

**IMPACT STATEMENT:** This study provides reassuring evidence that EMT does not affect obstetrical outcomes after ART.

**P-490** 6:30 AM Wednesday, October 20, 2021

**ULTRASOUND BASED ENDOMETRIAL RECEPTIVITY SCORING ACCURATELY IDENTIFIES IVF CYCLES WITH LOW PROBABILITY OF PREGNANCY.**



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**OBJECTIVE:** Ultrasonographic endometrial thickness (ET) measurements have become a clinical standard for cycle selection in IVF. However, large studies on the effectiveness of midsagittal ET measurements as a predictor of cycle outcome are contradictory. Quantitative and qualitative ultrasound based endometrial receptivity assessment (usER; Matris™, Synergyne Imaging Technology, Inc, Saskatoon, SK) for cycle selection has recently been demonstrated to improve pregnancy rates over standard of care ET measurements. usER analysis is conducted on transverse ultrasonographic images of the endometrium acquired 10–15 mm from the endometrial-myometrial junction at the uterine fundus. Over 40 parameters are extracted from the image attributes and numerical endometrial receptivity scores from 0–10 (0 poor receptivity – 10 optimal receptivity) characterizing virtual histology are calculated. Patients with usER scores of 7.0 and higher are recommended to proceed to single embryo transfer (SET), while cycles scoring 6.5 or lower are recommended for deferral based on low probability of pregnancy. Embryos from deferred cycles are conserved for future optimal cycles. We assessed the interrelationships among ET, usER score and pregnancy outcome. Our objective was to test the hypotheses that: 1) diagnostic usER testing facilitates identification of cycles in which probability of pregnancy is low; and, 2) usER scores are not correlated with ET.

**MATERIALS AND METHODS:** All IVF cycles conducted at a tertiary ART clinic which had usER scores, ET measurements, and outcome data available were considered (n=2274). Data were acquired from a review of deidentified patient files from 2014–2019. We conducted general linear [logistic] models multivariate regression analyses of the relationships between ET, usER score, and pregnancy.

**RESULTS:** ET and usER score showed negligible correlation ( $R^2=0.30$ ). ET measurements ranged from 2.9 mm to 23.0 mm (mean 9.9 mm  $\pm$  2.56 mm SD). usER scores ranged from 0.5 to 9.5 (mean 7.5  $\pm$  1.5 SD). 1695 (74.5 %) cycles had usER scores of 7.0 or above (recommended to proceed to SET). Pregnancy outcomes of the 2274 cycles were: 835 pregnant (47% per SET), 954 not pregnant (53% per SET), 485 no embryo transfer. Of the 579 cycles which received usER scores of 6.5 or lower (deferral recommended), 179 proceeded to embryo transfer against recommendation. Regression analysis of the 179 low usER scores ( $\leq 6.5$ ) reliably predicted the outcome of 'not pregnant' ( $p=0.020$ ).

**CONCLUSIONS:** ET measurements and usER diagnostic are fundamentally different. ET was not a significant predictor of pregnancy outcome ( $p=0.132$ ). Deferral of cycles with low usER scores also resulted in the conservation of 310 embryos.

**IMPACT STATEMENT:** Diagnostic usER analyses accurately identify insufficient endometria unlikely to result in pregnancy, providing an opportunity for embryo conservation.

**SUPPORT:** Financial support in the form of regular salaries from University of Saskatchewan, Synergyne Imaging Technology, Inc and Trio Fertility.

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**SUBTLE ENDOMETRIAL ABNORMALITIES DO NOT AFFECT THE PREGNANCY RATE IN FRESH ICSI CYCLES.**



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**OBJECTIVE:** The study aimed to determine whether the presence of subtle endometrial abnormalities discovered by office hysteroscopy (OH) affects the pregnancy rate in fresh intracytoplasmic sperm injection (ICSI) cycles.

**MATERIALS AND METHODS:** A prospective cohort study included women undergoing their first ICSI cycles was performed in assisted reproductive technology unit. Patients were divided into two groups: patients with subtle endometrial abnormalities diagnosed by OH (group 1, n=78), and patients with normal uterine cavity (group 2, n=122). OH was conducted post-menstrual and subtle abnormalities detected included hypervascularization, petechiae, mucosal elevation, micropolyps, pale endometrium and single adhesion band. The main outcome measures were clinical pregnancy and implantation rates

**RESULTS:** The most common subtle abnormality observed was pale endometrium in 35.9% of cases. Both groups were comparable regarding the baseline clinical data and endometrial thickness. Additionally, total amount of gonadotrophins used, duration of stimulation, peak estradiol concentrations, peak endometrial thickness, number of mature follicles and number of embryos transferred were not significantly different between both groups. The implantation rate was similar in both groups ( $2.35 \pm 0.83$  vs.  $2.22 \pm 0.84$ ,  $p=0.465$ ). Also, the pregnancy rate was similar in both groups ( $38.5\%$  vs.  $33.6\%$ ,  $p=0.067$ )

**CONCLUSIONS:** Subtle endometrial abnormalities diagnosed by OH do not negatively affect pregnancy and implantation outcomes in fresh ICSI cycles.

**IMPACT STATEMENT:** Subtle endometrial abnormalities have no effect on pregnancy in fresh ICSI cycles

**SUPPORT:** None

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**EFFECT OF ANTIBIOTIC TREATMENT FOR CHRONIC ENDOMETRITIS ON ART CYCLE OUTCOME.**



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**OBJECTIVE:** To determine the prevalence of chronic endometritis (CE) in infertile women undergoing ART and effect of antibiotic treatment on the pregnancy rate in the frozen embryo transfer (FET) cycles

**MATERIALS AND METHODS:** We recruited 78 infertile women undergoing ART in tertiary level fertility clinic. Endometrial samples were obtained in proliferative phase of menstrual cycle and subjected to immunohistochemical (CD138) and histopathological diagnosis of CE. Antibiotic treatment comprising of Tab doxycycline 100 mg BD for 14 days followed by fixed dose combination of Tab ciprofloxacin 500mg and Tab tinidazole 600 mg BD for 14 days was administered to the CE diagnosed women and subsequently their histopathologic cure rate was assessed by repeat biopsy. Women with persistent chronic endometritis were treated with Tab clindamycin 300mg BD for 14 days. Frozen embryo transfer with at least one good quality embryo was done for all women and further reproductive outcomes were studied and compared

**RESULTS:** In our study, mean age and BMI were  $30.5 \pm 4.5$  years and  $26.6 + 4.29$  kg/m<sup>2</sup>. Majority of women had primary infertility (53/79, 67%). Twenty-six out of 78 infertile women were diagnosed with CE (33.3%). The cure rate after antibiotic treatment was 69.8%. Pregnancy rate and miscarriage rate in cured CE and non-CE group were 66.7% & 25% and 55.7% & 27.5% respectively ( $p$  value:- 0.41). There was lower pregnancy rate (37.5%) and higher miscarriage rate (33%) in women with persistent CE although it did not reach statistical significance. ( $p$  value:- 0.16)

**CONCLUSIONS:** High prevalence of CE is noted in infertile women undergoing ART and antibiotic treatment may improve reproductive outcomes in these women

**IMPACT STATEMENT:** Women with CE have decreased implantation potential and in this study, diagnosing and treating it before FET improved the pregnancy rates in these women. Thus, diagnosis and treatment of CE in infertile women undergoing ART may improve their reproductive outcomes after embryo transfer cycles