ART outcomes in endometriosis-affected women after fresh versus frozen embryo transfer cycles: a matched cohort study

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Introduction: assisted-reproductive-technology (ART) improvements make deferred embryo transfer (Def-ET) a feasible alternative to fresh embryo transfer. Frozen-thawed embryos transfer could avoid negative impacts of controlled ovarian stimulation on endometrial receptivity. In endometriosis-related infertility the eutopic endometrium is abnormal and functional alterations are seen as likely to alter quality of endometrial receptivity. One of the main questions in the endometriosis ART management is to know whether Def-ET could restore optimal receptivity in endometriosis-affected women leading to increase in pregnancy rates. The aim of this cohort study was to compare ART outcomes between fresh versus Def-ET in endometriosis women.

Methods: This cohort study was conducted in a tertiary care university hospital between 01/10/2012 and 31/12/2014. After matching by age, number of previous IVF/ICSI cycles and endometriosis phenotypes (superficial peritoneal endometriosis, ovarian endometrioma or deeply infiltrating endometriosis), 135 cycles were included in the analysis in the fresh embryo transfer (Fresh ET) group and 135 in the Def-ET group. Diagnosis of endometriosis was based on published imaging criteria (transvaginal sonography or magnetic resonance imaging) or histologically proven in women who had previous surgery. Statistical analyses were conducted using univariate and multivariate logistic regression models.

Results: The cumulative clinical pregnancy rate was significantly increased in the Def-ET group compared to the fresh ET group [58 (43%) vs. 40 (29.6%), p=0.023]. The implantation rate was 0.4 ± 0.5 in the def-ET group and 0.2 ± 0.3 in the fresh ET group (p<0.001). The cumulative ongoing pregnancy rate was 34.8% (n=24) and 17.8% (n=24) respectively (p=0.001). After multivariate logistic regression, taking into account potential confounders as AMH level, type of protocol, total dose of injected gonadotropin (IU), type of embryo transfer, the number of oocytes retrieved and a previous history of endometrioma surgery, the differed frozen-thawed embryo transfer was associated with a significant increase in cumulative ongoing pregnancy rate as compared to fresh ET (OR=2.20, IC95% 1.17-4.14, p <0.05).

Conclusion: Frozen-thawed embryo transfer in endometriosis-affected women is associated with a significantly higher implantation rate, cumulative pregnancy rate and cumulative ongoing pregnancy rate.

Mots clefs : Fresh embryo transfer, Frozen-thawed embryo transfer, In vitro fertilization, endometriosis

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