

Title : Evaluating ART and Obstetric Outcomes in Chronic Endometriosis Patients via Administration of Oral Synbiotics with Antibiotics Treatment Undergoing Frozen Embryo Transfer : A Prospective Two Arm Study

Introduction: Chronic endometriosis (CE), is abnormal invasion of plasma cells in endometrial stroma, causing unexplained infertility (UI), recurrent implantation failure (RIF) and recurrent pregnancy losses (RPL), diagnosed via hysteroscopy and immunohistochemistry using CD138 biomarker. Gut-uterine axis microbiota transmission provides support for oral *La#obacillus* supplementation and precise probiotics with antibiotics could restore eubiosis in infertile patients.

Methods:

280 patients with RIF, RPL, UI screened for CE and 112 were positive. 112 CE patients quasi-randomized, two arms (47 group A and 65 group B).

Group A Antibiotic treatment and Group B Antibiotics + Oral synbiotic capsules (marketed Pregbiome) containing 103 CFU *La#obacillus gasseri*, 103 CFU *La#obacillus rhamnosus*, 103 CFU *La#obacillus jenseni* for two months.

Group A 15 patients had repeat CE vs Group B 2 patients had repeat CE.

These women underwent IVF and had embryos frozen prior.

In CE-treated, 35 patients Group A and 53 patients Group B, day 3 or day 5 embryos were transferred in a frozen transfer.

Implantation rates (IR), Ongoing pregnancy rates (OPR), Miscarriage Rate (MR) and Live Birth Rates (LBR) were evaluated using unpaired Student's t-test for unequal variance.

Bonferroni correction for multiple comparisons has been applied and corrected p-values are displayed.

Results:

Group A had 83% IR vs Group B 92% IR in Day 3 embryos (p=0.6)

Group A had 77% IR and Group B 92% IR in Day 5 embryos (p=0.2)

Group A had 58% OPR vs Group B 67% OPR in Day 3 (p=0.7)

Group A had 43% OPR vs Group B 77% OPR in Day 5 (p<0.01)

Group A had 42% LBR vs Group B 50% LBR in Day 3 (p=0.3)

Group A had 40% LBR vs Group B 55% LBR in Day 5 (p<0.01)

Group A had 8% Miscarriage rate (MR) vs Group B had 0% MR in Day 3 (p=0.7)

Group A had 17% MR vs Group B 6% MR in Day 5 (p<0.05)

Significant increases in group B vs group A in ongoing pregnancy and live birth rates (p<0.05) and significant reduction in miscarriage rate (p<0.05)

Conclusion: We demonstrate patients with CE diagnosis have a resolution rate of 97% successful treatment with antibiotic + probiotic treatment vs 68% with only antibiotics and significant increases in ongoing pregnancies and live births with miscarriage reduction.



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