flow; Group B (n=394): with increasing endometrial thickness only; Group C (n=252): with static endometrium) All frozen embryo transfers were performed at D3 embryo stage. Luteal support of estrogen and progesterone were continued and serum βhCG was done 14 days after ET. Clinical pregnancy was confirmed by using transvaginal sonography after 4 weeks. Clinical pregnancy and live birth rate were the main outcome measures. Statistical analyses were done by chi-square and comparisons between groups were measured by odds ratio (OR).

RESULTS: The overall pregnancy rate was 33.9%. Pregnancy rate was significantly high ($p<0.001$) in group A (n= 398) (42.84%) in comparison to group B (n =98) (24.87%) and group C (n= 38) (15.07%). Significantly higher live birth rate (OR: 2.18; 95% CI: 1.65-2.87; $p<0.001$) was observed in Group A (36.06%) in comparison to Group B (20.56%) and Group C (11.11%).

CONCLUSIONS: An increasing endometrium and vascularity of endometrium might cue towards a favorable outcome in FET cycles. Our findings may influence the decision of clinicians to do the transfer after observing endometrial vascularity and/or increasing endometrium while performing FET.

P-291 Tuesday, October 18, 2016

ER MAP ALLOW THE RELIABLE DETERMINATION OF THE WINDOW OF IMPLANTATION IN INFERTILE WOMEN. J. A. Horcajadas,[a] M. Enciso,[b] J. Sarasa,[b] J. P. Carrascosa,[a] P. Martinez,[b] J. Aizpurua,[c] S. Munne.[d] [a]Genetics, University Pablo de Olavide, Sevilla, Spain; [b]Genetics, IGLS, Alicante, Spain; [c]IVF Spain, Alicante, Spain; [d]Genetics, Reprogenetics, Livingston, NJ.

OBJECTIVE: The aim of the present study was to develop a reliable endometrial receptivity test based on the expression analysis of genes involved in endometrial proliferation and the maternal immune response associated to embryonic implantation.

DESIGN: Study design included 2 phases: a first technical validation and a second window of implantation (WOI) definition phase. Validation was achieved on 260 endometrial samples including 96 fertile women and 174 infertile patients. Expression analyses of 192 genes involved in endometrial receptivity and immune response were performed. All patient samples were additionally tested with an independent endometrial receptivity assay (ERA) to verify their endometrial status. Endometrial receptivity of an independent group of 182 patients was then tested using ER Map so that the precise moment and duration of their WOI could be established.

MATERIALS AND METHODS: Endometrial biopsy samples were obtained at LH+2 and +7 in fertile subjects and at P4+5 in infertile patients for the first validation phase and at P+4, P+4.5, P+5, P+5.5, P+6 and P+6.5 in ART patients for the precise determination of the moment and duration of the WOI. Total RNA was purified using RNeasy Mini Kit (Qiagen) and quality-checked using Agilent Bioanalyzer. Oligonucleotides for the amplification of the 192 selected genes were designed by using GeneFisher 2.0 platform. Gene expression was quantified by qRT-PCR using BiomarkHD platform.

RESULTS: ER Map test can predict endometrial receptivity status by qRT-PCR using a new panel of 48 genes. These genes allowed accurate classification of samples into different receptivity status. Using a discriminant model, 100% cases were correctly classified in both groups, fertile and infertile women. Data indicated that the duration of the WOI was approximately 32 hours and that in the majority of the cases analysed it comprised the period between P+5 and P+6. “Receptive” was the most common diagnosis in biopsies performed in P+5, +5.5 and +6. The highest likelihood of receptivity (81,5%) was found 5 days and 12 hours after the first progesterone intake (i.e P+5.5). Pre-receptive was the most common diagnosis in biopsies performed at P+4 and P+4.5 (87.5% and 60.7% respectively). Post-receptive was the most common diagnosis in biopsies at P+6.5 (83.3%). A 25% of the patients presented a displaced WOI.

CONCLUSIONS: ER Map test can predict endometrial receptivity status by qRT-PCR using a new panel of 48 genes involved in endometrial proliferation and immune response. Accurate determination of the window of implantation (WOI) is feasible using this new tool. Biopsy for endometrial receptivity evaluation should be performed between 5 and 6 days after the first P4 intake in a HRT cycle, preferably at P+5.5.

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P-292 Tuesday, October 18, 2016

HUMAN ENDOMETRIAL MICRORNAS ASSOCIATED WITH MISCARRIAGES. L. Drissennek,[a] D. Haouzi,[b] Y. Antoine,[c] F. Entezami,[d] S. Bringer,[e] S. Hamamah.[f] [a]INSERM U1203, Human Early Embryonic Development and Pluripotency, Montpellier, France; [b]U1203 - IRMB - CHRU Montpellier, Montpellier, France; [c]U1203-IRMB, Clermont-l’Hærault, France; [d]IVF Laboratory Eylau-UNILABS, Clinique de La Muette-Ramsay GDS, Paris, France; [e]Medical Doctor, Montpellier, France; [f]ART/PGD Department, Arnaud de Villeneuve Hospital, Montpellier, France.

OBJECTIVE: Are there miRNAs in endometrial tissue during the implantation windows predicting miscarriage of the attempt?

DESIGN: Endometrial biopsies (n=10) were collected during the implantation windows under hormone replacement therapy (6 to 9 days after progesterone administration). Then RNAs were extracted for mRNA and miRNA purification to perform RT-qPCR gene expression and the miRNA expression profile, respectively. The RT-qPCR gene expression consists of measuring the expression level of 13 transcripts associated to the endometrial receptivity by RT-qPCR.

MATERIALS AND METHODS: Endometrial biopsies were obtained from 10 patients with repeated implantation failures. The endometrial receptivity status was asserted. Fresh or frozen-thawed embryo transfer has been performed according to the Win-Test result allowing successful pregnancy. Then, miRNA expression profiles between the two groups of pregnant patients ending with a miscarriage (n=5) between 8-12 weeks period of amenorrhoea and live birth (n=5), were evaluated with the *Affymetrix® miRNA 4.1 Array Strips.*

RESULTS: Using 3 distinct statistical analyses, we identified 126 miRNAs differentially expressed pregnant patients succeeding to a live birth versus a miscarriage. These 126 miRNAs were all over-expressed in endometrium analysed during the implantation windows of subsequent pregnant patients succeeding to a miscarriage. Using the Ingenuity software, we first aimed to identify the potential he potential target genes of these microRNAs. We identified 28 microRNAs that are putative regulators of 11062 genes attached to numerous biological functions that play a crucial in implantation and maintain of pregnancy.

CONCLUSIONS: The identification of endometrial miRNAs associated to a miscarriage opens new perspectives in patient care management.

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P-293 Tuesday, October 18, 2016

QUANTITATIVE ASSESSMENT OF ENDOMETRIAL VOLUME AND UTERINE VASCULARITY AND PREGNANCY OUTCOME IN FROZEN-THAWED EMBRYO TRANSFER CYCLES. K. Lee, J. Joo, S. Kim, S. Lee. Pusan National University Hospital, Busan, Korea, Republic of.

OBJECTIVE: To investigate the usefulness of the endometrial volume and vascular indices in the endometrial region as an effective predictor for pregnancy outcome in frozen-thawed embryo transfer (FET).

DESIGN: We evaluated 131 embryo transfer cycles in 73 infertile women. After controlled ovarian stimulation all embryos were cultured to blastocyst stage, and the blastocysts with good quality were vitrified for elective FET.

MATERIALS AND METHODS: On the day of FET, endometrial thickness, endometrial volume, pulsatility index (PI), and resistance index of uterine artery and endometrial-subendometrial vessels (ESVs) with zonal discrimination were evaluated by transvaginal ultrasonography in each patient. These variables were compared between pregnant and nonpregnant cycles.

RESULTS: The endometrial volume was significantly higher in the pregnant group (2.32 +/- 0.86, 1.96 +/- 0.62 mL, $p=0.007$). Also, PI of ESVs was significantly higher in the pregnant cycle (2.58 +/- 1.32 and 2.05 +/- 1.08, $p=0.016$). The other variables were not different between the 2 groups.

CONCLUSIONS: This study suggested that endometrial volume and the vascular indices measured in endometrial region are useful predictors of pregnancy outcome.

P-294 Tuesday, October 18, 2016

THE PRESENCE OF A THIN ENDOMETRIAL STRIPE IN EXTREMELY LOW BMI PATIENTS IS NOT ASSOCIATED WITH LOWER IMPLANTATION RATES. L. Sekhon,[a,b] K. Shaia,[a,b] J. Rodriguez-Purata,[a] J. A. Lee,[a] L. Grunfeld,[a,b] A. B. Copperman.[a,b] [a]Reproductive Medicine Associates of New York, New York, NY; [b]Obstetrics, Gynecology & Reproductive Science, Icahn School of Medicine at Mount Sinai, New York, NY.