methylenetetrahydrofolate reductase)} and PAI (Plasminogen Activator Inhibitor) are crucial for gestation. The molecular analysis of FVL (G1691A), PTm (G20210A) and MTHFR (C677T) of 351 females patients and FV Cambridge, MTHFR (A1298C) and PAI of 102 females patients with habitual abortus etiology who admitted to Duzce University School of Medicine were analysed for each patients. According to analysis results; When the FVL (G1691A) to be taken into consideration, while 305 female have normal (GG) genotype (86,89%), 46 female have the altered genotype (13,11%) (GA or AA). When the PTm (G20210A) to be taken into consideration, while 326 female have normal genotype (92.88%) (GG), 25 female have the altered genotype (7.12%) (GA or AA). When the MTHFR (C677T) to be taken into consideration, while 158 female have normal genotype (45.01%) (CC), 193 female have the altered genotype (CT or TT) (54.99%). When the MTHFR (A1298C) to be taken into consideration, while 50 female have normal genotype (49.02%) (AA), 52 female have the altered genotype (AC or CC) (50.98%). When the PAI to be taken into consideration 22 (21.57%) female have 5G/5G genotype, 58 female have 4G/5G (56,86%) genotype and 22 female have 4G/4G (21.57%) genotype. For FV Cambridge, all females have normal genotype.

Keywords: Habitual abortus, thrombophilia

[Abstract: 0168] [OP-04] [Accepted: Oral Presentation]

The Role of Serum microRNA-132 as a Novel Biomarker for the Diagnosis of Polycystic Ovary Syndrome

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Objectives: Polycystic ovary syndrome (PCOS) is a heterogeneous disorder, and the underlying molecular mechanisms are not clear. In PCOS, abnormal regulation of relevant genes is required for follicular development. MicroRNAs (miRNAs) are small, noncoding RNA sequences that negatively regulate gene expression at the post-transcriptional level. However, few studies have been conducted on circulating miRNAs in PCOS. The aim of this study was to investigate the role of the serum miRNAs as a biomarker for the diagnosis of PCOS and examine the relationship between sex hormones and the miRNAs expression.

Material-Methods: Fifty women with PCOS and age- and body mass index (BMI)- matched 50 healthy controls were recruited from a tertiary care center between January 2016 and June 2017. The expression of circulating miRNA-222, miRNA-146a, miRNA-132, and miRNA-320 were measured from serum samples of subjects.

Results: Insulin, homeostasis model assessment of insulin resistance (HOMA-IR), free testosterone, sex hormone-binding globulin (SHBG), dehydroepiandrosterone sulfate (DHEAS), and androstenedione levels were significantly higher in the PCOS group than in the control group ($p < 0.05$, Table 1). Serum miR-132, miR-146a, and miR-222 were significantly lower in women with PCOS compared with controls ($p < 0.05$). However, only the ratio of patients who had downregulated mir-132 was significantly higher in PCOS group than in the control group ($p < 0.05$). There was no statistically significant difference between the PCOS and control groups in terms of miR-320 expression ($p > 0.05$). Serum miR-132 was negatively correlated with HOMA-IR and insulin and positively correlated with SHBG (all $p < 0.05$).

Discussion: This is the first study indicated that serum miRNA-132 was significantly downregulated in women with PCOS compared with controls. Serum miRNA-132 may be a novel candidate as a molecular biomarker in the diagnosis of PCOS. This relationship may yield important insight into novel treatment modalities by revealing the pathogenesis of PCOS. Further larger studies are needed to evaluate the role of miRNA as a novel biomarker for the diagnosis of PCOS and to determine physiopathological roles of miRNAs in PCOS.

Keywords: Biomarker, miRNA, polycystic ovary syndrome

TABLE 1: Demographics and biochemical characteristics of women with PCOS and control subjects.

	Control group (n=50)	PCOS Group (n=50)	
	Mean±SD	Mean±SD	p
Age (years)	23.9±4.1	22.7±3.5	0.101 m
BMI (kg/m²)	24.3±4.7	25.5±5.2	0.306 m
Fasting glucose (mg/dl)	90.2±7.1	89.1±8.2	0.469 t
Fasting insulin (µU/mL)	7.5±4.8	9.9±5.3	0.012 m
HOMA-IR	1.7±1.2	2.2±1.3	0.030 m
FSH (mIU/mL)	6.7±2.1	6.3±1.9	0.221 m
LH (mIU/mL)	8.4±5.7	10.4±6.9	0.100 m
Estradiol (pg/mL)	83.6±91.9	50.4±33.7	0.121 m
Total testosterone (ng/dL)	56.4±21.2	63.8±23.0	0.148 m
SHBG (µg/dL)	87.5±73.1	49.6±24.8	0.000 m
DHEAS (ng/mL)	241.2±99.1	281.6±101.6	0.047 t
Androstenedione(ng/mL)	1.4±0.6	1.8±0.6	0.002 m
17-OH progesterone	0.9±0.8	0.8±0.6	0.975 m
AMH	5.2±3.1	9.6±5.0	0.000 m

m Mann-whitney U test, t t test, x^2 square test Values are expressed as means ± standard deviations. PCOS, polycystic ovary syndrome; BMI, body mass index; HOMA-IR, homeostasis model assessment of insulin resistance; SHBG, sex hormone-binding globulin; DHEAS, dehydroepiandrosterone sulfate; AMH, antimullerian hormone.

[Abstract: 0178] [OP-05] [Accepted: Oral Presentation]

Caryotype Evolution in Patients with Premature Ovarian Failure

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Objective: Chromosome anomalies are one of the major causes of premature ovarian failure(POF)(1). The objective of this study is to evaluate the frequency and type of chromosomal anomalies in the patients with POF admitted to our clinic and to discuss the findings in the light of current literature and to provide guidance to new studies.

Material-Methods: The study was conducted between 01.03.2017–10.04.2017 in the Reproductive Endocrinology and Infertility Policlinic in the Department of Obstetrics and Gynecology at Dokuz Eylul University. The files of the patients, who were diagnosed with POF, between 2002-2017, were screened from the archives. 65 patients were included in the study. Information about age, smoking, alcohol use, age at menarche, HRT usage, additional disease, obstetric history, age of parents at birth, FSH, LH, estradiol, prolactin, TSH, fT3, fT4, Anti-TPO, Anti-TG, TRAB, cortisol, ANA, Insulin, fasting blood glucose, LDL, HDL, triglyceride, total cholesterol, AMH levels, DEXA, mammogram and karyotype results were recorded from file information. Family history of POF, menopause age of mother, grandmother, aunt, sister and family history of mentally retarded males were recorded. The Statistical Program for Social Sciences (SPSS, version 15) was used for statistical analysis. The Mann-Whitney U test, Fisher's exact test, Pearson and Spearman correlation analysis were used in the analysis. P-values <=0.05 were considered to be statistically significant.

Results: The results of 65 cases were examined. There was no statistically significant difference between the cases with normal and abnormal karyotypes in terms of the smoking, alcohol use, history of additional disease, family history of mentally retarded males, history of pregnancy after diagnosis, gravida, parity, abortus, HRT usage, DEXA and mammogram results (p>0.05). There was no statistically significant difference between the groups, in terms of the laboratuary results. Only fT3 was significantly lower in the cases with abnormal karyotypes (p:0.019). There was no statistically significant difference between the groups, in terms of the age of parents at birth and the age of menopause of mother, grandmother, aunt, and sister. 5 cases (%7,7) were found to have chromosome anomalies (46+XX/45+X(4) and 46+XY/45+X(1)).

Conclusion: Turner syndrome/mosaic Turner syndrome is the most frequent genetic anomaly related to POF. However, the relation between caryotype and ovarian function is not clear(2,3). 46+XY female is rare and these cases have female sekonder sex characteristics and related to SRY gene mutation. 45+X/46+XY phenotypic interval can change from Turner Syndrome to mix gonadal dysgenesis and normal male phenotype(4). Previous studies showed the importance of X chromosome in POF ethiology(5). POF cases which have low rate X chromosome mosacism can be important especially in ethiology of idiopatic group(5). In conclusion, cytogenetic researches should be evalute routinely in cases with POF.

Keywords: Premature ovarian failure, caryotype, genetics, ovarian aging

TABLE 1: BMI, age at diagnose, biochemical and hormonal parameters

	Mean	Min	Max	Median
Age at Diagnose	32,6±5,5	18	39	34
VKİ(kg/m²)	23,4±2,6	18	30	23
FSH(mIU/mL)	76,3±26,8	42	155	69,2
LH(mIU/mL)	38,4±14,05	16	80,2	33
E2(pg/mL)	27,4±16,8	10	122	20
TSH(µIU/mL)	1,65±0,74	0,02	3,2	1,47
fT3(pg/mL)	2,7±0,73	0,21	4,48	2,78
fT4(ng/dL)	0,98±0,31	0,60	2,14	0,88
TRAB	1,04±0,18	0,31	1,8	1
Anti-TPO(IU/mL)	45,07±141,3	0,02	737	1,1
Anti-TG(IU/mL)	7,1±28,1	0,90	207	0,9
ANA(titre)	0,03±0,17	0	1	0
Kortizol(µg/dL)	10,2±4,9	2,5	28,8	9,29
İnsulin(µIU/mL)	8,7±9,48	1,44	56	6,01
AMH	0,47±0,075	0,01	0,31	0,01
Prolaktin(ng/mL)	9,4±3,9	3,05	21	8,6
FBG(mg/dL)	83,8±13,8	60	140	84
LDL(mg/dL)	117,2±37,1	59	212	106
HDL(mg/dL)	57,9±13,8	32	105	59
Trigliserit(mg/dL)	120,1±80,05	42	405	96
Total Kolesterol(mg/dL)	178,5±45,5	112	308	173

TABLE 2: Range of caryotype results.

Caryotype	N	N
46+XX	60(%92,3)	
46+XX/45+X		4(%6,1)
46+XY(16)/45+X(36)		1(%1,5)

[Abstract: 0193] [OP-06] [Accepted: Oral Presentation]

Exome Sequencing Unravels Novel Mechanism in Unexplained Infertility

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Objective: About a quarter of infertile couples seeking infertility treatment are diagnosed as having unexplained infertility that defies diagnosis following standard investigations. These patients have been suggested to have immunological disturbances or molecular defects due to mutations in the genes which have role in reproductive physiology. The objective of this study was to utilize advanced genetic testing to identify possible genetic causes of unexplained infertility.

Design: Prospective

Materials-Methods: A total of seven couples diagnosed as unexplained infertility and having immature oocytes following their uneventful controlled ovarian stimulation and ovulation triggering were asked to participate IRB approved genetic testing study. All had failed intrauterine insemination cycles followed by in vitro fertilization treatment. They had ovarian stimulation with short or long agonist, or antagonist stimulation protocols followed by hCG/agonist induction for final follicular maturation. Oocyte retrieval was performed and the obtained cumulus oocyte complexes either inseminated or denuded from cumulus cells according to their treatment protocol. Once the patients was confirmed to have all immature oocytes they were counselled for genetic testing and pedigree analysis. If agreeable, patients' DNA samples were collected for positional mapping and whole-exome sequencing.

Results: Seven patients underwent a total of 22 oocyte retrievals and 215 oocytes were collected. There were only 6 oocytes with a polar body and remaining 209 oocytes were either at germinal vesicle or metaphase 1 stage. None of these 6 oocyte reached to embryo following sperm injection suggesting incomplete maturation. Twenty two oocytes were also cultured in in vitro maturation medium for 48 hours with none was resuming meiosis. Positional mapping examination of runs of homozygosity revealed only one overlapping region in two patients. Exome sequencing revealed 63,890 variants in the index of couple 1 and 72,370 variants in the index of couple 2. However, only one rare homozygous variant was identified within the candidate locus in each family and both variants involved mutations in the same gene. These variants were completely absent in 2,379 control exomes. The novel candidate gene has been reported to be involved in the oocyte maturation of Xenopus suggesting also possible involvement in human oocyte maturation.

Conclusions: Data suggest that next generation genetic testing uncover the reason behind unexplained infertility and mutation in the candidate gene causes meiotic arrest and leads to female infertility.

Keywords: Keywords: Oocyte, maturation arrest, next generation sequencing, unexplained infertility

[Abstract: 0244] [OP-07] [Accepted:Oral Presentation]

Tek Gen Hastalığı ve HLA Uyumunda Preimplantasyon Genetik Tanı (PGT): Dışkapı Deneyimi

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Amaç: Preimplantasyon Genetik Tanı (PGT)'da tek gen hastalıkları taraması ile kombine HLA doku tiplemesi tayini Talasemi Majör gibi yaşamı tehtid eden ve kordon kanı ve /veya kemik iliği nakli ile tam olarak tedavi edilebilen genetik hastalıklara sahip çocuklar için etkin bir tedavi yöntemidir. Bu çalışmada, Sağlık Bilimleri Üniversitesi Dışkapı Yıldırım Beyazıt Eğitim Araştırma Hastanesi Genetik Tanı Merkezi Preimplantasyon Genetik Tanı Labaratuarında 2014-2017 Mayıs döneminde çalışılan vakaların verileri sunulmuştur.

Gereç-Yöntem: Labaratuarımıza çoğunluğu Sağlık Bilimleri Üniversitesi Etlik Zübeyde Hanım Kadın Hastalıkları Tüp Bebek Merkezinden gelen 6-8 blastomer aşamasındaki 3. gün embriyolarından alınan biopsi örneklerinde preimplantasyon genetik tanı uygulamaları yapılan 91 vakada genetik analiz sonuçları, implantasyon ve gebelik başarısı ile canlı doğum oranları değerlendirildi.

Biopsi örneklerinden DNA izolasyonu gerçekleştirildikten sonra mutasyonu taşıyan DNA fragmentlerinin ve HBB geni ile ilişkili 11 markerın belirlenebilir seviyeye kadar polimeraz zincir reaksiyonu (PCR) ile çoğaltılması yapıldı. Amplifikasyondan sonra DNA, normal DNA fragmentlerini mutasyonu taşıyan fragmentlerden ayırt etmeye olanak sağlayan mini-sekanslama tekniği ile kapiller elektroforez kullanılarak analiz edildi. Seçilmiş Linked Markerlar mutasyonun tanısı için bir destek oluşturma ve bazı DNA kontaminantlarının belirlenmesi amacıyla kullanıldı. HLA tipleme analizlerinde uyumlu HLA genotiplerinin belirlenmesi için HLA kompleksi ile ilişkilendirilen 32 marker, multipleks polimeraz zincir reaksiyonu (PCR) ile çalışılarak DNA fragmentleri kapiller elektroforez kullanılarak analiz edildi.

Bulgular: 86 vaka Beta Talasemi (HBB GENİ), 1 vaka Orak Hücreli Anemi (HBB GENİ),1 vaka Blackfan Diamond Anemisi (RPS19 GENİ), 1 vaka ALL, 1 vaka Ağır Konjental Nötropeni (HAX1 GENİ) ve 1 vaka FankoniAplastik Anemisi (FANCA GENİ) olmak üzere toplamda 91 vaka çalışıldı. Toplam çalışılan blastomer sayısı 328, transferi yapılan vaka sayısı 41, gebelik gerçekleşen vaka sayısı 12, gerçekleşen canlı doğum sayısı 8 ve kemik iliği nakil işlemi yapılan vaka sayısı 3 olarak saptandı.

Sonuç ve Tartışma: Bu sonuçlar kemik iliği nakli ile tam kür sağlan hastalıkların tedavisinde ailede sağlıklı ve HA uyumlu çocuk varlığının önemi açısından oldukça önemlidir. Diğer preimplentasyon genetik test uygulanan hastalıklarla karşılaştırıldığında transfer edilebilir blastomer bulma oranın düşük olduğu görülmüş ancak bunun nedeninin blastomerde iki farklı genetik seçilim yapılması gerekliğinden kaynaklandığı düşülmüştür.

Anahtar Kelimeler: Preimplantasyon genetik tanı, HLA uyumu, tek gen hastalığı

[Abstract: 0117] [OP-08] [Accepted: Oral Presentation]

Vaginal Progesterone Gel Versus Intramuscular Progesterone for Luteal Support in Suboptimal Responder Women Undergoing Antagonist IVF/ICSI Cycles

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Objective: The aim of the study was to investigate the effects of two different vaginal progesterone forms (vaginal progesterone gel versus intramuscular progesterone) administered for luteal phase support, on pregnancy outcomes in supoptimal responder women aged <= 40, who underwent antagonist in IVF/ICSI-ET cycles. Although luteal phase support has been shown not to affect the outcome of normosponder patients, there is no study of the route of administration of luteal phase support (LPS) in patients with suboptimal responder.

Material Metod: This is a retrospective study conducted using the files of patients who were admitted to the assisted reproduction department of department of obstetrics and gynecology, medical faculty, Ondokuz Mayis University due to the desire to have children, between January 2010 and December 2015 we were evaluated that data of 189 patients with suboptimal responder who underwent IVF / ICSI treatment and reached to file data. The cycles were categorized into two groups: progesterone vaginal gel 180 mg/day (Group 1, n = 76),progesterone ampoule 50 mg/ml intramusculer 1x2 (Group 2, n = 113). Clinical pregnancy, ongoing pregnancy rates and spontanous abortus were analyzed.Clinical pregnancy was defined as fetal cardiac activity observed by vaginal ultrasonography 4 or 5 weeks after oocyte retrieval and ongoing pregnancy was defined as ultrasound check of the embryo after 9 weeks of gestation. Luteal support commenced after oocyte retrieval and continued until the day of pregnancy testing. If the test was positive, progesterone treatment was continued for up 9 weeks of gestation. Stimulation was performed according to the disease-fix antagonist protocol. The dosage is adjusted according to the ovarian response. Induction was started at a daily dose of FSH.

Results: Patient and treatment characteristics such as patient age, antral follicle count (AFC) on day 3, FSH,TSH and estradiol level on day 3, infertility diagnosis were similar in both groups (Table 1). Hovewer,In terms of infertile duration,significant differences were observed between groups (P=0,043). There were no significant differences in stimulation characteristics such as mean total gonadotropin doses, E2 levels on hCGday, total number of oocytes, number of fertilized oocyte between the groups. Intra-cytoplasmic sperm injection outcomes did not show statistically significant differences between the two groups regarding clinical pregnancy rate/cycle, livebirth rate and the spontaneous abortion (Table 2).

Discussion: According to our findings, we conclude that there were no statistically significant differences between the use of 50 mg progesterone ampoule 1x2 /day and 90 mg progesterone gel 2x1 /day for LPS treatment, in terms of clinical pregnancy rate, and the live birth rate, the spontaneous abortion in suboptimal responder women undergoing antagonist IVF/ICSI cycles. prospec¬tive,more comprehensive, randomized studies are required in order to better define the optimum daily drug doses, administration route, as well as the initiation and cessation time of the drug.

Keywords: Progesterone vaginal gel, in vitro fertilization, antagonist protocol

TABLE 1: Demographic characteristics of the patients in the groups.

	progesterone gel (n:76)	progesterone ampoule (n:113)	
Age (years)	30(19:40)	32(21:40)	0,323a
Duration of infertility (years)	6(2:8)	5(1:8)	0,043a**
Number of antral follicles on day 3	8(5:14)	8(5:12)	0,743a
D3 FSH [IU/L]	6(4:10)	6(4:10)	0,573a
D3 Estradiol [pg/mL]	36,5(5:80)	36,0(8:80)	0,594a
D3 Tsh [pg/mL]	2,4(1:6)	2,3(1:5)	0,982a
Infertility diagnosis, n (%)			
Unexplained	40(52,6)	75(66,4)	
Male factor	32(42,1)	34(30,1)	0,323b
Tubal	4(5,3)	4(3,5)	

Data are presented as median (min: max) and number (percent). a: Mann-Whitney U test, b: χ^2 test. FSH - follicle stimulating hormone, hCG - human chorionic gonadotropin, E2 - estradiol, TSH-thyroid stimulating hormone **Statistically significant.

TABLE 2: Stimulation characteristics and treatment outcomes of 198 cycles

	progesterone gel (n:76)	Progesterone ampoule(n:113)	
Average gonadotropin dose	3125(2500:4250)	3200(2250:4900)	0,412a
Endometrial thickness on the day of hCG	9(7:16)	10(7:14)	0,535a
Total Duration of induction (day)	10(8,13)	10(8,14)	0,626a
E2 on the day of hCG	2000(1600:3100)	2000(1750:4300)	0,444a
Number of total oocytes retrieved	7(4:9)	7(4:9)	0,775a
Number of the fertilized oocytes	6(2:10)	6(2:10)	0,937a
Number of MII oocytes	6(1:9)	5(1:9)	0,260a
Clinical pregnancy rate/cycle (%)	73,7	69,9	0,573b
Live birth rate/cycle (%)	58,1	59,8	0,816b
Spontaneous abortion(%)	17,3	15,3	0,714b

Data are presented as median (min: max) and number (percent). a: Mann-Whitney U test, b: χ^2 test. hCG - human chorionic gonadotropin, E2 - estradiol, MII:metaphase-II oocytes

[Abstract: 0141] [OP-09] [Accepted: Oral Presentation]

rLH Versus hMG in Terms of Proportion of ETs at the Blastocyst Stage and Cycles with Embryo Cryopreservation in Poor Responders

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The study question is the treatment with rLH more effective than hMG in terms of proportion of ETs at the blastocyst stage and proportion of cycles with embryo cryopreservation in poor responders.Although previous studies have shown beneficial effects of the addition of LH activity to FSH, in terms of PR in patients,no studies have compared two different gonadotrophin preparations containing LH activity in the same group of poor responder women.

A single-centre retrospective study was performed between January 2015 and December 2016 with 30 women <=39 years of age with diminished ovarian reserve undergoing ICSI cycles. Both rFSH in combination with rLH or hMG, were used in the same patient group.

30 patients with unexplained infertility,tubal factor or male factor undergoing ICSI cycles were recruited in a private hospital setting. The ovarian stimulation cycle started on the third day of the menstrual cycle and the starting gonadotrophin doses used were 225 IU/day of rFSH plus 75IU/day of rLH or 75 IU/day of u-hMG.Flexible antagonist protocol was used for all cycles. Oocyte pick up was performed 35-36 h after hCG injection.rLH addition was associated with a significant increase in the mean number of COC and MII oocytes.($p<0.001$)The proportion of ETs at the blastocyst stage and cycles with embryo cryopreservation were not significantly different in poor responders treated with rLH or hMG.,

Further studies are required to verify if rLH addition produces better results than HMG in young poor responder women. It is obvious that interventions used in poor responders require properly designed large randomized studies, because until now there is no evidence-based treatment for that particular group of patients.

Keywords: rLH, hMG, ICSI, Blastocyst

[Abstract: 0095] [OP-10] [Accepted: Oral Presentation]

Mitochondrial Contribution in Egg Rejuvenation and Pre-implantation of Embryo

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Background: Mitochondria are integral part of a cell known as "power house" of the cell, manifested by highly multifaceted and entirely organized intricate biological processes. Traditionally, it portrayed two essential physiological liabilities: periodic release of energy during the cell cycle and activation of specific integral proteins. Several studies predicted its manifold functions by producing heterogeneous proteins that are unequivocally involved in a plethora of phosphorylation pathways, calcium signaling, cellular respiration, embryonic development and sequential programmed cell death. However, in early oogenesis and embryogenesis mitochondria has a nexus of developmental regulations and overwhelming role in infertility treatments. The oocyte quality is directly related with ovarian aging and devastating mitochondrial function which is important for infertility and age related ovarian dysfunction.

Objective: Nearly 23% patients visiting the infertility centers consulting for infertility depicted signs of premature ovarian senescence (POS) and quality compromise oocyte. This study emphasize on the role of mitochondria in ovarian aging and on the expected effects in the next generation.

Subjects and Methods: PubMed was employed to search the MEDLINE database for peer-reviewed original research papers and reviews about mitochondria and ovarian ageing, in human species from 2002 to 2017.

The patients are divided into two groups, premature ovarian senescence (POS) group and normal ovarian senescence group (NOPS). Statistically, we apply orthogonal partial least squares discriminant analysis (OPLS-DA). In order to compute the value of oocyte mtDNA content we used OPLS model.

Results: Our data showed a correlative capability (Q2 = 0.769) when OPLS-DA has employed among two mtDNA content (0.82), groups. The POS group showed three important variables by using projection matric i.e. oocyte the cumulus cell mtDNA content (0.85) and peroxisome active receptor γ co activator factor (1.02) all are lower in POS group than NOPS groups of patients. While OPLS model predict oocyte mtDNA content only in the NOPS group (Q2 = 0.634). Moreover, we found four new positively correlated variables that are directly linked with mitochondrial inner mass of quality compromised oocytes (0.56), the cumulus cell mtDNA contents (1.032), expression of polymerase gamma (1.85) and mitochondrial DNA transcription factor (1.50).

Keywords: Egg Rejuvenation, pre-implantation, IVF, Mitochondrial DNA

[Abstract: 0118] [OP-11] [Accepted: Oral Presentation]

Varicocelectomy Improves the Sperm Capacity to Induce Optimal Embryonic Development Post-fertilization in Surrogacy Program

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Objective: Left varicocele has a detrimental effect (European Urology Supplements 13:89-99,2014) on the sperm ability to induce optimal early embryonic development post-fertilization. Our objective was to evaluate the effects of varicocelectomy on early embryonic development of oocytes recovered from female donors.

Participants and Methods: ICSI procedures using female donor oocytes were performed with spermatozoa from 13 men (group A) with left varicoceles. The female partners of the latter men could not produce oocytes of appropriate quality for participating in assisted reproductive technology (ART) programs. Injected oocytes were cultured for 96 hours. The fertilization rate (FR) (100χ fertilized oocytes / injected oocytes) and the blastocyst development rate (BDR) (100χdeveloped blastocysts/fertilized oocytes) were recorded. Developed blastocysts were transferred to surrogate females. Another group of nine men with left varicoceles (group B) whose wives could not produce oocytes of appropriate quality for ART programs underwent microsurgical left varicocelectomy. Six to 12 months later ICSI cycles were performed using female donor oocytes. FR and BDR were recorded, as well. Developed blastocysts were transferred to surrogate females.

Results: BDR was significantly larger ($P<0.05$) in group B than in group A (Chi-Square test -Yates correction).

Conclusions: Microsurgical left varicocelectomy improves the ability of the male gametes to trigger the cascade of ooplasmic events that lead to early embryonic development up to the blastocyst stage. In the current study the injected donor oocytes had been recovered from normal young females thus any female infertility factor is excluded. It appears that left varicocelectomy improves the DNA integrity, the male gamete nucleus protein matrix quality and/or the centrosomic integrity/function allowing more optimal embryonic development. The current study indicates an important role of the male gamete beyond fertilization. Such results have clinical significance in a Surrogacy Motherhood Program whereby global legislation requires either of the intended parents to provide (in most cases the male partner) their own genetic material. Consequently, it is imperative to increase quality of the sperm in order to achieve high pregnancy rates.

Keywords: Varicocelectomy, sperm capacity, embryonic development, surrogacy

[Abstract: 0136] [OP-12] [Accepted: Oral Presentation]

Differential Gene Expression Analysis of Human Cumulus Cells as a Predictor for Pregnancy and Live Birth

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Objective: The objective of this study was to provide valuable insights into the determination of clinical pregnancy and live birth outcomes in the context of differential gene expression analysis of cumulus cells as predictors of clinical pregnancy and/or live birth after single embryo transfers. This study was performed with the consideration that each oocyte and each group of cumulus cells surrounding different oocytes might have different genetic expression patterns that might affect human reproduction.

Material: This prospective case study included 10 women (aged 23-35 years) who were referred to a 3rd level reference center university hospital for idiopathic infertility and implemented Assisted Reproductive Technologies. Differential gene expression analysis of cumulus cells was performed in 10 clusters of cumulus cells obtained from 10 cumulus-oocyte complexes of 10 patients.

Method: Cumulus cells gene expressions were individually evaluated by microarrays using a NimbleGen Human Gene Expression 12x135K Microarray Kit (NimbleGen, Roche, Germany). Total RNA was isolated using an RNeasy Kit (Qiagen, Hilden, Germany) and cDNA synthesis from total RNA was carried out using a Superscript Double Chain cDNA Synthesis Kit (Invitrogen Life Technologies, Carlsbad, CA, USA) according to the manufacturer's instructions. Same procedures related to the oocyte maturation and microinjection, and microarray analyses were applied to the group of cumulus cells, individually. Two differential gene expression analyses were performed, one for outcome of clinical pregnancy and one for outcome of live birth. Significant genes resulting from these analyses with $p<0.05$ were selected and given as input to PANOGA tool for pathway analysis and it was run 20 times for each case and the resulting KEGG pathways were summarized across all runs for clinical pregnancy and live birth. We report KEGG pathway id, KEGG pathway name, the significance of each pathway that are found in original PANOGA input, and the times they are found in our analysis.

Results: Clinical pregnancy rates and live birth rates were used to assess the success of ICSI. Clinical pregnancy was observed in 3 patients, and live birth occurred in 2 patients from the total 10 patients in this study. 4371 significant genes from clinical pregnancy and 1975 significant genes for live birth were enriched to 152 and 151 KEGG pathways by 20 PANOGA runs, respectively. Top 20 affected pathways in clinical pregnancy (Table 1) and live birth (Table 2) are analyzed and these analyses determined that circadian entrainment was the most affected pathway for clinical pregnancy and proteoglycans in the cancer pathway was the most affected pathway for live birth. Circadian entrainment has both lower p-value of 6,04.e-30 and higher number of times count of 2142 than proteoglycans in pathways pathway which has a p value of 1,29e-24 and 532 number of times count. There are 11 commonly affected pathways at different significances in top 20 affected pathways and circadian entrainment pathway is one of these commonly affected pathways.

Conclusion: The results of this study provide new insights into human cumulus cells, and provide new information on the crosstalk between different signalling pathways during pregnancy and clinical pregnancy.

Keywords: Microarray, cumulus cell, pregnancy, live birth, circadian entrainment

TABLE 1: The statistically significant top 20 pathways for the clinical pregnancy according to P-values.

KEGG ID	KEGG Term	P Value	Times Found
KEGG:04713	Circadian entrainment	6.04E-30	2142
KEGG:04610	Complement and coagulation cascades	7.22E-27	326
KEGG:03050	Proteasome	8.73E-26	159
KEGG:04015	Rap1 signaling pathway	1.14E-25	1087
KEGG:05032	Morphine addiction	1.48E-25	580
KEGG:05200	Pathways in cancer	3.22E-23	182
KEGG:04724	Glutamatergic synapse	1.06E-22	1073
KEGG:04080	Neuroactive ligand-receptor interaction	1.17E-21	33
KEGG:04020	Calcium signaling pathway	4.89E-21	656
KEGG:04014	Ras signaling pathway	9.22E-21	413
KEGG:04510	Focal adhesion	9.83E-21	233
KEGG:04725	Cholinergic synapse	2.27E-20	1121
KEGG:04728	Dopaminergic synapse	3.76E-20	1568
KEGG:04012	ErbB signaling pathway	4.36E-20	1750
KEGG:04062	Chemokine signaling pathway	7.46E-20	241
KEGG:04727	GABAergic synapse	7.60E-20	547
KEGG:04723	Retrograde endocannabinoid signaling	9.58E-20	653
KEGG:04210	Apoptosis	3.84E-19	1690
KEGG:04720	Long-term potentiation	7.52E-19	3695
KEGG:04144	Endocytosis	1.51E-18	58

TABLE 2: The statistically significant top 20 pathways for live births according to p-values.

KEGG ID	KEGG Term	P Value	Times Found
KEGG:05205	Proteoglycans in cancer	1.29E-24	532
KEGG:05200	Pathways in cancer	5.51E-23	168
KEGG:04210	Apoptosis	1.97E-20	1119
KEGG:04014	Ras signaling pathway	1.13E-19	213
KEGG:04010	MAPK signaling pathway	1.22E-19	283
KEGG:05032	Morphine addiction	2.78E-19	366
KEGG:04510	Focal adhesion	2.32E-18	162
KEGG:04062	Chemokine signaling pathway	5.91E-18	322
KEGG:04722	Neurotrophin signaling pathway	1.81E-17	1087
KEGG:04723	Retrograde endocannabinoid signaling	5.18E-17	260
KEGG:04064	NF-kappa B signaling pathway	8.13E-17	190
KEGG:04012	ErbB signaling pathway	1.17E-16	879
KEGG:04610	Complement and coagulation cascades	1.93E-16	105
KEGG:04015	Rap1 signaling pathway	2.99E-16	307
KEGG:04350	TGF-beta signaling pathway	3.12E-16	321
KEGG:04668	TNF signaling pathway	4.70E-16	588
KEGG:05202	Transcriptional misregulation in cancer	8.38E-16	341
KEGG:04713	Circadian entrainment	1.21E-15	286
KEGG:04725	Cholinergic synapse	1.85E-15	344
KEGG:05223	Non-small cell lung cancer	2.06E-15	932

[Abstract: 0259] [OP-13] [Accepted: Oral Presentation]

Endometrial Injury Revisited: Large Randomized and Controlled Study to Investigate its Effectiveness in RIF

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Despite the advances in assisted reproductive technologies (ART), a substantial percentage of patients still suffer from recurrent implantation failure (RIF). It is evident from the scientific literature that local inflammation of the endometrium is required for embryo implantation. Thus, there are numerous studies investigating the effect of endometrial scarring in order to increase the odds of implantation though increasing the inflammation of the endometrium, especially for RIF patients. However, these studies are lacking the necessary standard method for coming to a conclusion for the usefulness of endometrial scarring. Therefore, we present a new method that can be applied standardly on RIF patients in order to increase the pregnancy rates of RIF patients.

Purpose: To investigate the effect of hysteroscopic symmetrical endometrial injury for RIF patients.

Method: This is a prospective and randomized controlled trial for RIF patients investigating the effect of systemic and symmetric endometrial injury using office hysteroscopy. Endometrial injury was performed on the follicular phase of the menstrual cycle under general anesthesia. The main variant analyzed was the clinical pregnancy rates. Statistical calculations were performed on GraphPad Prism version 6.0 and $p<0.05$ were considered statistically significant.

Findings: Following randomized controlled trial we propose that the systemic endometrial injury model can be standardized to increase the odds of implantation in RIF patients to achieve clinical pregnancy.

Results: The average maternal age for the control and endometrial injury group was 31.89 and 33.48 (n=72 and n=75, $p>0.05$, respectively). No statistical differences were found between the BMI of the female (23.88 kg/m2 and 24.13 kg/m2, $p>0.05$, respectively), previous cycles (3.74 and 3.84, $p>0.05$, respectively), cumulative embryo transfer (6.13 and 6.25, $p>0.05$, respectively), average number of MII eggs (75.61% and 77.82%, $p>0.05$, respectively), average ET (embryo transfer) day (3.18 and 3.11, $p>0.05$, respectively), average embryos transferred (1.9 and 1.9, $p>0.05$, respectively), and endometrial thickness on hCG day (10.28mm and 9.43mm, $p>0.05$, respectively) when two groups were compared. On average, the endometrial injury was performed on the follicular phase of the menstrual cycle (average day: 10.76). The clinical pregnancy rates were found to be significantly higher in the endometrial injury group when compared with the control group (38.82% and 18.50%, $p<0.05$, respectively).

Keywords: Office hysteroscopy, recurrent implantation failure, RIF, embryo implantation

[Abstract: 0143] [OP-14] [Accepted: Oral Presentation]

Prevalence of Low Vitamin D Levels in Infertile Patients - A Single Center Pilot Study

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Objective: Our objective was to evaluate serum levels of vitamin D in patients who presented with infertility to Istanbul University, Istanbul Faculty of Medicine, Department of Obstetrics and Gynecology, Department of Reproductive Endocrinology and Infertility.

Material: This study used a retrospective cross-sectional design. We examined medical records of all infertile patients who visited our clinic between March 2017 and August 2017. The inclusion criteria were voluntariness to participate in the study, being aged 18-49 years, and being required to give blood for serum 25-OH vitamin D testing. Patients who were admitted for recurrent miscarriages or other symptoms such as hirsutism, and abnormal uterine bleeding were not included. Additional exclusion criteria included current pregnancy, chronic diseases, celiac disease or other causes of malabsorption, disorders that may impact calcium or vitamin D metabolism, kidney diseases, medications affecting bone metabolism, vitamin D or calcium supplementation.

Method: Demographic data were collected from medical records. Predictors for hypovitaminosis D, such as anticonvulsant use, renal and cardiovascular disease, preexisting diabetes mellitus (type 1 or 2), malabsorption, gastrectomy, active liver disease, acute myocardial infarction, alcoholism, anorexia nervosa, and steroid dependency were investigated.

The normal value for vitamin D (25-OH vitamin D concentration in plasma) is considered as >= 30 ng/mL [75 nmol/L]. Severe deficiency is considered as <10 ng/mL [25nmol/L]; deficiency < 20 ng/mL [50 nmol/L]; and insufficiency 21-29 ng/mL [51-74 nmol/L]. First, the prevalence of vitamin D severe deficiency, deficiency, insufficiency, and sufficiency was calculated. Then, all patients were grouped according to their BMI (normal, overweight, and obese) and age (younger than 35 years, between 35-40, and older than 40 years) and whether there was a statistically significant difference for vitamin D levels between the groups was investigated.

Results: During the study period (spring and summer seasons in Turkey), 711 consecutive outpatients, all Caucasians, aged between 18 and 49 years (mean ± SD, 30.6 ± 5.49 years) were enrolled for this study. Sixty-one patients did not give blood for vitamin D, 11 were actively taking vitamins including vitamin D, and 60 had medical problems that could influence vitamin D status, and were excluded. A total of 579 infertile women met the inclusion criteria. The mean serum 25-OH vitamin D concentration was 16.28 ng/mL±11.58 (range, 1-79.5 ng/mL); 220 patients were severely vitamin D deficient; 192 were vitamin D deficient; 95 were vitamin D insufficient; and only 72 patients were vitamin D sufficient. According to age groups, vitamin D deficiency was more frequent in the younger patients (<35 years) than in older patients (>35 years) and the difference was statistically significant. No difference was seen when the patients were grouped according to BMI.

Conclusion: This study showed that among persons presenting with infertility, more than three quarters of patients younger than 35 years and more than half of patients older than 35 years are vitamin D deficient and need treatment with vitamin D.

Keywords: Infertility, 25-OH vitamin D, body mass index, age

[Abstract: 0179] [OP-16] [Accepted: Oral Presentation]

Gene Expression in Growing Human Follicles: Identifying Markers of Follicle Activation

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Objective: Women receiving gonadotoxic treatment are of high risk of becoming infertile. An option for these women is to preserve fertility by ovarian tissue cryopreservation. In vitro activation is a novel method to increase the chances for pregnancy after cryopreservation and autotransplantation by targeting cell signaling pathways controlling growth. Especially the PI3K-Akt-mTOR pathway and Hippo pathway have attracted much attention recently. Using gene expression data obtained from nine different time points of follicle growth and maturation, the objective of this study was, to elucidate on the impact of these pathways and identify other potential mediators of human follicle recruitment and maturation.

Materials: Microarray analysis was performed on human pre-antral follicles in five distinct size categories plus granulosa cells from small antral and pre-ovulatory follicles as previously published (Borgbo et al., 2013; Kristensen et al., 2014; Wissing et al., 2014, Petersen et al., 2015). The pre-antral follicles and the granulosa cells were obtained from donated ovarian tissue from women undergoing ovarian tissue cryopreservation for fertility preservation. Furthermore, granulosa cells from pre-ovulatory follicles were obtained from women undergoing fertility treatment.

Methods: In one study, human pre-antral follicles were isolated enzymatically from medullary tissue, divided into four different size groups: <60 µm, 60-75 µm, 75-100 µm, 100-150 µm, >150 µm and snap frozen. In the other studies, granulosa cells from antral follicles including 6mm antral, before hCG treatment and post-hCG treatment, were isolated from follicle fluids and snap frozen. RNA was isolated from all the samples. Microarray and q-PCR was performed as described previously (Kristensen et al., 2014; Petersen et al., 2015).

Results: For PI3K-Akt-mTOR pathway high expression was found for FOXO1 and GSK3 in both preantral and antral follicles. For genes in the Hippo pathway; YAP1 and the target gene CTGF were highly expressed in preantral, but only moderately expressed in antral follicles. The remaining genes of both pathways were moderately or less expressed throughout the different follicle stages. Proteins of possible interest to follicle activation and maturation including MDK, MAPK8, S1PR1 and HTRA1 were found with a distinct amplified expression in the early phases of growth and with low expression in the antral stages.

Conclusion: The results confirm that a complex network of signaling pathways is present and contributing to growth and maturation of follicles. Mapping the key players in activation and maturation of follicles will contribute to new therapies for infertility. Further verification with description of the proteins present including localization and phosphorylation status is needed to further describe their involvement.

Keywords: Fertility preservation, gene expression, Hippo pathway, in vitro activation, PI3K-Akt-mTOR pathway

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[Abstract: 0180] [OP-17] [Accepted: Oral Presentation]

Effects of Nicotine Exposure on Clomiphene Citrate Induced Rats: Morphological and Immunohistochemical Analysis in the Ovaries

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Objective: The most common use of ovulation induction in clompihene citrate (CC) administered rats is to investigate whether there is any morphologically and immunohistochemically difference in nicotine exposure between rats not exposed to nicotine and with no CC.

Material-Methods: A total of 24 healthy, regular eustrus cycles with rats weighing 200-250 gr were used. The rats were randomly divided into 3 groups. Group 1: The group that received nicotine followed by clomiphene citrate (NE-CC): 1 mg/kg/day of nicotine patch was administered daily for 3 consecutive cycles prior to the use of CC. After 3 cycles, CC was injected intraperitoneally as 1 mg/kg/day for 3 days starting from the first day of the cycle. Group 2: Only CC applied group (Only-CC): CC was administered intraperitoneally for a total of 3 days starting from the first day of the 1 mg/kg cycle on a daily basis. Group 3: Control group: In the last 8 rats group, 2.5 ml/kg of normal saline was administered intraperitoneally daily during the first 3 days of the cycle. On the 4th day of the cycle animals were sacrificed and bilateral salpingooophorectomy was performed. Once the follicles were overlaid, sections were taken and stained with standard haematoxyline for histopathological examination. For immunohistochemical evaluation, sections were stained with Ki-67 and CD34.

Results: There were no significant differences between the groups in terms of ovarian follicular count and types, and follicle-stroma immunohistochemical staining Ki-67 expression. There was also no significant difference in granulosa cell thickness between the groups (Table-1). However, among the groups, CD34 expressions in the NE-CC group were statistically less in the secondary follicle (p=0.000), corpus luteum (p=0.012) but more in the overian storm (0.001) (Table-2).

Conclusion: In the CC-stimulated animal model, we did not observe that transdermal nicotine exposure was morphologically deleterious to the ovarian follicular number. We also could not detect the negative effect of nicotine exposure on the thickness of the granulose cell. Perhaps the effect on the ovarian stimulation with CC may be less than expected, depending on the route or the dose of nicotine administered. However, when examined immunohistochemically, less established angiogenesis in the NE-CC group in the secondary follicle and corpus luteum may provide an explanation for the complex relationship between nicotine and ovulation problems.

Keywords: Ovulation induction, clomiphene citrate, nicotine, ki67 and CD34 expression

TABLE 1: Comparison of folliculer types and corpus luteum counts, the thickness of granulosa cell and immunohistochemical findings between groups

	NE-CC (n=8)	Only-CC (n=8)	Control (n=8)	P value
Primordial follicle count	5.2 (5± 3.05)	4.7 (4.5± 1.82)	4.5 (4± 2.32)	0.83
Primer follicle count	8.2 (8.5± 2.81)	9.3 (9± 3.88)	7.6 (7.5± 2.97)	0.56
Preantral follicle count	7.5 (8± 3.02)	9 (9± 3.77)	5.5 (4.5± 2.82)	0.12
Antral follicle count	8.6 (8.5± 4.10)	9.8 (9.5± 3.94)	9.5 (8.5± 4.17)	0.82
Corpus Luteum count	23 (22.5± 6.67)	16.1 (14± 9.3)	15.5 (15.5± 4.98)	0.09
Granulosa cell thickness (µm)	548.12 (536.5± 98.47)	497.75 (513± 69.90)	573.87(546.5± 150.54)	0.39
Ki67 Follicle (%)	4.5 (4± 1.41)	5.1 (5.5± 1.95)	5.1 (4.5± 1.55)	0.69
Ki67 Stroma (%)	1 (1± 0.00)	1.1 (1± 0.35)	1.1 (1± 0.35)	0.61
CD34 Seconder Follicle (1mm²)	0.87 (1±0.64)	2.1 (2±0.64)	2.8 (3±0.99)	0.00*
CD34 Corpus Luteum (1mm²)	8.5 (8±3.54)	9.5 (10±1.6)	13.2 (13±3.49)	0.01*
CD34 Stroma (1mm²)	14.1 (14.5±5.54)	6.6 (6.5±1.4)	12.5 (12.5±2.39)	0.00*

TABLE 2: Post-hoc analysis of groups and variables.

Depent Variable	Groups	Std. Error	95% CI	p value
Primordial follicle count	Control NE-C	-0.75±1.229	-3.66 2.16	0.769
	OnlyCC NE-C	-0.50±1.229	-3.41 2.41	0.888
Primer follicle count	Control NE-C	-0.62±1.630	-4.48 3.23	0.899
	OnlyCC NE-C	1.12 ±1.630	-2.73 4.98	0.717
Preantral follicle count	Control NE-C	-2.00±1.618	-5.83 1.83	0.375
	OnlyCC NE-C	1.50 ±1.618	-2.33 5.33	0.560
Antral follicle count	Control NE-C	0.87±2.037	-3.95 5.70	0.876
	OnlyCC NE-C	1.25±2.037	-3.57 6.07	0.767
Corpus Luteum count	Control NE-C	-7.50±3.607	-16.04 1.04	0.089
	OnlyCC NE-C	-6.87±3.607	-15.42 1.67	0.124
Granulosa cell thickness (µm)	Control NE-C	25.75±55.7	-106.3 157.8	0.858
	OnlyCC NE-C	-50.37±55.7	-182.4 81.6	0.575
Ki67 follicle (%)	Control NE-C	0.62±0.82	-1.34 2.59	0.675
	OnlyCC NE-C	0.62±0.82	-1.34 2.59	0.675
Ki67 Stroma (%)	Control NE-C	0.12±0.14	-0.21 0.46	0.600
	OnlyCC NE-C	0.12±0.14	-0.21 0.46	0.600
CD34 Seconder Follicle (1mm²)	Control NE-C	2.00±0.38	1.08 2.91	0.000*
	OnlyCC NE-C	1.25±0.38	0.33 2.16	0.008*
CD34 Corpus Luteum (1mm²)	Control NE-C	4.74±1.50	1.17 8.32	0.009*
	OnlyCC NE-C	1.00±1.50	-2.57 4.57	0.735
CD34 Stroma (1mm²)	Control NE-C	-1.62±1.78	-5.86 2.61	0.572
	OnlyCC NE-C	-7.50±1.78	-11.73 -3.26	0.001*

[Abstract: 0190] [OP-18] [Accepted: Oral Presentation]

Monocyte to HDL Cholesterol Ratio in Patients with Polycystic Ovary Syndrome

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Objective: Polycystic ovary syndrome (PCOS) is one of the most common endocrinopathy among women of reproductive age. It is characterized by oligo and/or anovulation, clinical and/or biochemical sign hyperandrogenism, and the appearance of polycystic ovaries on ultrasound. Women with PCOS are more likely than other women to have increased in obesity, insulin resistance, hyperandrogenism, and chronic low-grade inflammation. PCOS affects 5-10 % of women in reproductive age, and long-term complications include type 2 diabetes mellitus (DM), cardiovascular diseases (CVD), and infertility. There are various biomarker alterations associated with insulin resistance and low-grade inflammation in PCOS. Monocyte to HDL ratio (MHR) is a recently emerged inflammation-based marker and recent studies have shown that MHR is a new predictor and prognostic indicator of cardiovascular diseases. Therefore, we aimed to investigate the MHR alteration and its usefulness for prediction of cardiovasculary disease risk in PCOS.

Material-Methods: In the study population, we evaluated 26 consequtive patients with PCOS and 30 age and BMI-matched controls. PCOS was diagnosed with the Rotterdam criteria. MHR was compared between PCOS and control group. Relationship between MHR and the clinicopathological variables of PCOS were also evaluated. MedCalc Statistical Software Program version 17.2 (MedCalc, Belgium) was used for statistical analysis. A P-value of <0.05 was considered statistically significant.

Results: MHR was higher in PCOS group than the age and BMI matched non-PCOS subjects ($p<0.05$). MHR were significantly correlated with HOMA-IR and CRP levels in the PCOS group. There was no correlation between MHR and patients age.

Conclusions: Our study demonstrated that patients with PCOS have higher MHR than those of women in the control group. Increased MHR may be related to the future cardiovascular disease risk in PCOS patients. Further research is needed to evaluate the association between MHR and PCOS.

Keywords: Monocyte to HDL cholesterol ratio, cardiovascular disease, PCOS

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The Effects of Vitamin D Levels on Turkish Women's IVF Outcomes: A Prospective Cohort Study

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Objective: It is known that women with infertility have low vitamin D levels. There are conflicting results about potential impact of vitamin D deficiency on IVF outcomes. This study aimed to determine for the first time the vitamin D levels of Turkish women who underwent embryo transfer (ET), and to demonstrate the correlation between vitamin D levels and in vitro fertilization (IVF) results.

Material-Method: This is the first prospective cohort study from Turkey. The duration of the study was June 15, 2015, and April 1, 2016. A total of 208 infertile women who underwent IVF-ET were enrolled in the study. The vitamin D levels of women with ET were measured by assessing the circulating levels of 25-hydroxyvitamin D (25(OH)D). Pregnancy was defined by serially increasing serum β-hCG titers to at least 25 IU/L, within 12 days after the cleavage stage. Correlation analysis was used to evaluate the correlation of vitamin D levels with socio-demographic variables and infertility treatment results, and chi-square analysis was used to compare the pregnancy rates.

Results: The study found that 4.3% of women had replete vitamin D level (>30 ng/mL), 23.6% of women had insufficient vitamin D levels (20-29.99 ng/mL), and 72.1% of women had deficient vitamin D levels (<20ng/mL). Vitamin D levels of women decreased as their body mass index (BMI), infertility diagnosis and duration of infertility treatment increased. No statistically significant difference was found between chemical and clinical pregnancy rates and vitamin D levels (p values: 0.132 and 0.303, respectively).

Conclusion: The women who underwent ET in Turkey had very high rates of vitamin D deficiency, and there was no correlation between their vitamin D deficiencies and pregnancy results. It is suggested that the effects of vitamin D levels on pregnancy outcomes should be analyzed after applying a vitamin D support program at the beginning of ET.

Keywords: IVF Outcomes, Turkish Women, Vitamin D

[Abstract: 0096] [OP-20] [Accepted: Oral Presentation]

Survival of Chromosomally Abnormal Embryos to Blastocyst Stage

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Introduction: Several authors have suggested that many embryos arrest at the cleavage or morula stage during embryo culture. Previous studies proposed that embryo arrest at the morula stage may act as a selection against chromosomal abnormalities. The aim of this study was to evaluate the overall developmental outcome of embryos according to preimplantation genetic screening (PGS) results.

Material-Methods: Here we report the outcome of 21 intracytoplasmic sperm injection (ICSI) cases with PGS. All patients undergoing an ICSI treatment for male factor infertility and PGS with a day 5 embryo transfer schedule in 2013-2014 were enrolled in this study. PGS was performed to 15 cases due to multiple implantation failures (MIF), 4 cases due to MIF together with advanced maternal age (AMA) and 2 cases due to Robertsonian translocations. All cases were counseled by a human genetics specialist and informed written consent was obtained from each couple before PGS procedures. All cases underwent single blastomere biopsy on day 3 by laser zona dissection and aspiration. The survival and quality of chromosomally normal and abnormal embryos were analyzed retrospectively.

Results: The mean female age was found to be 31,71 ± 4,36 at all cases. Embryo transfer was not performed to 2 cases as all embryos were abnormal and clinical pregnancy results could not be obtained from 2 cases. The overall clinical pregnancy rate was 23,53% with an implantation rate of 15,79%. A total number of 121 blastomeres were analyzed, 52 were found to be normal, 65 blastomeres were abnormal and no result was obtained from 4 blastomeres. Complex aneuploidy was the most frequent abnormality (n=15). Other abnormalities were monosomies (n=21), trisomies (n=13), monosomy-trisomy combinations (n=3), haploidy (n=3), triploidy (n=2), tetraploidy (n=1), polyploidy (n=1), XXY (n=1), chaotic (n=2) and multinuclear fragmentation (n=3). Of the 52 normal embryos, 7 were arrested at the cleavage stage and 16 were arrested at the morula stage. Of the 65 abnormal embryos, 30 were arrested at the cleavage stage and 21 were arrested at the morula stage. Arrested development at the cleavage stage was 13,46% for the normal embryos and 46,15% for the abnormal embryos (P<0,001). The overall embryo development rate of normal and abnormal embryos to blastocyst stage was 55,77% and 21,54% respectively (P<0,001).

Conclusions: 13% of the normal embryos and 46% of the abnormal embryos may arrested at the cleavage stage during extended culture to the blastocyst stage. Our study shows that culture to blastocyst stage may further select against some chromosomal abnormalities, but it should be clarified that, although abnormal embryos have limited potential of development to the blastocyst stage, day 5 embryo morphology could not be used to select chromosomally normal embryos for transfer due to our observations that abnormal embryos-although less than the normal ones-may develop into blastocysts. Ongoing pregnancy rates and expanded genetic investigations are needed to clarify the developmental potential of normal and abnormal embryos to the viable offspring.

Keywords: Preimplantation genetic screening, assisted reproduction, blastocyst

[Abstract: 0098] [OP-21] [Accepted: Oral Presentation]

The Effect of Estrogen Replacement in Addition to Progesteron for Luteal Phase Support in IVF-ICSI Antagonist Cycles

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Study question: To find out the effectiveness of the estrogen replacement for luteal phase support in antagonist cycles.

Summary answer: There were no significant differences between groups in terms of clinical pregnancy, biochemical pregnancy, ongoing pregnancy and abortus ratios.

What is known already: There are little studies about estrogen replacement in luteal phase support. Studies related with agonist cycles gave very little effectiveness of estrogen replacement in luteal phase support but these are not proved by meta-analyses. Studies related with IVF-ICSI antagonist cycles are newly published and we don't have any metaanalyses related with this procedure. In order to find out the effectiveness of estradiol in antagonist cycles for luteal phase support was our main aim in the study.

Study design, size, duration: Retrospectively two groups were designed in our study. In group one only progesteron has been used both vaginally and intramuscularly. In group two we added estradiol TTS 7.8 mg daily. In each group we have 64 patients and we have followed the patients until clinical pregnancies. Luteal phase support in each group has been administered until ten weeks of gestational age. In group two estradiol replacement has been stopped at the day of βhCG result.

Participants/materials, setting, Methods: In this retrospective study, patient files were scanned and group which had GnRH antagonist protocol, having daily transdermal (7.8 mg) E2 supplementation in luteal phase support was compared with control group in terms of pregnancy outcomes. The study and control group consists of 64 patients. β-hCG levels of all patients were measured 12 days after embryo transfer. If the result is positive, estradiol is discontinued and progesterone support is continued until the 10th week of gestation.

Main results and the role of chance: In our study, the use of estrogen in the GnRH antagonist protocol luteal phase support did not show any positive or negative effects on pregnancy outcomes. Although pregnancy rates are not statistically significant in the control group, they are higher than in the study group. The statistically insignificant tendency may be due to limited sample size. In IVF, if the main success criterion is expressed by the number of live births, the results of long term pregnancy registration of the patients are needed to express this. For a more objective assessment, there is a need for prospective studies comparing the numbers of live births with larger sample sizes, with a more homogeneous distribution of demographic characteristics

Limitations, reasons for caution: No limitations.

Wider implications of the Findings: For a more objective assessment, there is a need for prospective studies comparing the numbers of live births with larger sample sizes, with a more homogeneous distribution of demographic characteristics.

Keywords: Luteal phase support, estradiol, antagonist protocol

[Abstract: 0104] [OP-22] [Accepted: Oral Presentation]

Folikuler Sıvı Gelatinaz Düzeyinin Oosit Kalitesi ve Fertilizasyona Etkisi

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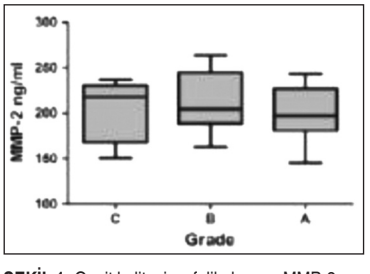
Amaç: Matriks metalloproteinazlar (MMP) ve bunların aktivitesini dengeleyen doku inhibitörleri (TIMP) tarafından düzenlenen doku remodelingi folikulogenez, ovulasyon, korpus luteum formasyonu ve regresyonu ve implantasyon gibi pek çok reproduktif süreçte gereklidir. Gelatinazlar, MMP ailesinin bir üyesi olup çinko bağımlı proteolitik enzimlerdir ve MMP-2 ve MMP-9 olmak üzere 2 tipi vardır. İnsanda granuloza hücrelerinde, preimplante embriyolarda, servikal fibroblastlar, trofoblastlar ve endometrial stromal hücrelerde gelatinaz ekspresyonu gösterilmiştir. Preovulatuar folikullerde gelatinaz aktivitesinin arttığı ve ovulasyonda folikul duvarının kollajen içeriğinin gelatinazlar tarafından parçalanarak azaldığı rapor edilmiştir. Çalışmamızın amacı açıklanamayan infertilitesi olan hastaların folikul sıvısında MMP-2, MMP-9 ve TIMP seviyeleri ile oosit kalitesi ve fertilizasyon arasındaki ilişkiyi değerlendirmek ve farklı iki invitro fertilizasyon (IVF) protokolu arasındaki folikuler sıvı gelatinaz ve TIMP seviyelerini karşılaştırmaktır.

Materyal Metod: Açıklanamayan infertilite nedeniyle IVF tedavisine giden 60 hasta çalışmaya alındı. Sistemik hastalık ve kronik ilaç kullanımı olan hastalar çalışma dışında bırakıldı. 30 hastaya gonadotropin releasing hormon (GnRH) agonisti ile uzun, 30 hastaya ise GnRH antagonisti ile kısa protokol uygulanarak rekombinant ve/veya üriner folikul stimulan hormon (FSH) ile kontrollu overyan stimulasyon yapıldı. Oosit pick-up işlemi sırasında her folikulden ayrı ayrı folikul sıvısı toplanarak folikuler sıvı gelatinaz seviyeleri ticari kitle, ELISA yöntemiyle (Boster MMP-2 ve MMP-9 ELISA Kit, California, USA) ölçüldü. Alınan oositlerin kalitesi ışık mikroskobunda bakılan 4 parametreye göre değerlendirildi (Tablo 1). Parametrelerden toplam 3-4 puan alan oositler grade A (iyi kalite), 2-3 puan alan grade B, 0-1 puan alan oositler grade C (kötü kalite) olarak kabul edildi. Hastalar toplanan metafaz II (MII) oosit sayısına göre iki gruba ayrıldı. MII<=5 ise 'poor responder', MII>5 ise 'normoresponder' olarak adlandırıldı. Tüm oositlere intrastoplazmik sperm injeksiyonu yapıldı ve 2 pronukleus görülen oositler fertilize olarak kabul edildi.

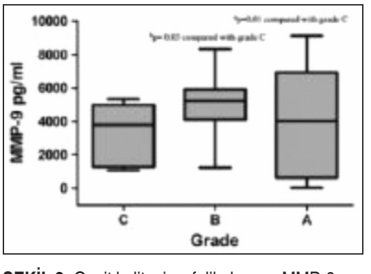
Sonuçlar: Agonist protokol uygulanan gruptaki hastaların yaş ortalaması (32.8±4.8) antagonist gruba göre (29.7±4) anlamlı olarak daha yüksekti (p=0.01). Vücut kitle indeksi, 3. gün bakılan hormon seviyeleri, toplanan oosit sayısı ve fertilize oosit sayısı açısından agonist ve antagonist grup arasında fark yoktu. MMP-2 ve MMP-9 seviyesi agonist grupta (231.0±13.3 ng/mL, 5.671±1.582 pg/mL, sırayla) antagonist gruba göre (179.7±23.2 ng/mL, 4.060.1±1.965 pg/mL, sırayla) daha yüksekti (p=0.001) (Tablo 2). Fertilize oositlerdeki MMP-2 seviyesiyle (208.2±31.6 ng/mL) fertilize olmayan oositlerdeki MMP-2 seviyesi (186.6±29.1 ng/mL) farklılık göstermezken (p=0.5), MMP-9 seviyesi fertilize grupta (5.095±1.850 pg/mL) nonfertilize gruba göre (3.374±2.012 pg/mL) anlamlı olarak artmıştı (p=0.02). Toplanan oosit sayısına göre poor responder ve normoresponder grup karşılaştırıldığında her iki grup arasında folikuler sıvı MMP-2 ve MMP-9 seviyeleri homojen olarak dağılmıştı (p=0.9, p=0.5, sırasıyla). Oosit kalitesi ve gelatinaz seviyeleri arasındaki ilişkiye bakıldığında folikuler sıvı MMP-2 seviyeleri grade A, B ve C oositler arasında homojen olarak dağılmıştı (Şekil 1). MMP-9 seviyesi ise grade A oositlerde grade C oositlere göre (p=0.01), grade B oositlerde ve grade C oositlere göre anlamlı olarak dha yüksek bulundu (p=0.03) (Şekil 2).

Sonuç: Folikuler sıvıda artmış MMP-9 seviyesi açıklanamayan infertilitesi olan hastalarda yüksek oosit kalitesi ve fertilizasyon potansiyeli ile ilişkilidir. Daha yüksek doz gonadotropin uygulaması, GnRH agonistin flare-up etkisi ve hasta yaşları arasındaki farklılık GnRH agonist protokolu uygulanan gruptaki yüksek gelatinaz seviyelerinin nedenleri olabilir. GnRH agonist protokol uygulamasının gelatinaz seviyesi üzerindeki pozitif etkisi ileri araştırmalarla araştırılmalıdır.

Anahtar Kelimeler: Gelatinaz, in vitro fertilizasyon, oosit kalitesi



ŞEKİL 1: Oosit kalitesi ve folikuler sıvı MMP-2 seviyesi arasındaki ilişki.



ŞEKİL 2: Oosit kalitesi ve folikuler sıvı MMP-9 seviyesi arasındaki ilişki.

TABLO 1: Oosit kalitesini değerlendirmede kullanılan parametreler.

Parametre	0 puan	1 puan
Zona pellusida	>15 mm kalınlık, pürüzlü	<15 mm kalınlık, düzgün
Previtellin aralık	Debris var	Debris yok
Polar cisim	Büyük fragmente	Non-fragmante
Sitoplazmik granulasyon	Santral	Homojen

'Işık mikroskobunda bakılan 4 parametreye göre oositlerin kalitesi değerlendirildi' cümlesinden sonra.

TABLO 2: Agonist ve antagonist protokol verilen hastaların karakteristikleri ve folikuler sıvı gelatinaz seviyeleri.

	Agonist protokol	Antagonist protokol	p
Yaş	32.8±4.8	29.7±4	0.01
Oosit sayısı	7.5±4.3	7.8 ±5.1	0.8
VKI	25.2±2.9	26.4±4.4	0.4
Fertilize oosit sayısı	3.53±1	4.0±4	0.6
FSH(mIU/mL)	6.6±2.1	7.4±2.8	0.1
LH (mIU/mL)	5.1±2.9	7±5.1	0.1
E2 (pg/mL)	68.8±35.3	64.16±45.8	0.6
MMP-2 (ng/mL)	231.0±13.3	179.7±23.2	0.001
MMP-9 (pg/mL)	5.671±1.582	4.060±1.965	0.001

VKI: Vücut kitle indeksi FSH: Folikul stimulan hormon LH: Luteinize hormon E2: Estradiol MMP: Matriks metalloproteinaz.

[Abstract: 0176] [OP-23] [Accepted: Oral Presentation]

Blastocyst Vitrification Despite Poor Oocyte Maturation in a Patient with Lymphoma, Whose Pregnancy was Recognized During Random Start Ovarian Stimulation

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Background: Embryo/oocyte cryopreservation seems among the best options where possible for fertility preservation in women suffering from malignant diseases. However, in those who need to start a cytotoxic treatment very soon, one of the biggest challenges in fertility preservation is the time required to complete the ovarian stimulation. To preclude this problem random start controlled ovarian hyperstimulation (RS-COH) protocols have come into use. Here, we present a patient with diffuse large B cell lymphoma whose pregnancy was recognized during treatment.

Case: A 28-year-old woman who had a newly diagnosed diffuse large B cell lymphoma (active B cell type) was referred to our Fertility Preservation Unit. She was scheduled for chemotherapy plus rituximab therapy (R-CHOP) soon. At admission she was on 19th day of her menstrual cycle. Ultrasonography revealed 10 mm endometrial thickness and normal sized ovaries with 10 antral follicles. Her hormonal profile was as follows; estradiol: 202 pg/ml, progesterone: 11.2 ng/ml, FSH: 0.3 IU/L, LH: 0.1 IU/L. Hence, RS-COH was started immediately by letrozole 5mg/day plus recombinant follicle stimulating hormone (rFSH) 200 IU/day. On day 4, estradiol was 58 pg/ml and progesterone was 9.4 ng/ml. Starting at day 5 rFSH dose was set to 150 IU/day and 75 IU/day hMG was added to protocol. On day 6, an 8 mm of gestational sac was recognized and ß-hCG was 7867 IU/L. However, because of the time constraints COH was continued. On day 9 GnRH antagonist was added to the protocol. On day 12 estradiol was 591 pg/ml and progesterone was 16.1 ng/ml. After 12 days of stimulation 40 microgram of leuprolide acetate was administered when the largest three follicles attained a mean diameter of 18 mm, while general cohort follicles >13 mm. Dilatation and curettage was also performed under general anesthesia immediately after oocyte retrieval. Among 10 retrieved oocytes, only three were evaluated as matured with intensely granulated cytoplasm. Two metaphase-I and 5 GV oocytes were incubated overnight for in vitro maturation in embryo culture medium and next morning ICSI was performed on 3 metaphase-II oocytes. All of the inseminated, in vitro matured oocytes were fertilized and cleaved normally in successive days. On the 5th day of insemination, 2 early blastocysts were vitrified.

Discussion: Progressive rise in progesterone or LH levels on the day of ovulation induction may result in poor oocyte quality and IVF outcome. Premature luteinization in granulose cells of growing follicles may result in compromised follicle development and oocyte maturation. High levels of ß-hCG in presented case resulted in high progesterone levels and secondary luteinizing effect. We believe that diminished maturation rate (30%) and arrested fertilization of in vivo matured oocytes may due to premature luteinization and incomplete cytoplasmic competence. On the other hand, avoiding suboptimal endocrine microenvironment by incubating in vitro, may trigger meiosis and remove suppressive effect of high progesterone and ß-hCG. Patients with high progesterone levels on the day of ovulation induction may benefit from overnight in vitro maturation of oocytes despite low maturation rates.

Keywords: Pregnancy, progesterone, random start controlled ovarian hyperstimulation

[Abstract: 0187] [OP-24] [Accepted: Oral Presentation]

Oosit Toplama İşlemi Sırasında Kullanılan Anestezik Ajanların İn vitro Fertilizasyon Sonucuna Etkisi

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Giriş ve Amaç: İn vitro fertilizasyon (IVF) başarısında oosit pick-up (OPU) aşaması önemlidir çünkü fertilizasyon, embryo kalitesi ve implantasyon iyi oosit kalitesi gerektirir. OPU ağrılı bir prosedur olduğundan işlem sırasında anestezi gereklidir. Genel anestezi OPU sırasında en sık kullanılan yöntemdir ancak kullanılan anestezik ilaçlar hakkında konsensus sağlanamamıştır. OPU'da en sık kullanılan anestezik ajan propofoldur. Propofol, postoperatif dönemde yan etkinin az görüldüğü kısa etkili bir ilaçtır. Ancak farelerde fertilizasyon oranını (FO) azalttığı ve blastokist gelişimini inhibe ettiği bulunmuştur. Ketamin genel anestezi için kullanılan kısa etkili bir ajandır. Kardiak ve respiratuar sisteme minimal depresif etkili olması ve iyi analjezik etkisi avantajlarıyken, bulantı kusma, psikomimetik etkilerin sık görülmesi ve uzun ayılma süresi dezavantajlarıdır. Ketamin ve tiopental kıyaslandığında benzer IVF sonuçları bulunmuştur. Propofol ve ketamin kombinasyonu (P/K) kısa süreli sedasyon ve analjezi için uygundur. P/K kullanımıyla, ketamine kıyasla, daha az hemodinamik instabilite ve respiratuar depresyon görülürken daha az yan etki gözlenmiştir. Çalışmamızda OPU'da kullanılan propofol, ketamin ve P/K kombinasyonunun IVF sonuçlarına etkisini araştırmayı amaçladık.

Yöntem Gereç: Retrospektif olarak 2014-2017 yılları arasında kliniğimize IVF tedavisi için başvuran 333 hasta çalışmaya alındı. Hastalar OPU sırasında kullanılan anestezik ajana göre 3 gruba ayrıldı: Propofol (n=217), ketamin (n=60) ve P/K (n=56). Dosyalardan demografik veriler, bazal hormon seviyeleri, infertilite etyolojisi, kullanılan stimulasyon protokolu, gonadotropin tipi, anestezik ajan ve dozu, anestezi süresi, toplanan oosit sayısı, metafaz II (MII) sayısı, fertilizasyon, embriyo sayısı ve kalitesi sonuçları incelendi. MII oranı (MII/toplanan oosit sayısı), FO (embriyo/MII sayısı), implantasyon (pozitif β-hCG), klinik gebelik (gestasyonel kese varlığı), eve bebek götürme oranları (canlı bebek doğumu) kaydedildi. Ketamin/propofol hipersensitivitesi, kronik hastalık, bronkokonstruktif hastalık, endokrinopatiler, kanser, enfeksiyon hastalığı, otoimmun hastalık ve kokain/opiat/glikokortikoid kullanımı olanlar çalışma dışına bırakıldı.

Bulgular: Yaş, BMI, infertilite süresi, bazal hormon seviyesi gruplar arasında homojendi. Total sperm sayısı gruplar arasında benzer olmasına rağmen motil sperm yüzdesi, özellikle progresif hızlı sperm (%A), ketamin grubunda propofole göre daha düşüktü. İnfertiliteye neden olan etyolojik nedenler gruplar arasında benzerdi. Tüm hastalara antagonist protokolü kullanılmıştı. Çoğu hastaya ise rekombinant folikul stimulan hormon (r-FSH) ve üriner FSH (u-FSH) kombinasyonuyla beraber kullanılmıştı. Gonadotropin tipi, başlangıç dozları, zayıf overyan cevap varlığı (<5 oosit) ve anestezi süresi gruplar arasında benzerdi. Propofol grubundaki propofol dozu ve ketamin grubundaki ketamin dozu P/K grubuna göre anlamlı olarak daha düşüktü (Tablo 1). Total oosit ve MII sayısı açısından gruplar benzerken, MI sayısı ketamin grubunda propofole göre yüksekti. MII oranı, embriyo sayısı ve kalitesi homojen dağılmıştı. FO ketamin grubunda propofol grubu ve P/K grubuna kıyasla daha düşüktü. FO açısından propofol ve P/K grubu arası fark yoktu. İmplantasyon, klinik gebelik ve eve bebek götürme oranları açısından gruplar arası fark yoktu (Tablo 2). Yaş, VKI, infertilite etyolojisi, anestezi süresi, sperm motilitesi ve progresif hızlı sperm yüzdesi kovariat olarak alındığında ketamin kullanımı ve endometriozis varlığının normal FO (>%60 FO) üzerine negatif etkisi bulundu (Tablo 3). İmplantasyon, klinik gebelik ve eve bebek götürme üzerine yaş harici diğer parametrelerin anlamlı etkisi yoktu. Anestezi süresi ve oosit parametreleri ve FO arasında herhangi bir korelasyon bulunmadı (p=0.4, r=0.49).

Sonuç: OPU sırasında ketamin kullanımı, propofol ve P/K kombinasyonu ile kıyaslandığında fertilizasyon oranı üzerine negatif etkilidir.

Anahtar Kelimeler: IVF başarısı, propofol, ketamin, propofol ketamin kombinasyonu (P/K)

TABLO 1: Bazal demografik veriler, overyan stimulasyon karakteristikleri ve anestezik parametreler.

	Propofol grubu n=217	Ketamin grubu n=60	P/K grubu n=56	p değeri
Yaş (yıl)	31.94±5.91	31.73±4.81	30.58±5.19	0.2
VKİ (kg/m²)	25.8±4.79	25.12±4.5	25.61±4.7	0.6
İnfertilite süresi (yıl)	6.46±4.58	7.13±3.65	5.9±3.93	0.3
FSH (mIU/ml)	8.99±6.3	7.52±2.38	8.57±4.51	0.1
LH (mIU/ml)	5.98±4.08	5.20±3.04	6.43±8.83	0.4
E2 (pg/ml)	58.43±65.88	56.86±43.54	60.79±86.43	0.9
PG (ng/ml)	1.01±1.37	0.85±0.90	0.81±0.38	0.4
Sperm parametreleri				
Total sperm sayısı (milyon)	60.52±60.81	65.87±88.23	66.03±69.78	0.7
Motilite (%)	45.88±25.13	33.08±24.21	44.26±26.14	0.002*
A (%)	12.98±13.74	7.71±10.55	11.89±14.06	0.026**
B (%)	32.3±20.44	25.68±18.92	32.5±21.66	0.07
C (%)	12.23±9.77	14.33±12.8	12.25±9	0.3
İnfertilite etyolojisi				
PKOS	34/217 (15.7%)	6/60 (10%)	8/56 (14.3%)	0.16
Açıklanamayan	60/217 (27.6%)	17/60 (28.3%)	14/56 (25%)	
DOR	50/217 (23%)	10/60 (16.7%)	14/56 (25%)	
Tubal	19/217 (8.8%)	0/60 (0%)	2/56 (3.6%)	
Endometriozis	3/217 (1.4%)	1/60 (1.7%)	1/56 (1.8%)	
Erkek faktörü	51/217 (23.5%)	26/60 (43.3%)	17/56 (30.4%)	
Sigara kulllanımı (%)	16/217 (7.4%)	5/60 (8.3%)	8/56 (14.3%)	0.2
Alkol kullanımı (%)	1/217 (0.5%)	0/60 (0%)	0/56 (0%)	0.7
Gonadotropin tipi				
r-FSH (%)	64/217 (29.5%)	15/60 (25%)	15/56 (26.8%)	0.7
u-FSH+r-FSH	153/217 (70.5%)	45/60 (75%)	41/56 (73.2%)	
r-FSH başlama dozu	249.02±62.40	232.91±64.35	238.39±55.58	0.1
u-FSH başlama dozu	132.18±42.46	140.55±39.27	143.75±26.4	0.1
Zayıf overyan cevap (<5 oosit)	72/217 (33.3%)	18/60 (30.5%)	17/56 (30.4%)	0.8
Anestezi süresi (dk)	27.28±12.15	24.16±8.49	28.83±12.32	0.8
Anestezik ilaçların ortalama dozu (mg)	156.08±47.37	88.03±28.34	P=139.28±50.37 K=44.55±18.93	<0.0001

VKI: Vücut kite indeksi; FSH: Folikul stimulan hormon; LH: Luteinizan hormon; E2: Estradiol; PG: Progesteron; TSH: Troid stimulan hormon; PRL: Prolaktin; A: Progresif hızlı sperm yüzdesi; B: Progresif yavaş sperm yüzdesi; C: Nonprogressive sperm yüzdesi; PKOS: Polikistik over sendromu; DOR: Düşük overyan rezerv; r-FSH: Rekombinan folikul stimulan hormon; u-FSH: Üriner folikul stimulan hormon. OHSS: Overyan hiperstimulasyon sendromu. *: p değeri Bonferroni testi ile propofol ve ketamin grubu arasında anlamlı (p=0.002), propofol ve P/K grubu (p=1) ve ketamin ve P/K grubu arasında (p=0.052) anlamlı değil. **: p değeri Bonferroni testi ile propofol ve ketamin grubu arasında anlamlı (p=0.02), propofol ve P/K grubu (p=1) ve ketamin ve P/K grup arasında anlamlı değil (p=0.2).

TABLO 2: Bazal demografik veriler, overyan stimulasyon karakteristikleri ve anestezik parametreler.

	Propofol grubu n=217	Ketamin grubu n=60	P/K grubu n=56	p değeri
Total oosit sayısı	8.62±6.7	9.8±7.57	8.83±6.93	0.4
MII sayısı	5.86±4.66	6.55±4.97	5.89±4.49	0.6
MI sayısı	1.21±1.5	1.94±2.3	1.26±1.51	0.011*
MII oranı	68.71±24.4	70.98±20.47	70.54±22.94	0.7
Embriyo sayısı	3.56±3.03	3.1±3.34	3.92±2.82	0.3
Embriyo kalitesi				
Grade 1 (n%)	141/161 (87.6%)	37/41 (90.2%)	42/44 (95.5%)	
Grade 2 (n%)	17/161 (10.5%)	3/41 (7.3%)	1/44 (2.3%)	0.6
Grade 3 (n%)	3/161 (1.9%)	1/41 (2.4%)	1/44 (2.3%)	
FO (%)	54.65±32.73	40.49±32.89	59.62±29.82	0.005**
İmplantasyon (n%)	36/158 (22.8%)	4/40 (10%)	10/43 (23.3%)	0.1
Klinik gebelik (n%)	27/158 (17.1%)	4/40 (10%)	9/43 (22.5%)	0.3
Eve bebek götürme (n%)	25/158 (15.8%)	3/40 (7.5%)	6/43 (14%)	0.4

MII: Metafaz II; MI: Metafaz I; FO: Fertilizasyon oranı. *: p değeri Bonferroni testi ile propofol ve ketamin grubu arası anlamlı (p=0.009), propofol ve P/K grubu (p=1) ve ketamin ve P/K grubu arası anlamlı değil (0.09). **p değeri Bonferroni testi ile propofol ve ketamin grubu (p=0.013) ve ketamin ve P/K grubu arası anlamlı (p=0.008), propofol ve P/K grubu arası anlamlı değil (p=1).

TABLO 3: Anestezik ilaçların fertilizasyon oranı üzerine prediktif etkisi

	β	p değeri	OR	95% CI for OR
Endometriozis		0.028		
PKOS	0.11	0.91	1.12	0.14-8.72
Açıklanamayan				
Ketamin	0.19	0.85	1.21	0.16-9.07
DOR	0.67	0.52	1.96	0.25-15.35
Tubal	0.67	0.54	1.962	0.22-17.22
Erkek	-0.54	0.59	0.58	0.07-4.4
P/K		0.028		
Propofol	-0.35	0.28	0.7	0.36-1.34
Ketamin	-1.08	0.01	0.33	0.14-0.77

Kovariatlar: Yaş, VKI, infertilite etyolojisi, motil sperm yüzdesi, progresif hızlı sperm yüzdesi, kullanılan anestezik ilaç, anestezi süresi. PKOS: Polikistik over sendromu; DOR: Düşük overyan rezerv; P/K: Propofol ketamin kombinasyonu.

[Abstract: 0211] [OP-25] [Accepted: Oral Presentation]

Effect of Freze All Embryos on Pregnancy Rates, If not Suitable for Embryo Transfer

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Objective: The aim of the study is to analyse pregnancy rates in the first transfer cycle of couples whose was performed single fresh embryo transfer compared to those whose single frozen embryo transfer was done after vitrification of available embryos due to any clinical and personal conditions.Elective frozen embryo transfer has been yield better pregnancy rates than fresh embryo transfer. Optimization of the implantation environment and endometrial receptivity are important. Fresh embryo transfer with supra-physiological levels of hormones has been suggested to have an adverse effect on implantation. Freeze all embryos technique will not be detrimental for pregnancy rates and it is a good choice when there is no suitable condition for fresh embryo transfer. Some ICSI cycles are encountered with high progesterone levels in the late follicular phase, risk of ovarian hyperstimulation syndrome, uterine factors(polyps,fibroids, inadequate endometrium,etc) personal conditions,etc. In such cases, freze all embryos can be a good option to improve pregnancy rates by deferring the transfer to a later naturally or medically assisted cycle.

Material-Methods: A retrospective case control study including all the consecutive 108 couples with elective freze all embryos and the 260 couples with single fresh transference in first cycle performed between May 2015 and September 2016, was done. Only women with a good prognosis under 35 years of age in their first ICSI cycle with at least two good quality embryos. A Fisher's test ($p < 0.05$) was used for statistic analysis.

Results: 72.83% of them had positive beta-hCG results,70.65% had clinical pregnancy rates in 108 elective freze all group in which the single embryo was transferred. 147 out of the 260 good prognosis women receiving single fresh embryo transfer had positive beta-hCG results (57.65%.).Clinical pregnancy rates of fresh ET group were found to be 55.69%. Both biochemical and clinical pregnancy rates of women undergoing frozen ET increased significantly ($p<0.012$ and $p<0.013$, respectively). Significantly higher live birth rates were observed in frozen ET group. (59.87% vs. 42.63% $p<0.05$)

Conclusion: Embryo vitrification yields a high embryo viability in good quality conditions and produce comparable results in terms of pregnancy rates in subsequent cycles, permitting the correction or avoidance of clinical and personal conditions. Frozen single embryo transfer was associated with higher pregnancy and live birth rates when compared to fresh single embryo transfer.

Keywords: Single embryo transfer, Fresh embryo transfer, Frozen embryo transfer, Pregnancy rate

[Abstract: 0225] [OP-26] [Accepted: Oral Presentation]

Does Sperm Selection Technique Improve Early Morphokinetic Parameters and Clinical Outcomes in Couples with History of Previous IVF Failures, Previous Low Fertilization Rate or Low Embryo Quality?

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Objective: Sperm quality has direct influence on fertilization and embryonic development. It was suggested that sperm that binds to hyaluronic acid (HA) have normal shape, minimal DNA fragmentation and low frequency of chromosomal aneuploidies. Physiological Intracytoplasmic Sperm Injection (PICSI) is a technique that use HA for selecting the best possible sperm for fertilisation in the IVF protocol. The aim of this study was to investigate the effect of sperm selection using PICSI on morphokinetic parameters of time-lapse monitored cleavage stage embryos and pregnancy outcomes in couples with history of previous IVF failures, previous low fertilization rate or low embryo quality. We used the conventional ICSI patients who underwent their first IVF cycles and are assumed to have better outcomes as a control group.

Design: Retrospective, single-center clinical study.

Materials-Methods: Between October 2014 and March 2017, a total of 235 IVF cycles were included in this retrospective study. 85 cycles were carried out by PICSI (patients with history of multiple IVF failures, previous low fertilization rate or low embryo quality) and 150 cycles were carried out by conventional ICSI (patients who underwent their first IVF cycles). All female participants were under 40 years of age having no endocrinological disease. Embryos were cultured in an incubator with time lapse technology (Embryoscope®). Cleavage timing from insemination to day 3 was studied and all morphokinetic parameters have been taken into account. Single, day 3 fresh embryo was transferred in all IVF cycles. Fertilization rates, Grade A embryos rates, chemical pregnancy, clinical pregnancy and live birth rates were studied and compared among the two groups.

Results: Mean female age was 31.94±4.55 in ICSI group and 32.25±4.1 in PICSI group. There was no significant difference between groups in terms of age, body mass index (BMI), retrived oocytes, MII oocytes and number of transferred embryos. There was no statistically significant difference in the fertilization rates and Grade A embryos rates between the ICSI and PICSI groups (56% vs 57%, p =0.568 and 64% vs 55% p =0.567). The clinical outcome measures; chemical pregnancy, clinical pregnancy and live birth rates and abortion rates were similar between groups (62%, 45%,39% and 8% in ICSI group and 58%, 38%,29% and 7% in PICSI group, respectively; p=>0.05 for all).Regarding morphokinetic embryo parameters for IVF cycles; the times from insemination to tPnf, t2, t4, t3-t2, t4-t3 and t5-t3 were comparable between two groups but tpNa, t3, t5, t6, t7, t8 parameters were significantly shorter in the PICSI group.

Conclusion: Our study showed that PICSI improves embryo morphokinetic parameters and clinical outcomes when it is used in couples with history of previous IVF failures, low fertilization rate and low embryo quality andthese patients have similar pregnancy outcomes compared to conventional ICSI patients who underwent first IVF cycles.

Keywords: ICSI, PICSI, infertility, sperm, selection

[Abstract: 0260] [OP-27] [Accepted: Oral Presentation]

Treatment of Azoospermic Patients with Maturation Arrest Using Round Spermatids

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Purpose: Is to report a case of a non-obstructive azoospermic case with maturation arrest at round spermatid stage and round spermatid injection to fertilise oocytes.

Design: Case report

Setting: Private IVF Centre

Patient: A 36 year old male patient with non-obstructive azoospermia.

Intervention: TESE with no sperm retrieval, round spermatid injection (ROSI), artificial oocyte activation (AOA), FISH.

Main outcomes: Fertilisation, cleavage, policy of the embryo, pregnancy outcome.

Results: The fertilisation rate of the cycle were found to be 66% with 100% cleavage rate. One of the embryos that was fertilised were found to be euploid (with FISH with blastomere on day 3) and the other was found to be 46XXXX. One euploid embryo was transferred with negative pregnancy outcome.

Conclusions: In the light of this case and the present literature, it is possible fertilise human oocytes with the aid of AOA and to have normal embryo development with euploid chromosomal status.

Keywords: Azoospermia, male factor infertility, round spermatid, maturation arrest, ICSI

[Abstract: 0099] [OP-28] [Accepted: Oral Presentation]

Polycystic Ovarian Syndrome (PCOS) this Mysterious Disease

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The pathophysiology of PCOS is not completely understood. PCOS is not a reproductive pathology but a systemic disease that starts early in intrauterine life. There is a great advancement in diagnosis and prevention of PCOS including hormonal contraceptives, antiandrogen drugs, metformin and inositols. Hyperinsulinaemia and insulin resistance are as important as obesity and hirsutism. Research in this field may shed more light on this condition.

Keywords: PCOS, pathophysiology, infertility

[Abstract: 0131] [OP-29] [Accepted: Oral Presentation]

Açıklanamayan İnfertilitede Histereskopinin Rolü

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Amaç: Açıklanamayan infertil çiftlerde uterin kavitenin değerlendirilmesinde ilk basamak transvaginal ultrason ve histerosalpingografidir (HSG).Bu çalışmanın amacı açıklanamayan infertile olgularda uterin kavitenin değerlendirilmesi ve histereskopinin rolünün belirlenmesidir.

Yöntem: Ağustos 2015- Eylül 2016 tarihleri arasında Akşehir Devlet Hastanesi Kadın Hastalıları ve Doğum bölümüne başvurmuş en az iki yıl korunmasız cinsel ilişkiye rağmen gebelik elde edememiş yaşları <35 yıl olan 76 infertil hasta çalışmaya dahil edilmiştir. İnfertiliteye neden olan diğer tüm nedenler dışlanmıştır. Tüm hastalara jinekolojik muayene, transvaginal ultrasonografi ve HSG yapılmıştır. Menstrual siklüsün 7-12.günleri arasında histereskopi uygulanmıştır. 4mm rijid histereskop 30 derece optik kullanılmıştır (Karl Storz Endoscopy, Almanya) ve histereskopi sonuçları kaydedilmiştir.

Bulgular: Hastaların ortalama yaşı 28.6±1.2'idi. 45 (%59.2) hasta primer infertil, 31(%40.8) hasta sekonder infertile olarak değerlendirildi. Hastaların ortalama infertilite süresi 4.3±2.1 olarak saptandı. Histereskopi bulguları değerlendirildiğinde 51 hastanın normal bir uterin kavite normal tubal ostiumlara sahip olduğu görüldü. 3(%3.95) hastada stenotik servikal os saptanırken, 6 (%7.89) hastada uterin sineşi bulundu. Histereskopi sonucuna göre 2 (%2.63) hastada arkuat uterus, 11(%14.5) hastada endometrial polip, 3 (%3.95) hastada ise submüköz myom tespit edilmiştir.

Sonuç: İnfertilite nedeniye başvuran hastaların %10-20'sinde infertilite nedeni bulunamamaktadır. Uterin kavite anomalileri infertil hastaların ~%3'ünde görülmektedir. Fertilite oranlarının iyileştirilmesi ve yardımcı üreme tekniklerinin başarısının artırılması için histereskopi hızlı uygulanabilir, güvenli bir yöntemdir. Histereskopi sırasında uterin kavite patolojilerinin ayırıcı tanısı yapılırken eş zamanlı olarak patolojinin tedavisi de mümkündür. Çalışmamızın sonucunda açıklanamayan infertil olgularda histereskopi uygulanabileceği ve bunun sonucunda uterin kavite patolojilerinin saptanarak tedavi edilebileceğini saptadık.

Anahtar Kelimeler: Açıklanamayan infertilite, histereskopi, uterin kavite, polip

TABLO: Histereskopi sonuçları.

Histereskopi Bulguları	Hasta sayısı n=76 (%)
Normal uterin kavite+ tubal ostiumlar	51 (%67.1)
Stenotik internal/eksternal servikal os	3 (%3.95)
İntrauterin Sineşi	6 (%7.89
Müllerian Anomali (Arkuat Uterus)	2 (%2.63)
Endometrial Polip	11 (%14.5)
Submüköz Myom	3 (%3.95)

[Abstract: 0144] [OP-30] [Accepted: Oral Presentation]

Pregnancy Success Rate at Recurren Implantation Failure Patients After Hysteroscopic Endometrial Injury

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Aim: Aim of this study is improving embryo implantation after hysterescopy fundal endometrial injury. In repeated implantation failure patients, we have to choice another way.

Objective: Infertility has been a big problem in human population entirely the history and it may be related to be part of the variant medical problems that has increased up to 50% since 1955 in the world. Perfect implantation is related on the development of high-quality embryos and to obtain of endometrial receptivity. However much the fertilization rate is relatively high and embryo culture conditions continue to improve, implantation is still the limiting step in the success of in vitro fertilization-embryo transfer (IVF-ET). Endometrial injury is an intentional trauma to the endometrium by biopsy or curettage.In our study, we have 30 patients totally and at the ovarian stimulation we had good responses from this patients although we dont have positive results. It means we have good embryo quality. At this point we must discuss the problem. First step we need explore uterin cavity with hysterescopy. If there is a problem at the hysterescopy we have to solve endometrial problem but there is no problem at the endometrium we just impuls fundal endometrium for a local reaction. Endometrium environment changes is the most important for implantation the embryo. For instance; thin endometrium, poor receptivity, immunologic factors. Each of these factors are very important for implantation embryo. The woman's age, the indication for IVF, uterine pathology, the treatment protocol employed, ovarian reserve, immunological factors, number of embryos transferred, number of prepared embryos, embryo quality, embryo transfer technique, sperm quality and luteal phase support were determined as meddling with perfect implantation and protecting to recurrent failure. But reduced endometrium receptivity and low embryo quality are idea to be the most important factors. Another important question is timing endometrial injury. Sometimes small endometrial injury with pipelle biopsy or hysterescopy makes a good reaction at the endometrium. Furthermore endometrial injury in subfertile women induced through hysterescopy improves pregnancy and livebirth rates. Relationship between endometrial injury and increased pregnancy rates in next ART procedures has been described in last publications of variable quality. This extensive literature revision, so aims to find the best available option on the influence and safety of endometrial injury for women with recurrent implantation failure undergoing ART procedures. Impairment of endometrial receptivity may be related with unexplain infertility. We believe that endometrial injury facilitate the preparation of receptive endometrium.

Discussion: Our results suggest that quality of transferred embryos is the most important prognostic factor for conception and that blastocyst transfer and local endometrial injury should be recommended to patients with repeated IVF failure in order to improve the pregnancy rate. At last larger prospective multicenter studies are needed to confirm these findings.

Keywords: Endometrial injury, hysteroscopy, pregnancy rate

[Abstract: 0146] [OP-31] [Accepted: Oral Presentation]

Metroplasty by Office Hysteroscopy for Surgical Correction of T-shaped Uteri in Women with Reproductive Failure: Long Term Anatomical and Reproductive Outcomes

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Objective: To evaluate the long term anatomical and reproductive outcomes of a novel hysteroscopic treatment for T shaped uterus in patients presenting with reproductive failure.

Material-Method: Between January 2015 and January 2016, twenty-nine primary infertile patients with a T-shaped uterus were included in the study. Study group consisted of patients with a long-standing infertility, repeated implantation failures (RIF) and history of recurrent pregnancy loss (RPL). All patients underwent office hysteroscopy under conscious sedation consisting of making two lateral incisions to the isthmic area of the uterine side-walls and when necessary one incision to the fundal indentation with a 5 Fr bipolar electrosurgical system. Anatomical outcomes were prospectively assessed with pre- and postoperative measurements of the transostial, isthmic and myometrial diameters and the uterine volume using three-dimensional transvaginal sonography (3D-TVS) and Virtual Organ Computer Aided Analysis (VOCAL) program. Reproductive outcome was assessed after spontaneous or assisted conception.

Results: Hysteroscopic treatment significantly increased the volume of the uterus from a mean of 2.5+1 mL before surgery to 3.02±1 mL by the end of 1 year as measured by 3D-TVS. Isthmic diameter increased significantly whereas the myometrial diameter decreased significantly, thus rendering the cavity shape resembling more like a triangle as opposed to T-shaped. We did not observe any intrauterine adhesions on HSG that was performed 1 month after surgery and 3D-TVS at different time points. Inter-assessor agreement for the uterine volume measurement was substantial to almost perfect during follow up period (Kappa values for 1st, 2nd, 6th and 12th months were 0.78, 0.82, 0.79 and 0.88, respectively, $p<0.001$). Of the 17 patients with long standing unexplained infertility, 5 conceived spontaneously and 7 with IVF (70.6%). Of the 7 patients with RIF, 1 conceived spontaneously and 3 with IVF (57%). Of the 5 patients with RPL, 3 conceived spontaneously and 1 with IVF (80%). In each group, one pregnancy resulted in a first trimester abortion with rest of the pregnancies ongoing beyond 32 weeks or resulted in deliveries at the time of writing. Pregnancy related complications such as abnormally adhered placenta, cervical insufficiency, or uterine rupture were not encountered. Ongoing pregnancy rate/live birth rate increased from 0% before to 58.6% after the metroplasty. Among patients with live birth (N=11), only one had a preterm delivery at 34 weeks of gestation due to intrauterine growth retardation.

Conclusion: Office hysteroscopic metroplasty results in a significant long-term expansion of the uterine cavity and improved reproductive outcomes in women presenting with a T shaped uterus and poor reproductive history.

Keywords: Dysmorphic uterus, t-shaped uterus, hysteroscopy, implantation failure, pregnancy loss

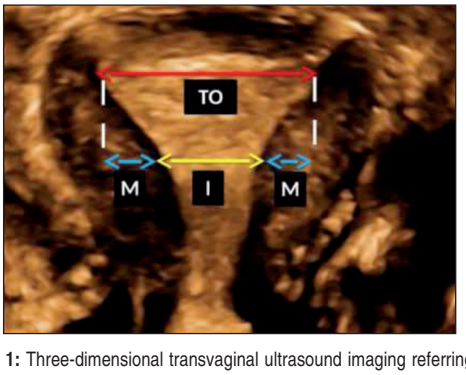

FIGURE 1: Three-dimensional transvaginal ultrasound imaging referring to the landmarks of uterine measurements. Trans-ostial (TO) diameter: the distance between tubal ostia; Isthmic (I) diameter: the transverse diameter at the isthmic level; Myometrial (M) diameter: the depth of the myometrium up to the ostial alignment.

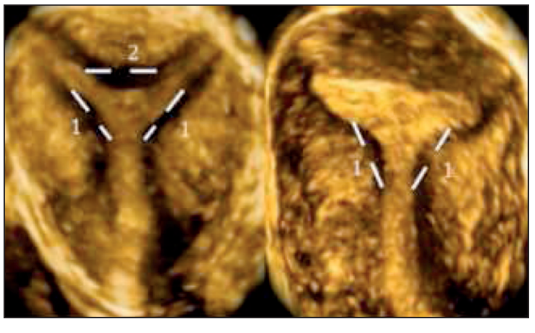

FIGURE 2: Hysteroscopic metroplasty incisions on coronal view of a T-shaped uterus. Incisions on lateral side walls (1) and on fundal area (2), if necessary.

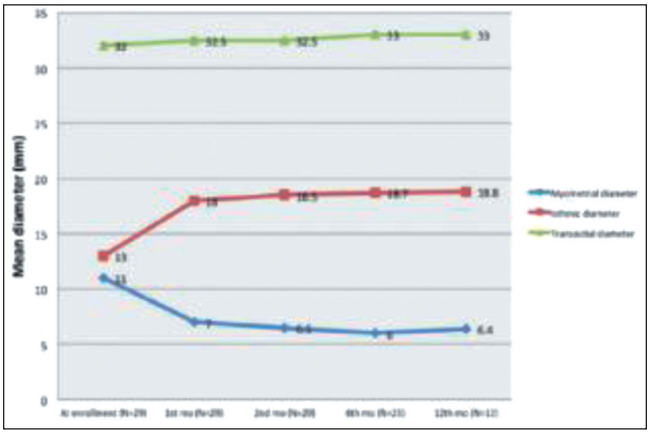

FIGURE 3: Transostial, isthmic and myometrial diameter at three-dimensional transvaginal ultrasound at enrollment and after metroplasty (number of patients are given in parenthesis).

TABLE 1: Reproductive outcomes after metroplasty according to the main indication to perform surgery.

Indication	Clinical pregnancy	Spontaneous abortion	Ongoing pregnancy/Live birth
Long standing unexplained infertility (N=17)	12(71)	1(6)	11(65)
Recurrent implantation failure (N=7)	4(57)	1(14)	3(43)
Recurrent pregnancy loss (N=5)	4(80)	1(20)	3(60)

[Abstract: 0174] [OP-32] [Accepted: Oral Presentation]

Laparoscopic Excision of a Large Uterine Cystic Adenomyoma in an Infertile Patient

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Background: Adenomyosis is defined as the presence of endometrial glands and stroma within the uterine musculature. Heavy menstrual bleeding, dysmenorrhea and diffuse uterine enlargement are the components of classical clinical manifestation. It has been believed that adenomyosis is a condition that generally affects multiparous and elderly women. Although the exact mechanism remains unclear, a causative relationship between adenomyosis and infertility has been suggested in the last decade. Here, we describe a rare form of adenomyosis, large cystic adenomyoma, in an adolescent patient who suffer from intractable dysmenorrhea.

Case: An 17-year-old adolescent girl who suffered from intractable dysmenorrhea for 2 years that was unresponsive to NSAID applied for further investigation. Ultrasound examination revealed a cystic mass with a thick wall located in the right fundal part of the uterus measuring 4 cm in diameter. It was previously misdiagnosed as right adnexal mass. Transvaginal ultrasonography revealed a 7.5x6.1x5.7 cm uterus. As the uterine mass was suspicious for cystic adenomyoma, laparoscopic excision was considered. The laparoscope was inserted into the abdominal cavity through an 11 mm umbilical trocar. Three additional trocars were inserted under direct vision. The right anterior uterine wall close to fundus was incised with monopolar hook cautery. The cystic mass dissected from the myometrium by using scissor. During dissection the cyst was ruptured and endometriotic content drained. Following removal of the cyst the uterine defect was closed with interrupted 1-monocryl sutures. The specimen was easily removed by using endo-bag. The patient was discharged on the postoperative day 1 without complication. During 3 years of flow up the patient was completely free of dysmenorrhea or pelvic pain without using NSAID.

Discussion: The pathophysiology of adenomyosis appears to be very similar to endometriosis and the underlying mechanisms of infertility can also be the same. Evidence suggests negative impact of adenomyosis on assisted reproductive technology (ART) cycle outcome. Although the exact pathogenesis is unknown the two generally accepted theories are myometrial invagination of endometrium or development from müllerian rests. Cystic adenomyoma is a rare form and more common in young patients. It's generally classified as juvenile and adult type. While juvenile cystic adenomyoma starts within 5 years after menarche or <= 18 years of age, adult cystic adenomyoma most commonly represents over the age 30. It might be beneficial to remove cystic adenomyoma to treat intractable dysmenorrhea or prior to ART treatment. In contrast to leiomyomas, where the cleavage plane is clear, removal of cystic adenomyoma is difficult and necessitates sharp dissection. In conclusion, laparoscopic excision of cystic adenomyoma is feasible in infertile patients.

Keywords: Adenomyosis, infertility, laparoscopy, uterine cystic adenomyoma

[Abstract: 0184] [OP-33] [Accepted: Oral Presentation]

Imact of Combination of Hysteroscopic Coagulation of Endometriotic Lessions and Dienogest (Visanne 2 mg) on Pregnancy Rate in RIF Patients

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Objective: Repeated implantation failure (RIF) is a clinical entity affecting couples undergoing assisted reproductive technology (ART). Variuos intrauterine pathologies contribute to RIF. Nevertheless, ultrasound or hysterospingography, which are the common diagnostic tools for initial follow-up, have limited sensitivities. On the other hand, numerous research studies have suggested a connection with adenomyosis and embryo implementation failure,but this could not be confirmed because of the lack of consistence in diagnosis of adenomyosis (local or diffuse). In this context, we aimed to evaluate the impact of combination of hysteroscopic coagulation of small endometryomas followed by medical treatment with Dienoest (Visanne 2 mg) on clinical pregnancy rate in subsequent ART cycles in women with history of RIF.

Material-Methods: The database of an assisted reproductive clinic was retrospectively reviewed to detect eligible cases. A total of 9 infertile women, aged 29-37 with history of two failed transfers (fresh and frozen) of good quality blastocyst, the thickness of endometrium between 8-11.5 mm on the day of progesterone initiation, with symptoms of dysmenorrhea and no 3 D ultrasound signs of adenomyosis, underwent hysteroscopic coagulation of endometriotic lessions. All of them were talking Visanne 2 mg, 1 tab once a day continuously during 3 months. Afterwards, frozen HR-ET transfer of single blastocyst was performed in subsequent cycle.

Results: 6 out of 9 women (66.7%) got pregnant (p= 0.41).

Conclusion: Unrecognized uterine pathologies can be easily detected during diagnostic hysteroscopy. In RIF patients pregnancy occurred in 66.7% (p= 0.41)after combination of hysteroscopic coagulation of endometriotic lessions and medical treatment with Dienogest (Visanne 2 mg) during 3 monthes.

Keywords: Repeated implantation failure, hysteroscopy, adenomyosis

[Abstract: 0217] [OP-34] [Accepted: Oral Presentation]

Effectiveness of Hysteroscopy in the Management of Uterine Pathology in Women with an Intact Hymen

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Background & Objectives: Virginity, defined as an intact hymen, is considered a sign of sexual purity in many societies, especially Islamic and represents the honor of a women and her family, therefore, damage to the hymen carries with it serious social implications for the patient. Based on these issues, and because of hysteroscopy being the only technique that provides direct visualization of the uterine cavity, our aim of this study was to assess role of hysteroscopy in the diagnosis and treatment of uterine pathology causing abnormal vaginal bleeding (AVB) in 17 unmarried patients with an intact hymen.

Materials & Methods: Medical records of 17 Referred patients with AVB, and intact hymen for whom hysteroscopies were performed during a period of 11 months, between (January 2016 through November 2016) at AL-Amal Hospital, were studied retrospectively. Patients age ranged from 17 to 39 years, with average weights; 8 patients with menorrhagia, 5 women with intermenstrual bleeding, while the remaining 4 with US showed echogenicity in the uterine cavity and with metrorrhagia, all not responding to medical treatments. Preoperatively, necessary lab investigations done for all including CBC, coagulation & hormonal profiles, misoprostol of 2 tablets (400μgm) were inserted PR 4 hrs. before intervention. All underwent diagnostic hysteroscopy & operative (when necessary), 5 days after period, by means of a 3.9 mm Olympus continuous flow. Tissue samples removed sent for histopathological examination (HPE). Outcomes: treatment success (neither hymen nor cervix were injured), menstrual flow reduction, degree of pain, need of second operation, patient satisfaction and complications. Treatment was considered as a failure if hymen or cervix was injured or with repeated attacks of AVB. Consent was obtained from each patient or her parents.

Results: Mean time for performing hysteroscopies was 18 minutes, all went smoothly, neither hymen nor cervix were injured, also no uterine perforations were encountered. 9 patients had simple endometrial hyperplasia, and 3 women showed evidence of endometritis on HPE, given proper antibiotics, all of these patients had a clinical diagnosis of DUB. 5 patients were diagnosed with endometrial polyps on HPE. No pathological findings indicating cancer or a precancerous lesions were found. No evidence of bleeding disorders. Mean follow-up period was 3 months, none of the patients were lost to follow up. All patients but one(treatment failure, with repeated attacks of AVB) were satisfied and showed menstrual improvement. This patient went surgical re-intervention, and a missed sub-mucous myoma was diagnosed, and resected successfully.

Conclusions: Hysteroscopy, a minimally invasive procedure, found to be safe and effective in the management of women with intact hymen and with AVB due to uterine pathology, by avoiding trauma to the hymen and cervix, reducing the monthly blood loss significantly and with a high satisfaction rate.

Keywords: Hysteroscopy, intact hymen, uterine pathology, abnormal vaginal bleeding

[Abstract: 0235] [OP-35] [Accepted: Oral Presentation]

İntrauterin Sineşi Lokalizasyonlarının İnfertilite Üzerine Etkisi

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Bu çalışmada uterin sineşisi olan kadınlarda hangi lokalizasyonlardaki sineşiler infertiliteye neden oluyor ve müdahale edilmeli sorularını cevaplamayı amaçladık.

İnfertil olup histeroskopi ile uterin adhezyonları tespit edilen 39 hasta ile gebelikte yapılan ultrasonografi'de intrauterin sineşi tespit edilen 37 hasta sineşilerin lokalizasyonu açısından kıyaslandı. Sineşi lokalizasyonları olarak isthmus, fundus, corpus ve cornu belirlendi.

Fundal sineşiler infertil grupta anlamlı olarak fazla olup ($p<0.05$), istmik sineşiler gebe grupta daha fazla ($p<0.05$) izlenmiştir. Corpustaki dens adhezyonlar ise infertil grupta gebe gruba göre daha fazladır ($p<0.05$).

Adhezyonların yerine göre, özellikle fundal adhezyonlar, önemli infertilite nedenleri arasında bulunur. Bu adhezyonlara histeroskopik yaklaşım ile uygun tedaviler gebelik oranını artırmaktadır.

Anahtar Kelimeler: İntrauterin sineşi, infertilite

[Abstract: 0262] [OP-36] [Accepted: Oral Presentation]

The Effects of Cafeteria Diet Induced Maternal Obesity on off-Springs Fertility

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Objective: In this study we aimed to investigate the effect of induced obesity nutrition in prior to pregnancy, during the pregnancy, and in lactational period on the fertility of the offspring.

Material-Methods: In our study, 24 virgin female Wistar rats (120-125 gr) were obtained from Harlan Laboratories (The Netherlands) and maintained with a 12-h light/dark schedule and fed standard rat diet ad libitum. Animals were randomly divided into four nutritional groups; group 1a (n=6) and 1b (n=6) was fed a standart diet and group 2a (n=6) and 2b (n=6) fed cafeteria diet. After 10 weeks of standart or cafeteria feeding, all rats were paired with a Wistar stud male. Group 1a and 2a dams fed standart diet whereas, group 1b and 2b dams fed cafeteria diet throughout pregnancy and lactation. After birth, all offsprings weighed and litter size designed to twelve offsprings per litter (6 male and 6 female) and fed standart diet after lactation until 8 weeks. All of the adult offsprings were sacrificed under ethical conditions. Serum FSH, LH, AMH, testosteron and estradiol levels were estimated by ELISA methods. Ovarian tissues from female rats were analysed in terms of their follicular structures using hematoxylin-eosin and PTEN primary antibodies. Testicles from the male rats, on the other hand, were dissected and both motility and concentration of the sperm were analysed.

Statistical Analysis: Statistical analysis was carried out using SPSS version 13.0 software program (SPSS Inc., Chicago, Illinois USA). All statistical tests were two-tailed, and $P<0.05$ was considered statistically significant.

Results: There was a statistically significant difference in the primordial follicles count between 1A (55.62±9.35), 1B (47.17±7.48), 2A (15.62±5.92), and 2B (12.67±4.56) groups ($p<0.001$). However, there was no statistical difference between the antral follicle count or the AMH levels from the aforementioned groups ($p=0.691$ and $p=0.358$ respectively). PTEN expression was found to be present in every step of follicular development compartmentalizing in the oocyte, granulosa cells, and theca cells. However, as the follicles continue to develop there is a pattern that shows increase in PTEN accumulation in the granulosa cells and a reduction in PTEN in the oocyte cytoplasm. The PTEN expression in the oocyte cytoplasm was found to be decreased in the groups 2A and 2B when compared to groups 1A and 1B in conjunction with reduced primordial follicle count. There was no statistically significant difference in sperm count, motility, and progressively motile sperm count between groups ($p>0.05$).

Conclusion: This study shows that in rats although there was no changes in the AMH levels and antral follicle count there was a significantly decrease primordial follicles in female rats whoch were born from mothers that were fed with a cafeteria diet. The male rats from the same mothers showed a reduced testicular mass and increased gonad fat tissues although these differences seems to be not effecting the testicular function. Therefore, high maternal nutrition prior in pregnancy, in pregnancy, and in lactational period is concluded to be potentially detrimental in female rats.

Keywords: Maternal nutrition, cafeteria diet, primordial follicle, PTEN, sperm motility

[Abstract: 0101] [OP-37] [Accepted: Oral Presentation]

How is a Successful IVF Treatment Related to Microbiome?

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While Human Microbiome Project (HMP) has been sequencing the microbiome and identifying the vast communities of microbiota that inhibit our bodies, it has already been hypothesized that microbes are involved in the physiology and pathophysiology of assisted reproduction since before the first success in in-vitro fertilization (IVF) and this relationship demands increased focus especially considering that up to forty percent of patients undergoing IVF have abnormal flora somewhere along the reproductive tract. Therefore the microbiome of the female genital tract should become an important consideration in IVF treatments and the aim of this study is to explore the current literature outlining the contribution of important bacteria on reproductive health and outlines gaps in current research in order to highlight future areas of research.

This relationship is evident based on the expansive literature available to date importantly after the sequencing data from the 16S rRNA subunit, we will explore the current literature and review the microbiome of the female reproductive tract focusing on the influence of the reproductive microbiome in the assisted reproductive technology.

A transition in the microbial flora (lactobacilli species) occurred in most of the women during the course of IVF treatments due to hormonal changes (particularly with respect to variations in estradiol), or inflammation and progesterone resistance or pharmacological interventions. Hence, the vaginal microbiome has a statistically significant relationship to the live birth rate. In parallel, this study will provide a platform to discuss what a common clinical practice should include for women undergoing IVF such as screening of the vaginal microbiome and to develop a model for useful screening tools and implementation of microbial intervention strategies into modern day medicine.

Although significant correlations appear to exist between the reproductive tract microbiome, hormone status and IVF success rates, a more comprehensive study is needed to better understand the mechanisms involved in a possible relationship in reproductive assisted technologies. Therefore the future research needs to validate the hypothesis generated in these studies in functional experiments and evaluate true impact on clinical practice.

In this regard, the human microbiome research should focus on the possible solutions to mitigate the various factors affecting microbiome flora, implantation and delivery rates and this research will reflect the practice of modern biomedical research.

Keywords: Microbiota, sequencing, reproduction, IVF

[Abstract: 0108] [OP-38] [Accepted: Oral Presentation]

Do Ovarian Reserve Markers Predict the Subsequent Pregnancy Outcomes in Women with Recurrent Pregnancy Loss?

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Objective: Recurrent pregnancy loss (RPL) affects as many as one in 20 couples seeking parenthood. Although there are many causes of RPL, there is still no clearly identified etiology in 50 % of RPL cases. It has also been reported that chromosomal abnormalities are more commonly seen in embryos with decreased oocyte quality. Therefore aneuploidy due to diminished ovarian reserve may be one of the causative reasons of RPL. Ovarian reserve describes the number and quality of the follicles in the ovaries at any given time which can be evaluated by endocrine and ultrasound markers. Although there is a no ideal test, age, AMH and AFC are accepted to be the most reliable markers (4). We aimed to compare the patients with RPL and without a history of RPL according to their clinical characteristics and ovarian reserve markers. We also investigated whether there is a relationship between ovarian reserve markers especially serum AMH level and pregnancy loss.

Materials and Methods: This prospective cross-sectional clinical trial including 88 women with RPL and 84 age-matched women without RPL at a tertiary center between January and December 2016. The routine work up results for RPL, patient characteristics and ovarian reserve parameters were recorded and compared between the study and control groups.

Results: There were statistically significant differences in body mass index, live birth number, menstrual cycle length, antral follicle count (AFC) and serum antimüllerian hormone (AMH) level between the two groups. There was no statistically significant difference between the groups regarding age, menstrual cycle regularity and serum follicle stimulating hormone (FSH) and estradiol (E2) levels. The percentage of women with levels of AMH<1 ng/mL was 64.3% in the RPL group and 35.7% in the control group. AFC < 7 in both ovaries was lower in the RPL group when compared with the control group (63.9% vs 36.1%, respectively) (Table 1).

Conclusion: We found the statistically significant difference based on serum AMH level between the RPL group and control group. Also women within the RPL group had lower AFC in comparison to women within control group. Similarly, there are reports in literature supporting the relationship between serum AMH level and pregnancy outcomes. On the other hand, Morel et al showed that the possibility of live birth or miscarriage could not be predicted by the levels of AMH. There is no established biomarker to inform an individual's probability of becoming pregnant or experiencing pregnancy loss. On the other hand, there are systematic reviews and meta-analyses suggesting that AMH has an association with clinical pregnancy. So it may have some clinical utility in counseling women regarding the pregnancy outcomes. AMH levels can be measured in patients with RPL as a part of the work up parameters. Low to normal AMH levels may predict the quality as well as the quantity of oocytes that may be consequently be related with RPL.

Keywords: Recurrent pregnancy loss, ovarian reserve, antimüllerian hormone

TABLE 1: Comparison of the clinical characteristics and laboratory parameters of the patients between the RPL and control group.

	RPL group	Control group	Control group
Serum FSH level (IU/L)	7.3±2.7	6.5±3.4	NS
Serum E2 level (nmol/L)	60.8±53.8	54.8±35.6	NS
Serum AMH level (ng/mL)	3.7±2.9	5.4±4.1	0.030
AFC in both ovaries	7.9±1.8	11.2±5.3	<0.001
Serum FSH level			
<11 IU/L	79 (94)	82 (93.2)	NS
>=11 IU/L	5 (6)	6 (6.8)	
Serum E2 level			
<60 nmol/L	64 (76.2)	62 (70.5)	NS
>=60 nmol/L	20 (23.8)	26 (29.5)	
Serum AMH level			
<=1 ng/mL	18 (21.4)	10 (11.4)	NS
>1 ng/mL	66 (78.6)	78 (88.6)	
AFC in both ovaries			
<=7	62 (73.8)	39 (44.3)	0.013
>7	22 (26.2)	49 (55.7)	

[Abstract: 0198] [OP-39] [Accepted: Oral Presentation]

An Unusual Indication of IVF: Kartagener's Syndrome

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Introduction: Kartagener's syndrome (KS) is a rare disorder characterized by the classic triad of chronic sinusitis, bronchiectasis and situs inversus. KS is a subgroup of primary ciliary dyskinesia. Ciliary defect may affect the ciliary activity of tuba uterina. Some women with this syndrome have successfully conceived, although some of them are infertile. To our knowledge only 4 female patients with KS who were treated with in vitro fertilization/intracytoplasmic sperm injection(IVF/ICSI) and one of them was unsuccessful.

Case Report: ***Case 1.*** A 34 year-old woman presented with primary infertility of 6 years duration. She was diagnosed as KS since childhood. Infertility work-up was performed in another infertility clinic; semen analysis, hysterosalpingogram and ovulatory function were normal. She had intrauterine insemination cycles for 4 years in outside clinic and did not conceive. She referred to our infertility clinic and we considered the patient as primary infetility due to tubal ciliary dysfunction secondary to KS. We planned IVF treatment. Controlled ovarian hyperstimulation was performed by antagonist protocol with hMG and r-FSH. Follicular development was assesed by transvaginal ultrasound examination. Choriogonadotropin alfa was administered for ovulation trigger and ovum retrieval was performed 36 hours after the hCG administration. Eight metaphase II oocytes retrieved. Two blastocyst were transferred and resulted in singleton pregnancy. ***Case 2.*** The patient came to our infertility clinic at the age of 24 because of primary infertility for 3 years. She had a diagnosis of KS from childhood. The infertility examination included basal hormone assays, hysterosalpingogram and semen analysis. All these results were in normal range. Primarily IVF treatment was planned for her and controlled ovarian hyperstimulation was started with r-FSH 200 U/day on the 3rd day of the cycle by antagonist protocol and hMG 75 U/day was added later. When at least two follicles reached >18 mm, hCG was administered for ovulation trigger. Oocyte retrieval was performed and 6 oocytes were aspirated. One embryo was transferred and singleton clinical pregnancy was achieved in the first IVF cycle.

Discussion: It is believed that immotility of tuba uterina due to lack of dynein arms in KS patients causes infertility. On the other hand, it was determined that ciliary motility in the female reproductive tract is not essential for fertility. It was suggested that muscular contractions of the fallopian tubes are the primary force for the transport of eggs and zygotes. Women with KS have a variable degree of infertility and our two patients did not become pregnant before being referred to our infertility clinic. One of them have experienced unsuccessful intrauterine insemination cycles before. In the literature, four IVF-embryo transfer were reported for women with KS. Three of them conceived and two or three embryos were transferred in that patients. Different from the current literature our patients conceived in the first IVF-embryo transfer attempt and only one or two embryo transfer were performed. In conclusion, women with KS who have infertility should be encouraged by the possibility of conception, and IVF-embryo transfer is a reasonable treatment approach to try.

Keywords: Kartagener's syndrome, infertility, in vitro fertilization, embryo transfer

[Abstract: 0201] [OP-40] [Accepted: Oral Presentation]

The Value of Serum Telomerase Level in the Diagnosis of Polycystic Ovary Syndrome and its Relation with Metabolic Parameters in Normal Weight Young Girls

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Objective: Telomeres are repetitive nucleotide sequences at the ends of eukaryotic cell chromosomes. They are responsible for ensuring genomic stability during cell division. Telomeres are shortened after each cell division, until reaching a critical level. Telomerase is the enzyme responsible of telomere synthesis and prolongation, which has catalytic reverse transcriptase activity. Genetic factors, oxidative stress and inflammation have also been shown to be effective in reducing lenght of telomeres as seen in during normal cell division. Short telomeres cause genetic instability. As a result, the risk of genetic mutation and chromosomal disorder increases. Telomere length has been shown to reduced in many diseases such as endometrium cancer, cardiovascular disease and diabetes.The common feature of these diseases is the increased incidence in PCOS. The aim of this study is to investigate the predictive role of serum telomerase levels in relation to metabolic parameters for polycystic ovarian syndrome (PCOS).

Material-Methods: Our study included patients aged 16-23 years who attended to adolescent outpatient clinic. Of A total of 90 participants, 45 patients with polycystic ovarian syndrome were cases and 45 healthy girls with normal menstrual cycles and no hyperandrogenism parameters were controls. All of the participants have less than 30 kg/m2 body mass index. PCOS was defined in accordance with Rotterdam criteria. Characteristics of all cases were recorded. On days 2 and 3 of the menstruation, all patients and controls were monitored for blood cell count,biochemical parameters, lipid profile, basal hormone, fasting insulin, fasting blood glucose levels. HOMA-IR values were calculated. Serum telomerase level was measured by ELISA technique.

Results: LDL, HOMA-IR, fasting blood glucose levels, Ferriman–Gallwey score, DHEA-S, Neutrophil / Lymphocyte ratio values were higher in the study group compared to the control group. Serum telomerase levels were significantly lower in patients with PCOS (80.0±52.8) compared to controls (113.1±54.9) (p=0.004). We have shown that the serum telomerase level below 108.6 has a predictive value in determining PCOS with a sensitivity of 73.33% and a specificity of 57.78%. In PCOS group, there was a negative correlation between serum triglyceride and telomerase levels (r=-0.511; p=0.002). Additionally, there was a negative correlation between age, VLDL, Neutrophil / Lymphocyte ratio and serum telomerase level in all cases. Metabolic syndrome was detected in 8 patients and 6 of them were in the PCOS group. Similarly, telomerase levels were significantly lower in patients with MetS (50,7±50,1 vs. 101,1±54,8, p=0.005). The number of patients with MetS was not sufficient to assess whether low telomerase levels were a risk factor for metabolic syndrome in PCOS patients.

Conclusions: In young and non-obese women, low serum telomerase levels might be useful in determination of PCOS. Furthermore, there may be a relation between Mets and telomerase level in PCOS patiens. In this regards, further studies with more participants are needed to justify and improve our results.

Keywords: Polycystic ovary syndrome, telomerase, oxidative stres, inflammation, metabolic sydrome

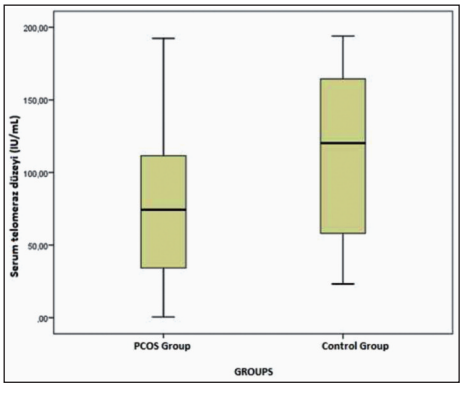

FIGURE 1: Comparison of serum telomerase levels between the groups.

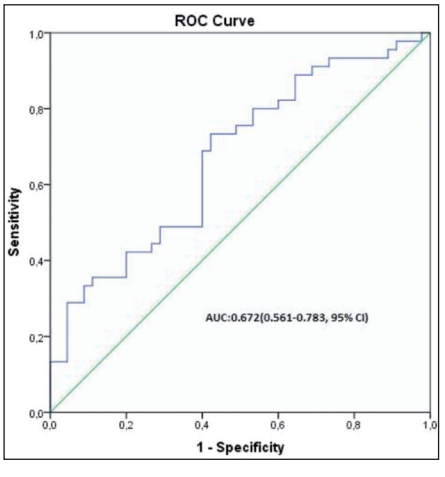

FIGURE 2: ROC curve of serum telomerase levels in prediction of PCOS.

TABLE 1: Comparison of the groups regarding demographics and serum telomerase levels.

Parameter	PCOS (n:45)	Control (n:45)	P value
Age (years)	19.3±2.5	19.3±2.7	0.902
BMI (kg/m^2)	23.0±3.7	21.6±3.9	0.081
Waist/hip ratio	0.799±0.077	0.775±0.063	0.112
Menarch age (years)	13.2±1.4	13.3±1.1	0.672
Ferriman Gallwey score	12.5±5.4	6.8±3.9	<0.001
Telomerase (IU/mL)	80.0±52.8 74.3(0.5-192.4)	113.1±54.9 120.3(23.2-194.0)	0.004

TABLE 2: Lipid profiles and glucose metabolism markers of the groups.

Parameter	PCOS (n:45)	Control (n:45)	P value
Glucose (mg/dL)	89.2±6.3	86.8±6.8	0.024
Insulin (IU/mL)	10.0±7.1	7.5±3.5	0.058
HOMA-IR	2.0±1.2	1.6±0.7	0.019
IR n(%)	10(22.2)	4(8.9)	0.081
Trigliseride (mg/dL)	89.0±37.5	86.8±35.8	0.796
LDL(mg/dL)	83.1±24.2	68.9±30.5	0.033
HDL(mg/dL)	63.8±11.9	67.0±9.7	0.197
VLDL(mg/dL)	17.4±7.4	17.6±7.2	0.890
Total Cholesterol(mg/dL)	164.7±29.3	153.2±35.7	0.142
Total Cholesterol/HDL	2.6±0.6	2.3±0.5	0.023

TABLE 3: Baseline hormone levels and some inflammatory markers of the patients.

Parameter	PCOS (n:45)	Control (n:45)	P value
FSH(IU/L)	7.0±2.2	6.8±1.9	0.735
LH (IU/L)	8.3±4.7	7.0±4.9	0.267
Estradiol (pg/dL)	38.9±21.0	28.5±16.7	0.040
PRL(ng/mL)	13.8±6.8	11.6±5.2	0.111
TSH(IU/L)	2.0±0.8	2.1±1.0	0.581
Free T	1.7±0.7	1.6±0.7	0.637
DHEA-S	354.4±151.8	271.3±100.6	0.013
Neut/lym ratio	2.7±1.3	2.2±1.0	0.023
CRP	4.0±4.2	3.2±2.4	0.426

[Abstract: 0207] [OP-41] [Accepted: Oral Presentation]

Prevalence and Predictors of the Usage of Complementary Alternative Medicine Among Infertile Patients

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Objective: The use of Complementary and Alternative Medicine (CAM) has grown considerably over the past few decades in Western countries. Parallel to this increase, different CAM modalities are becoming more widespread among infertile patients. The primary objective of this study was to evaluate the prevalence, characteristics and the most frequently used CAM methods among infertile couples. A secondary aim was to assess predictors, information sources and documentation attitude of CAM among patients seeking assisted reproduction treatment.

Design: This study was designed as a cross-sectional survey.

Materials-Methods: The study was conducted on patients admitted infertility clinics of two hospitals (one university and another state hospital) which are located in the cities of Ankara and Denizli, Turkey. A total of 324 patients (162 couples) who had been diagnosed with an infertility and had sufficient intellectual ability to understand all questions were enrolled in this study. CAM prevalence, CAM modalities and factors associated with CAM use among infertile couples were investigated.

Results: The overall prevalence of CAM among 324 participants was 25.6 % (n=83). One half (48%) of the infertile couples had experience with at least one type of CAM method. Of those using CAM, the majority of subjects reported taking herbal products (84%). The frequency of CAM tended to be higher among females compared to males (33% versus 17%, respectively; p=0.02). Failure to conceive with previous medical therapies was found to be significantly associated with CAM in an infertility population. These patients were more inclined to use CAM. (p=0.01) After logistic regression analyses, only gender and previous unsuccessful ART treatment were found to be associated independently with CAM use.

Conclusion: CAM use is common among infertile population. CAM users were more likely to be women at any age who had failed to achieve a pregnancy with previous artificial reproductive treatment(s), mainly used herbal products and mostly reluctant to report the use of CAM.

Keywords: Complementary, alternative, medicine, infertility

[Abstract: 0214] [OP-42] [Accepted: Oral Presentation]

Malignant Ovarian Immature Teratomas: Oncologic and Fertility Outcames

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Aim: Malignant Ovarian immature teratomas are rare neoplasms. This study aimed to evaluate the oncologic and fertility outcome in women with all stage malignant ovarian immature teratomas (MOIT)

Methods: Case records of 24 patients from 2007-2017 with (MOIT) were reviewed. Histology was based on WHO classification. Tumours were staged according to International Federation of Gynecology and Obstetrics (FIGO) system. Data was collected on age, grade, stage, Tumor size, peritoneal involvement,Residual tumor volume, Lymphovascular space invasion, treatment, recurrence overall survival (OS) and Disease-free survival (DFS). OS and DFS was determined by Kaplan-Meier method.

Results: Median age of our patients was 23 (15-47) years. Seventeen patients were in grade I, seventeen in III. Eight patients were in stage I, sixteen in grade II-III. Median follow up was 49 months (10-105). All patients underwent initial surgery. Fertility sparing procedures were performed in 83.3 % patients. In univariate analysis, peritoneal involvement, stage and residual tumor volume were significant on DFS and OS ($P< 0.005$). There was no independent prognostic factor for DFS and OS in multivariate analysis. 5-year OS rate 89.3%. 5-year DFS rate 72%. The Survival status was 91.7% and Recurrence rate was 20.8%. Nine patients had pregnancy. Five patients had live pregnancy. Three patients underwent embryo freezing. Two patients had spontaneous pregnancy.

Conclusions: MOIT has good prognosis with conservative surgery and chemotherapy. Fertility sparing surgery has become a standard in MOIT.

Keywords: Immature teratoma, Fertility

[Abstract: 0215] [OP-43] [Accepted: Oral Presentation]

Does Anti-factor Xa Levels Have Any Impact on Pregnancy Outcome in Women with Previous Adverse Outcome

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Objective: Low molecular weight heparin (LMWH) is used during pregnancy in women with diagnosed with thrombophilia for prevention of thromboembolic events and prevention of recurrent pregnancy loss. LMWHs are generally dosed based on weight, data in pregnant women have shown that weight-based dosing does not consistently achieve target anti-Xa levels. LMWH dosage adjustment can be done by monitoring anti-factor Xa (anti-FXa) levels and targeted anti-FXa levels are 0.2-0.6 IU/ml. However there is not a certain consensus on optimal dosage and its effects on pregnancy outcomes. The aim of this study is to search whether anti-FXa levels has an influence on pregnancy outcomes. This is the first study evaluating anti-FXa levels in pregnancies with previous adverse outcome.

Material and Methods: This study was conducted in Zekai Tahir Burak Women's Health Care Training and Research Hospital, Ankara, Turkey. Eighty-one women with history of recurrent pregnancy loss and thrombophilia who were treated with low molecular weight heparin (LMWH) during pregnancy were enrolled in this study. Anti-FXa levels after 3-4 hours of injection and fetal and maternal outcomes were recorded.

Results: Mean age of women were 28 ± 4 (19-40), mean anti-FXa level was 0.44 ± 0.93 IU/ml. No bleeding or clotting complications were associated with LMWH administration. Anti-FXa levels did not have a relationship with gestational age at birth, fetal weight, type of delivery, cesarean indications, postpartum bleeding, APGAR scores and admission to neonatal intensive care unit ($p>0.005$). Our primary outcome was live birth and binary logistic regression analysis showed that anti-FXa levels has no correlation in terms of live birth.

Conclusion: Based on our study findings, anti-FXa levels do not have an influence on pregnancy and fetal outcomes. Anti-FXa levels should not cause concerns on feto-maternal health during LMWH dosage adjustment. Our study suggests a possibility that the positive effect of LMWH on pregnancy outcome is not due to anticoagulant activity is rather due to anti-inflammatory effect. However, anti-Xa levels may not necessarily provide an accurate measure of coagulation inhibition during pregnancy, also.

Keywords: Anti-Xa level, Low molecular weight heparin, pregnancy, recurrent pregnancy loss

[Abstract: 0224] [OP-44] [Accepted: Oral Presentation]

Azalmış Overyan Yanıtlı Olgularda İn Vitro Fertilizasyon Protokolüne Eklenen Büyüme Hormonun Sonuçlara Etkisi

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İn vitro fertilizasyon (İVF) denenen infertil kadınların %9-24'ü Bologna kriterleri ile azalmış overyan yanıtlı olgular olarak tanımlanmıştır. Bu kadınlarda gebelik oranını artırmak adına farklı yöntemler denenmektedir.

Çalışmamıza Bologna kriterlerine uygun olarak belirlenen 93 azalmış overyan yanıtlı infertil kadını dahil ettik. Bunlardan 47 tanesinde büyüme hormonu (BH) İVF protokolüne eklendi. Sonuçlar gebelik oranı, canlı doğum oranı, iptal edilen siklus, implantasyon oranı,fertilizasyon oranı, toplanan oosit sayısı ile değerlendirildi.

Gebelik oranı, canlı doğum oranı, iptal edilen siklus, implantasyon oranı,fertilizasyon oranı, toplanan oosit sayısı gibi sonuçlar değerlendirildiğinde BH eklenen İVF protokollerinin eklenmeyenlere istatistiksel açıdan anlamlı bir üstünlüğü bulunamamıştır.

Çalışmamızda da görüldüğü üzere, BH'nun İVF sikluslarında tedavi protokolüne eklenmesinin gebelik oranını artırmak adına katkısı yoktur.

Keywords: Büyüme hormonu, in vitro fertilizasyon, azalmış ovaryen yanıt

[Abstract: 0254] [OP-45] [Accepted: Oral Presentation]

Hysterosalpingography Prior to the Gonadotropin Stimulated Intrauterine Insemination Improves Clinical Pregnancy Rates in Women with Unexplained Infertility

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Objective: Gonadotropin stimulated intrauterine insemination (IUI) cycles performed following one month after hysterosalpingography (HSG) are associated with improvement in clinical pregnancy rates in unexplained infertile couples.

Materials and Method: A retrospective cohort study was performed between 2008 and 2014. A total of 92 unexplained infertile couples undergoing their first cycle IUI stimulated by gonadotropins were included in the analysis. Participants were classified into two groups according to IUI cycles performed one month (Group A, n = 25 cycles) or longer than one month (Group B, n = 67 cycles) after the HSG procedure.

Results: The overall clinical pregnancy rate was found as 25% (23 clinical pregnancies / 92 cycles). Clinical pregnancy rate was 44 % (11/25) for Group A and 17.9 % (12/67) for Group B. In Group A, there were significantly higher clinical pregnancy rates compared to Group B (OR: 3.6, 95% CI, 1.3–9.8; p = 0.012).

Conclusion: It has been demonstrated that fertility improving effect of HSG was most prominent in the first six months after procedure. Likewise, in gonadotropin stimulated IUI cycles performed following one month after HSG, there seems to be an improvement in pregnancy rates in unexplained couples. In unexplained cases, it may be a reasonable approach to plan IUI cycles in the first month after HSG in clinical practice.

Keywords: Ovarian stimulation, Infertility, Hysterosalpingography

[Abstract: 0264] [OP-46] [Accepted: Oral Presentation]

Fresh Versus Frozen-thawed Blastocyst Transfer in High Responders with and without Calcium Infusion

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Objective: In this study, we aimed to investigate the pregnancy and live birth rates in frozen-thawed embryo transfer that carried out by embryo transfer in fresh cycle and all the embryos obtained from the fresh cycle were frozen transferring to the artificially prepared endometrium in another cycle for the group with high OHSS risk.

Materials-Methods: This is a retrospective study including a total of 254 patients who underwent ICSI in a private IVF center between 2013 and 2016. The study group consisted of women with high response to controlled ovarian hyperstimulation (high responder). Patients with a total follicle count of 15 or more and/or estradiol (E2) value of over 3000 pg/mL on the day of ovulation induction were considered as high responders and with a high risk of OHSS. Patients over 40 years old, male factor, recurrent pregnancy loss stories, those with uterine pathologies, chronic systemic medical problems, systemic drug use and those induced with agonist were excluded from the study. The patients who received embryo transfer in fresh cycle and calcium infusion referred as Fresh Ca+ group, whereas those without calcium therapy were called as fresh Ca- group. In the frozen group, those receiving calcium infusions were called as frozen Ca+ group, whereas those without calcium treatment were called as frozen Ca- group. In this study, gonadotropin-releasing hormone (GnRH) agonist and GnRH antagonist protocols were administered in patients during COH.

Results: A total of 254 high-responder were included in this study. Fresh cycles were performed to 181 (71.2%) patients, while frozen cycles were performed to 73 (28.7%) patients. Calcium treatment was administered to 109 (60%) patients in fresh cycle, while it was administered to 45 (61.6%) of them in frozen cycle. The patients' age, body mass index (BMI), hormonal values at the beginning of the cycle, infertility duration and the IVF cycle are shown in Table 1. The characteristics of the cycle were shown in Table 2 in comparison between four groups. In Table 3, the results of the cycle were also given comparatively between four groups. Implantation rates, clinical pregnancy rates, and live birth rates did not show statistically significant difference between groups.

Conclusion: In this study, there was no statistically significant difference between fresh and frozen-thawed cycles in patients with high OHSS risk in terms of implantation, clinical pregnancy, and live birth rates. Furthermore, these rates were not different in the cycles with or without calcium treatment. The OHSS rates were not different between fresh and thaw cycles; however, these rates were significantly less in the Ca+ group than in the Ca- group. OHSS was not developed in the total freeze group with Ca treatment. Thus, freeze-all policy can be applied more reliably in order to be protected from OHSS. We also conclude that calcium infusion is beneficial in preventing OHSS without altering pregnancy rates.

Keywords: OHSS, fresh embryo transfer, frozen-thawed transfer, calcium, pregnancy rate

[Abstract: 0091] [OP-47] [Accepted: Oral Presentation]

The Ratio of anti-Müllerian Hormone, Inhibin-B, and Insulin Growth Factor-2 as Predictor for the Quality of Oocytes in the In Vitro Fertilization Cycles

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Background: The outcome of an in vitro fertilization (IVF) cycle depends on a num¬ber of factors including oocyte quality. However, assessment of oocyte quality using morphological evaluation is considerably difficult. The aim of this study is to find out the accurate compre¬hen¬sive pre¬dic¬tor for the quality of oocyte by respectively mea-suring serum and follicular levels of AMH, inhibin-B, IGF-2.

Materials-Methods: Selected 38 IVF cycles from infertile couples between Sep-tember 2013 and August 2014 from Melati IVF Clinic Harapan Kita Mother and Child Hospital, Jakarta, Indonesia were included to this study, from which at least one oocyte was needed. The age of the infertile IVF subject was 26 to 42 years old. Three serum and follicular fluids biomarkers (AMH, inhibin-B, IGF-2) were measured three times at the IVF cycles (Day-2, Day-trigger, and Day-ovum pick up). Several models were in-ves¬ti¬ga¬ted which was expected able to predict: (1) the number of mature oocytes (MO), (2) the fertilizable oocyte (F) and (3) the transferable embryo. The data was analyzed using multivariate linear regression.

Results: Among 72 recruited subjects, only 43 of them were eligible for further eva-luation, out of which 38 subjects had complete data. MO, FO, and E were positively correlated with serum inhibin-B at Day-ovum pick-up (r=0.54; 0.33, 0.33, respecti¬ve¬ly), basal anthral follicle (BAF) count (r=0.69; 55; 52, respectively), and inhibin3 ratio (r=0.54; 0.33, 0.33, respectively). Prediction of MO, FO, and E was improved by com-bining those three factors (r=0.72; 0.63; 0.60, respectively) in our regression mo¬dels.

Conclusions: Inhibin-B level at Day-ovum pick-up was independently correlated with the number of mature oocytes, fertilizable oocyte, and transferable embryos in IVF cycles. Prediction models that were obtained from the equation of linear regression involving the combination of BAF count, inhibin-B at ovum pick-up day and its form of ratios can be used as parameters to predict the quality of oocyte.

Keywords: AMH, Inhibin-B, IGF II, Quality oocyte

[Abstract: 0151] [OP-48] [Accepted: Oral Presentation]

Diminished Ovarian Reserve in Women with Transfusion-dependent Beta-thalassemia Major: Is Iron Gonadotoxic?

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Objective: Iron accumulation in the endocrine glands has been implicated in the aetiopathogenesis of decreased reproductive capacity in patients with beta-thalassemia major (β-TM).]. Hypogonadism may result from iron deposition in the hypothalamus or most commonly in the pituitary gonadotrophs. However, whether ovarian function is intact or impaired by a direct effect of iron (primary hypogonadism) is not clearly understood yet.The aim of the current study was to investigate the serum concentration of anti-Müllerian hormone (AMH), a marker of ovarian reserve, in women with transfusion-dependent β-TM.

Study Design: In this case-control study, we recruited 43 women with transfusion-dependent TM and 44 age-matched healthy controls. Hormonal and haematological parameters, serum level of AMH, antral follicle count, and ovarian volume were assessed.

Results: Twenty-two of the 43 women were hypogonadotropic, 8 with primary amenorrhea and 14 with secondary amenorrhea. The normal cycle group was significantly younger than the amenorrhea group ($p = 0.034$). The duration of repeated transfusion and chelation therapy was longer in women with amenorrhea compared to those without. FSH, LH, estradiol, prolactin, and AMH levels; antral follicle count; and ovarian volume were significantly lower in women with TM compared with the control group ($p < 0.05$ for all). Although serum FSH, LH, estradiol levels and ovarian reserve parameters (ovarian volume, AFC, and AMH levels) were significantly lower in the amenorrheic group ($p < 0.001$ for all) compare to normal cycle group, these variables are the same range between the control group and TM subgroup without amenorrhea.

Conclusion: Serum AMH levels were significantly diminished in thalassemic women with amenorrhea. Although hypogonadotropic hypogonadism was present with significantly depressed FSH and LH levels and lower ovarian volume in these patients, decreased AMH levels suggested that iron overload might have a direct effect on the ovary. Furthermore, we speculate that the observed association between AMH levels and ferritin concentration, the hopeful results of intensive chelation programs on gonadal functions, and the toxic effect of endometriotic cyst fluid on ovarian functions all indicate that iron might be gonadotoxic.

Keywords: Ovarian reserve; iron overload; thalassemia major

TABLE 1: Characteristics of study groups.

Characteristics	Thalassemia major (n=43)	Control group (n=44)	p
Age (years)	23.4±5.1	23.2±5.3	0.800
BMI (kg/m^2)	20.9±2.5	22.7±4.4	0.025*
Ferritin (mg/L)	2287 (3676)	13.0 (13.7)	<0.001*
FSH (mIU/mL)	4.21±3.14	6.21±1.94	<0.001*
LH (mIU/mL)	2.47 (4.39)	4.56 (2.55)	<0.001*
Estradiol (pg/mL)	25 (62)	34 (18)	<0.001*
AMH (ng/mL)	1.77 (3.29)	3.52 (3.53)	0.002*
AFC (n)	3 (4)	11 (6)	<0.001*
Diabetes mellitus (n, %)	6 (13.9)	0	0.001*
Cardiac iron overload (n, %)	10 (23.3)	0	0.001 *

TABLE 2: Correlations of AMH levels with other clinical and biochemical parameters

Variables	r	p
Age	-0.081	0.462
Hypogonadism	-0.510	<0.001*
FSH	0.482	<0.001*
Ferritin	-0.331	0.002*
AFC	0.598	<0.001*
Frequency of transfusion	0.305	<0.05*
Chelation type	0.121	0.446
Diabetes mellitus	0.025	0.726
Cardiac iron overload	0.025	0.877

[Abstract: 0160] [OP-49] [Accepted: Oral Presentation]

First Steps Towards Creating a Bioprosthetic Human Ovary

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Objective: Decellularization is a novel strategy for organ replacement, where the cells of an organ are removed, leaving an extracellular matrix (ECM) for recellularization. In this study we aim to produce a decellularization protocol for human ovarian tissue and evaluate its biocompatibility and biofunctionality using isolated preantral follicles.

Material: Donated human ovarian tissue and isolated preantral follicles from women undergoing ovarian tissue cryopreservation for fertility preservation.

Methods: Pieces of human ovarian cortical and medullary tissue (approximately 7x7x2mm) were decellularized using 0.1% sodium dodecyl (SDS) for 3, 6 and 24 hours followed by 24 hours DNase treatment (1mg/mL). The level of decellularization and the preservation of the ECM composition were characterized quantitatively and qualitatively by DNA quantification, collagen quantification using Picrosirius Red, Periodic Acid-Schiff (PAS) staining, and immunoflourescence detecting Collagen IA and the nuclear counterstain 4',6-diamidino-2-phenylindole (DAPI). Biofunctionality of the decellularized human ovarian tissue (DCT) was evaluated by in vitro andin vivo studies. Human granulosa cells (GCs) were reseeded on the DCT and cultured in vitro for 12 days. Murine (n=120) and human (n=20) preantral follicles (83-177µm and 54-162 µm in diameter, respectively) were isolated mechanically and/or enzymatically, reseeded on the DCT and grafted subcutaneously to immunodeficient mice for 3 weeks.

Results: Incubation in 0.1% SDS for 6-24 hours efficiently decellularized both human ovarian cortical and medullary tissue by eliminating all cells and leaving the ECM intact. DNA quantities in the DCT were significantly lower compared to matched native samples, and contained less than 50ng DNA/mg tissue wet weight. Histological examination using PAS staining confirmed that the ovarian tissues were completely decellularized, and no visible nuclear material was found within the decellularized sections. DCT also stained positive for collagen I, and collagen quantities in DCT constituted 88-98% of the individual baselines for native samples (n=4). Mature human GCs were able to recellularize the DCT in vitro by successfully repopulating and migrating into the scaffold. Xenotransplantation experiments showed that the DCT was able to support survival of isolated human follicles and growth of isolated murine follicles of which several grew to antral stages. The follicular recovery rates after 3 weeks grafting were similar for both human (25%) and murine follicles (26-32.5%). The average diameter of isolated murine follicles increased from 114 ±26µm to 195 ±143µm following 3 weeks grafting. Murine follicles were located inside the DCT with an average distance of 880 ±512µm from the scaffold edge, whereas, healthy human follicles were found at the edge of the scaffold probably due to the relatively short grafting period.

Conclusion: We have demonstrated an effective protocol for decellularization of human ovarian tissues and successful recellularization with isolated preantral follicles. This is the first time isolated human follicles have survived in a decellularized human scaffold. Therefore, this proof-of-concept could be a potential new strategy, to eliminate the risk of malignant cell reoccurrence in former cancer patients having cryopreserved ovarian tissue transplanted for fertility restoration.

Keywords: Bioprosthetic ovary, Decellularization, Extracellular matrix, Fertility restoration, Isolated follicles

[Abstract: 0167] [OP-50] [Accepted: Oral Presentation]

PCOS Olgularında Kontrollu Ovarian Stimulasyon ve İntrauterin İnseminasyon Sikluslarında GnRH Antagonist Kullanımının Etkisi

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Ankara Etlik Zübeyde Hanım Eğitim ve Araştırma Hastanesi

Amaç: Kontrollü ovarian stimulasyon(KOH) ve intrauterin inseminasyon (IUI) sikluslarında GnRH antagonist kullanımı yoluyla premature LH yükselmesinin engellenmesinin gebelik sonuçlarına olan etkisinin araştırılması.

Yöntem: Ankara Etlik Zübeyde Hanım Eğitim ve Araştırma Hastanesinde 1 Ocak 2015- 31 Aralık 2016 tarihleri arasında İnfertilite polkliniğine başvuran infertil hastalardan Rotterdam kriterlerine göre PCOS tanısı almış olan ve kontrollu ovulasyon indüksiyonu ve intrauterin inseminasyon uygulanan olgular çalışmaya dahil edildi. Olgular 2 gruba ayrıldı; KOH esnasında prematur LH yükselişini engellemek amacıyla antagonist uygulanan hastalar 1. grup (çalışma grubu), antagonist uygulanmayanlar ise 2. grup (kontrol grubu)olarak belirlendi.Çalışma grupları; PCOS tanısı almış, 18-40 yaş arasında ve vucut kitle indeksi (VKI)40kg/m2 altında olan histerosalfingografide (HSG) bilateral tubal geçişi gösterilen, tiroid ve prolaktin değerleri normal olan ve en az 3 siklus başarısız klomen /IUI siklusu geçirmiş hastalardan oluşturuldu. Her iki grupta da rekombinant FSH (rFSH) tedavisi standart 50-75 IU olarak menstruasyonun 3. günü başlandı. Antagonist kullanılan 1. grupta ultrasonografide 2 veya daha fazla 13-14 mm ve üzeri follikül izlendiğinde 0.25 mg Cetrorelix başlandı. Ultrasonografide 18 mm ve üzeri follikül izlendiğinde hCG uygulandı. Premature LH yükselişi, LH: 10IU/L, premature luteinizasyon ise LH seviyesinin 10 IU/L ve progesteron düzeyinin 1ng/ml üzerinde ölçülmesi olarak kabul edildi, hCG uygulamasından yaklaşık 36 saat sonra IUI yapıldı.

Bulgular: Toplam 175 hasta çalışmaya dahil edildi.İncelenen hastaların yaş ortalaması 29.73±4.48 yıl, ortalama infertilite süresi 4 (min:1-maks:16) yıldı. Hastaların VKİ ortalaması 27.39±3.62 (min:18.0-maks:36.9) kg/m2'ydi. 175 hastanın 88'ine (%50.3) "FSH+Antagonist" tedavisi uygulanırken geriye kalan 87'sine (%49.7) sadece "FSH" tedavisi uygulandı. Tedavi grupları arasında sadece "FSH" tedavisi uygulanan hastalarla "FSH+Antagonist" tedavisi uygulananlar arasında yaş, VKİ ve infertilite süresi açısından istatistiksel olarak anlamlı bir fark saptanmadı (p>0.05). Tedavi grupları arasında bazal FSH, LH, E2, TSH ve PRL açısından da istatistiksel olarak anlamlı bir fark saptanmadı (p>0.05). Siklus başına kullanılan FSH dozu ve stimulasyon süresi açısından gruplar arasında fark izlenmedi (814.06±337.28 vs 704.75±271.20 IU, p= 0.074 ve 9.33±2.59 vs 9.44±2.08 gün,p= 0.563) (Tablo 1). Ortalama antagonist kullanım süresi 2.97±1.31 gün olarak bulundu.Ultrasonografide 16 mm üzeri follikül sayısı çalışma grubunda istatistiksel olarak anlamlı şekilde yüksek bulundu (1.37±0.69 vs1.64±0.77, p=0,008) ancak 11-16 mm arasındaki ortalama follikül sayısı açısından gruplar arasında anlamlı fark bulunamadı, p=0.393. Premature luteinizasyon, çalışma grubunda sadece 1 (%1.1) vakada izlenirken kontrol grubunda 15 (%17.2) vakada görüldü, iki grup arasında istatistiksel olarak anlamlı fark bulundu, p=0.001. Çalışma grubunda 4 vakada, kontrol grubunda ise 3 vakada hiperstimulasyon riski nedeniyle siklus iptal edildi. Monofolliküler gelişim çalışma grubuda anlamlı olarak daha yüksek bulundu (%72.6 vs %56.8, p=0.006) ancak klinik gebelik oranları açısından her iki grup arasında anlamlı fark görülmedi(p=0,096) (Tablo 2).

Sonuç: PCOS tanısı almış hastalarda rFSH tedavi uygulamasına GnRH antagonist eklenmesi, monofolliküler gelişim elde edilmesine ve premature luteinizasyon gelişimininin azalmasına ve hCG günü LH, P ve E2 seviyelerinde iyileşmeye neden olmuş ancak OHSS gelişimini azaltmamıştır ayrıca antagonist kullanımı klinik gebelik oranlarında istatistiksel olarak anlamlı olmamakla beraber, kabul edilebilir bir artışa neden olmuştur bu nedenle antagonist uygulaması PCOS olgularında alternatif bir tedavi yöntemi olarak kullanılabilir.

Anahtar Kelimeler: GnRh antagonist, ovulasyon indüksiyonu, PCOS

TABLO 1: Tedavi gruplarının stimulasyon özellikleri.

	FSH+Antagonist (n=88) Ort±SD	FSH (n=87) Ort±SD	P
Toplam FSH Dozu IU	814.06±337.28	704.75±271.20	0.074
FSH Tedavi Süresi (gün	9.33±2.59	9.44±2.08	0.563
hCG günü LH (IU/L)	4.09±3.13	7.83±4.28	<0.001
hCG günü P (IU/L)	0.67±0.45	1.26±1.51	0.002
hCG günü E2 (pg/mL)	593.07±458.43	758.15±595.89	0.004
IUI Yapılma Günü	11.86±2.28	11.33±1.81	0.229

TABLO 2: Tedavi gruplarının siklus özellikleri.

	rFSH + Antagonist n=88 n (%)	rFSH n=87 n (%)	P
Premature luteinizasyon			
Var	1 (1.1)	15 (17.2)	0.001
Yok	87 (98.9)	72 (82.8)	
OHSS			
Var	1 (1.1)	0	1.000
Yok	87 (98.9)	87 (100)	
Siklus iptali			
Var	3 (3.4)	4 (4.6)	0.720
Yok	85 (96.6)	83 (95.4)	
Klinik Gebelik			
Var	22 (25.0)	13 (14.9)	0.096
Yok	66 (75.0)	74 (85.1)	
hCG günü 16 mm'den büyük follikül sayısı,	1.37±0.69	1.64±0.77	0.008
Monofolliküler gelişim			
Var	61 (72.6)	43 (51.8)	0.006
Yok	23 (27.4)	40 (48.2)	

[Abstract: 0177] [OP-51] [Accepted: Oral Presentation]

Recovery of Hormonal Status and Regular Menstrual Pattern in Two Patients Following Re-implantation of Cryopreserved-thawed Ovarian Tissue

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Background: Ovarian tissue cryopreservation (OTC) before gonadotoxic treatments and subsequent transplantation of frozen thawed tissue fragments is a method of fertility preservatio. The first live birth by OTC was reported in 2004 and since then this method has resulted in approximately 100 live births worldwide. As a pilot center in Turkey, our IVF Unit has started fertility preservation program firstly and been performing OTC since 2008 using slow freezing. Here, we present endocrine follow up of two cases, who had autologous orthotopic ovarian retransplantation recently by laparoscopy.

Case 1: A 20-year-old, gravida 0 woman suffered from Hodgkin's lymphoma in 2006. Thereafter she received ABVD chemotherapy plus radiotherapy. In 2011 her disease recurred and she was scheduled for preconditioning high dose chemotherapy before hematopoietic stem cell transplantation (HSCT). Her pre-operative ultrasonography revealed a normal sized uterus and normal ovaries. She had regular menstrual pattern. Laparoscopic ovarian wedge resection was performed with subsequent OTC of 15 cortical strips before HSCT. After HSCT she experienced amenorrhea and climacteric symptoms. In February 2017, ultrasonography revealed bilateral small sized ovaries. Her FSH and AMH values were 90.4 mIU/ml and 0.01 ng/ml, respectively. Prior to surgery, pathologic evaluation was conducted on 1 thawed piece, in order to avoid malignant reintroduction back to patient with the tissue. Ovarian re-implantation was performed laparoscopically after thawing of 9 cortical strips into the retroperitoneal area of right pelvic wall in February 2017. Menstrual bleedings occurred 34, 61 and 95 days after re-implantation. Her FSH value was 6.2 mIU/ml and AMH value also increased.

Case 2: A 24-year-old, gravida 0 woman suffered from acute myeloid leukemia M4 in 2012. Thereafter she received chemotherapy. In 2015 her disease recurred. Her pre-operative ultrasonography revealed a normal sized uterus and normal ovaries. She had regular menstrual pattern. Laparoscopic ovarian wedge resection was performed with subsequent OTC of 20 cortical strips before BMT. After BMT she experienced amenorrhea and climacteric symptoms. In February 2017, ultrasonography revealed bilateral small sized ovaries. Her FSH and AMH values were 33.9 mIU/ml and 0.02 ng/ml, respectively. One of her cryopreserved tissue pieces has also been evaluated prior to surgery and no malignant contamination was found. Her cryopreserved tissue was thawed and laparoscopically re-implanted into the peritoneum between remaining right ovary and its tuba uterina in March 2017. Menstrual bleedings occurred 55 and 90 days after re-implantation. Her FSH and AMH values were 22.6 mIU/ml and ng/ml, respectively.

Discussion: Here we present the second and third re-implantation procedures performed in our center. Re-implantation of cryopreserved ovarian tissue recovers menopausal situation of cancer patients who received gonadotoxic treatments. Although we cannot completely rule out the possibility of native ovarian function, fast recovery of menstrual pattern following re-implantation confirms hormonal function of grafts. In addition, a detailed pathologic evaluation of ovarian strips is recommended before freezing or prior to re-implantation in order to avoid malignant reintroduction.

Keywords: Gonadotoxic treatment, fertility preservation, menopause, ovarian tissue cryopreservation, re-implantaiton

[Abstract: 0183] [OP-52] [Accepted: Oral Presentation]

Impact of the Duration of Autoimmune Thyroiditis on Ovarian Dysfunction Type

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Objective: The human ovary is a common target of autoimmune attack, leading to ovarian dysfunction. Polycystic ovary syndrome (PCOS) or premature ovarian failure (POF) can result from anti-ovarian autoimmunity. We investigated whether the duration of autoimmune immune attack in women with Hashimoto's thyroiditis (HT) impacted the type of ovarian dysfunction that developed.

Study Design: In this case-control study, we recruited 81 women (aged 18-35 years) diagnosed with HT. Hormonal parameters, serum levels of anti-Müllerian hormone (AMH), antral follicle count (AFC), and ovarian volume were assessed. Women with HT were evaluated for any evidence of PCOS by the 2003 revised Rotterdam criteria. Diminished ovarian reserve (DOR) was defined by AFC <7 follicles or serum AMH <1 ng/mL.

Results: A total of 21 (26%) of the 81 women had DOR, 26 (32%) had a normal ovarian reserve, and 34 (42%) had PCOS. Both duration of autoimmune thyroiditis and duration of overt hypothyroidism were significantly shorter in the PCOS group than in the normal reserve and DOR groups. Kaplan–Meier curves illustrated the time to event of different ovarian functions (PCOS vs. normal ovarian function vs. DOR) according to HT duration, indicating that PCOS was more common during the early years of HT, whereas cases of normal ovarian reserve or DOR increased with disease duration.

Conclusion: This is the first study to investigate the effects of the duration of autoimmune thyroiditis on ovarian reserve and function. We showed that in the early years of HT, ensuing ovarian dysfunction often resulted in PCOS, but in later years, the ratios of both overt hypothyroidism and DOR increased.

Keywords: Autoimmune thyroiditis; anti-Müllerian hormone; hypothyroidism; ovarian reserve; polycystic ovary syndrome

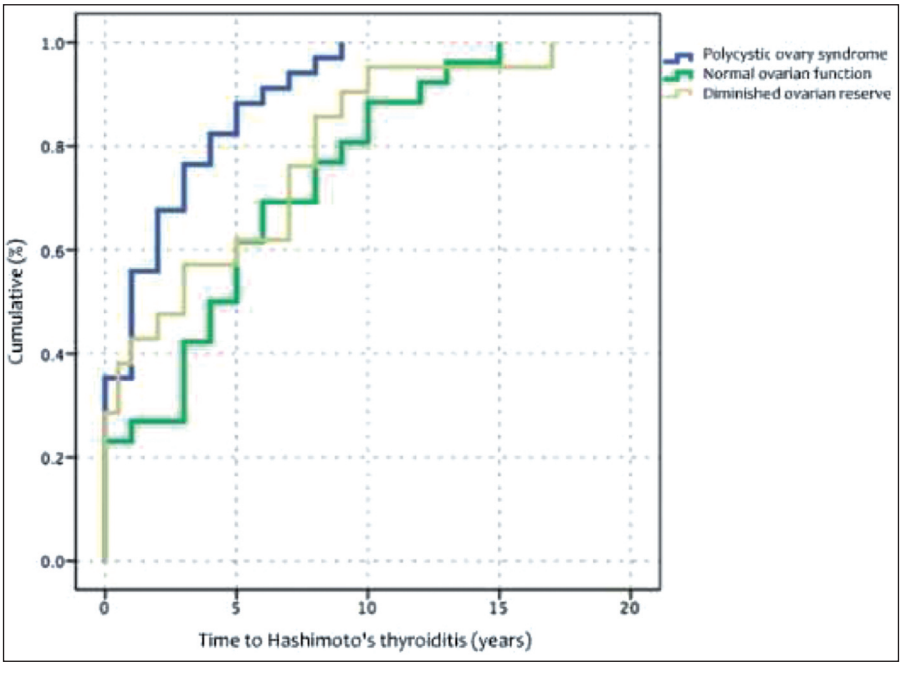

FIGURE 1: Kaplan–Meier curves of event of different ovarian functions (PCOS vs. normal ovarian function vs. DOR)

TABLE 1: Clinical characteristics of the patients.

Characteristic	Diminished ovarian reserve (n =21	Normal ovarian functions (n = 26)	PCOS (n =34)	p
Age (years)	32.2 ± 3.1	30.0 ± 2.5	27.2 ± 3.3	<0.001a
BMI (kg/m^2)	25.2± 4.1	24.6 ± 3.9	27.6 ± 4.6	0.02a
Gravidity (n)	2 (1)	1 (1)	1 (2)	0.058
Smoking (n, %)	10 (47.6)	14 (53.8)	16 (47.1)	0.909
Family history of thyroiditis (n, %)	16 (76.2)	14 (53.8)	19 (55.9)	0.174
Duration of HT (years)	3 (8)	4.5 (8)	1 (3)	0.029a
Duration of hypothyroidism (years)	2.7 (6)	4 (5)	0 (2)	<0.001a
Overt hypothyroidism (n, %)	19 (90.5)	23 (88.5)	16 (47.1)	0.001a
Infertility (n, %)	3 (14.2)	5 (19.2)	23 (67.6)	<0.001a
Duration of infertility (years)	0 (0)	0 (1)	2 (3)	<0.001a

Values are given as mean ±SD or median (interquartile range) as indicated. PCOS, polycystic ovary syndrome; BMI, body mass index; HT, Hashimoto's thyroiditis a Significant difference.

TABLE 2: Biochemical and ultrasonographic parameters of the patients.

Parameters	Diminished ovarian reserve (n=21)	Normal ovarian functions (n = 26)	PCOS (n =34)	p
AMH (ng/mL)	0.7 (1)	3.6 (2.5)	9.1 (8.3)	<0.001a
Ovarian volume (mm3)	6 (3)	8 (2)	14 (5)	<0.001a
AFC (n)	6 (3)	8 (2)	12 (5)	<0.001a
FSH (mIU/mL)	9.4 (8.8)	7.1 (3.2)	5.7 (1.6)	0.002a
LH (mIU/mL)	4.2 (4.7)	5.3 (3.9)	6.5 (4.8)	0.035a
Estradiol (pg/mL)	54 (49)	60 (48)	52 (39)	0.814
TSH (mIU/L)	3 (3.6)	1.4 (2.7)	2 (2)	0.187
fT4 (ng/L)	0.8 (0.2)	0.9 (0.3)	0.8 (0.3)	0.062
Positive anti-TPO (n,%)	20 (95.2)	22 (84.6)	30 (88.2)	0.499
Positive anti-TG (n,%)	10 (46.7)	11 (42.3)	22 (64.7)	0.163
25-OH vitamin D (ng/mL)	15 (12)	19 (11)	16 (10)	0.035a

Values are given median (interquartile range) PCOS, polycystic ovary syndrome; AMH, anti-Müllerian hormone; AFC, antral follicle count; FSH, follicle stimulating hormone; LH, luteinizing hormone; SHBG, sex hormone-binding globulin; TSH, thyroid stimulating hormone; fT4, free thyroxine; anti-TPO, anti-thyroid peroxidase; anti-TG, antithyroglobulin a Significant difference.

[Abstract: 0195] [OP-53] [Accepted: Oral Presentation]

Effect of Nigella Sativa on Reproductive System in Experimental Rat Model

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Objective: This study aims to evaluate the anti-oxidative effects of Nigella sativa oil (NSO), on ovarian and uterine tissues in a model of ischemia/reperfusion related with adnexal torsion.

Methods: Thirty wistar albino rats were randomly allocated to the following five groups. Group 1 (n=6), laparotomy only; Group 2 (n=6), laparotomy and ovarian ischemia for 3 h using vascular clips; Group 3 (n=6), laparotomy, followed by 3 h of ovarian ischemia and 3 h of reperfusion; Group 4 (n=6), NSO (2 ml/kg) was administered 1 h before laparotomy, followed by 3 h of ovarian ischemia; Group 5 (n=6), NSO (2 ml/kg) was administered 1 h before laparotomy, followed by 3 h of ovarian ischemia and 3 h of reperfusion. Uterus and both ovaries were examined histopathologically. Serum anti-Müllerian hormone (AMH), and tissue malondialdehyde (MDA) and glutathione (GSH) levels were measured.

Results: The AMH levels were significantly lower in Groups 2 and Group 3 than Group 1 (p=0.028). The AMH levels of Group 5 were significantly higher than those of Group 3 (p=0.028). As shown by the histopathological examination, there were no statistically significant differences among the follicle counts of the groups. Uterine tissue MDA levels were significantly decreased and GSH levels were significantly increased in Group 4 and Group 5 when compared with Group 2 and Group 3. Administration of NSO significantly decreased the leukocyte accumulation and cell degeneration in uterine tissues.

Conclusion: Adnexal torsion affects both the uterus and ovaries. NSO exerts protective effects on ischemia/reperfusion injury induced by adnexal torsion in uterine and ovarian tissues. The protective role of NOS in ischemia/reperfusion injury may be attributed to its ability to scavenge oxygen free radicals.

Keywords: Ischemia/reperfusion injury, Nigella sativa oil, oxidative stress

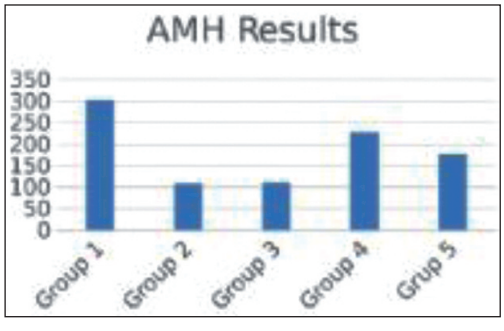

FIGURE 1: AMH levels of the rat groups.

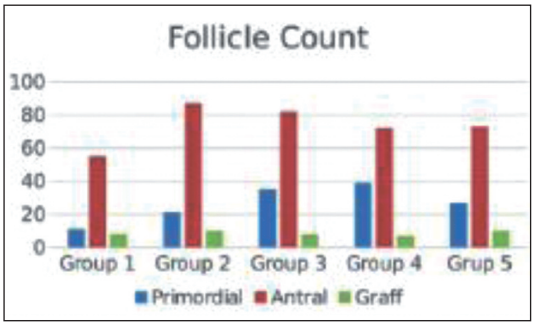

FIGURE 2: Follicular reserve levels of the rat groups.

TABLE 1: AMH levels of the groups.

	AMH pg/ml*
Group 1 (control)	303 ± 79
Group 2 (ischemia)	108 ± 15
Group 3 (I/R)	111 ± 9
Group 4 (NSO and ischemia)	228 ± 141
Group 5 (NSO and I/R)	176 ± 15

TABLE 2: Semi-quantitative scoring of histopathological alterations in uterine tissue.

	Group 1	Group 2	Group 3	Group 4	Group 5
Epithelial degeneration	+	++++	+++	++	++
Stromal edema	-	++++	+++	++	++
Mononuclear cell infiltration	-	++++	+++	++	++
Extravasation	-	++++	+++	+++	+++
Congestion	-	++++	+++	+++	++

Note: - absent, +: minimal; ++: modarate; +++ severe, ++++ very severe.

TABLE 3: MDA and GSH levels in uterine tissue.

	Group1	Group 2	Group 3	Group 4	Group 5
MDA levels (nmol/gr)	30.8 ± 3.1	45.0± 2.3	103.1± 6.5	35.9± 2.9	56.9 ± 2.2
GSH levels (µmol/gr)	4.49± 0,07	4.43±0.05	3.49±0.13	4.18±0.03	3.98±0.12

The values are means ± SE MDA Levels.; p< 0.05: G2/G4 p< 0.01: G1/G2, G2/G5 p< 0.001:G1/G3, G1/G5, G2/G3, G3/G4, G3/G5, G4/G5. GSH Levels.; p< 0.05: G2/G5, G3/G5, p< 0.01: G2/G4, G1/G5, G1/G4, p< 0.001:G1/G3, G2/G3, G3/G4

[Abstract: 0253] [OP-54] [Accepted: Oral Presentation]

An Evaluation of Frozen Thawed Cycles Outcomes to Prevent OHSS According to Those of Electively Performed Frozen Thawed Ones After Fresh Cycles

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Objective: To compare results of frozen/thawed cycles (FTCs) to prevent OHSS with those of electively performed FTCs after fresh IVF/ICSI and embryo transfer (ET) cycles

Materials and Method: A total of 320 FTCs performed at Dokuz Eylul University-IVF Centre between January 2012 and May 2017 were included. These are divided as Group A (n=226, FTCs which were performed to prevent OHSS) and Group B (n=94, electively performed FTC group). In all FTCs, vitrification was used as cryopreservation method and endometrium preparation was performed by artificial protocol. SPSS Version 22 was used for statistical analysis.

Results: In Group A, primary infertility rate and basal antral follicle count is significantly higher than in Group B, while other demographic characteristics is similar between the groups (Table 1). Group A has significantly higher number of retrieved oocyte, MII oocyte and obtained embryo as well as increased transferred blastocyst rate compared to Group B (Table 2). However, clinical pregnancy rates are not different between the groups (Table 3).

Conclusion: Although the number of retrieved MII oocytes, obtained embryos and transferred blastocyst rates are significantly higher in FTCs to prevent OHSS, clinical pregnancy rates are not improved compared to electively performed FTCs after fresh IVF/ICSI and embryo transfer (ET) cycles.

Keywords: OHSS, frozen thawed cycles, clinical pregnancy rate

[Abstract: 0258] [OP-55] [Accepted: Oral Presentation]

Varicocele an old Story with Novel Findings Using Animal Models; Molecular Changes of Testicular Tissue, Semen Quality and Pre-implantation Embryo Development

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Objective: VCL (Varicocele), is known as main male-related infertility disorder in more than 15-20% of infertile male individuals. Suppressed endocrine and antioxidant statuses of testicles, progressive germ cells depletion, developmental inflammation and reduced semen quality have been illustrated as VCL-induced pathophysiology. Present study was done to uncover the role of Leydig-Sertoli cells niche on SSCs (spermatogonial stem cells) self-renewal, SSCs cell cycle machinery and to uncover the role of oxidative stress and inflammatory reactions on germ cells development and pre-implantation embryo development after experimental VCL induction.

Materials-Methods: 20 mature wistar rats were divided into two control-sham and test groups. The experimental varicocele was induced in test group. Following 60 days, the Leydig cells distribution and steroidogenesis as well as Sertoli cells distribution were assessed using special immunohistochemical and immunofluorescent staining. The Sertoli cells-related growth factor GDNF (Glial cell-derived neurotrophic factor) and SSCs-restricted C-ret, Gfrα1, Etv5 and Bcl-6b mRNA and proteins expression/synthesis were evaluated using RT-PCR, Western blotting and immunohistochemical techniques. To estimate the growth factor-related cell cycle checkpoints expression, the mRNA and protein levels of cyclin D1, Cdk4, p53 and p21 were analyzed. Serum levels of testosterone and inhibin B, tissue total antioxidant capacity, GSH-px, SOD and MDA levels were estimated. The tissue DNA fragmentation was analyzed using DNA ladder and TUNEL staining. Moreover to estimate the role of inflammation in SSCs proliferation, the testicular nitric oxide and COX II contents and activities were investigated using ELISA, RT-PCR and immunohistochemical methods. Finally, the sperm quality and pre-implantation embryo development were analyzed.

Results: The VCL significantly ($P<0.05$) diminished Leydig and Sertoli cells number/one mm2 of tissue, diminished Leydig cells steroidogenesis, reduced serum levels of testosterone and inhibin B, down-regulated testicular antioxidant potential, suppressed GDNF, C-ret and Gfrα1, Etv5 and Bcl-6b expression and synthesis. Moreover, VCL-induced animals exhibited diminished expression/synthesis of cyclin D1 and Cdk4 and represented enhanced p21 and p53 expression/synthesis. Severe DNA fragmentation as well as enhanced testicular nitric oxide, COX II levels were revealed in VCL-induced animals. Moreover, the VCL-induced animals exhibited decreased sperm count, motility and viability, and represented enhanced DNA fragmentation. Decreased percentage of zygote formation, 2-cell, 4-cell embryos and blastocyst formation were revealed in VCL-induced group versus control animals.

Conclusion: The VCL by inducing sever oxidative stress and by initiating/progressing inflammatory reactions suppresses the testicular antioxidant and endocrine statuses, which in turn adversely affects the Leydig-Sertoli cells network. The disrupted network interactions suppress the Sertoli cells-related niche through down-regulating GDNF and its receptors expression. On the other hand, the VCL adversely affects the growth factor-related cell cycle machinery by inducing severe DNA damage and reducing cyclin D1 and Cdk4 expression, which in turn results in cyclin D1 degradation through proteasome pathway, p21 interaction with Cdk4. All these molecular derangements lead to SSCs depletion, which is able to decrease sperm production/count. Moreover, we showed that, oxidative stress along with inflammatory reactions individually and simultaneously affect the sperm quality during late sperm maturation process, which in term negatively affects the pre-implantation embryo development.

Keywords: Varicocele, spermatogonial stem cell, spermatogenesis, self-renewal, embryo development