Journal of Reproduction & Contraception
2016 Mar.; 27(1):1-11
doi: 10.7669/j.issn.1001-7844.2016.01.0001
E-mail: randc_journal@163.com

• ORIGINAL PAPER •

Different endometrial preparation protocols yield similar pregnancy outcomes for frozen-thawed embryo transfer in patients with advanced endometriosis

Hai-yan GUO, Yun WANG, Qiu-ju CHEN, Wei-ran CHAI, Li-hua SUN, Ai AI, Yong-lun FU, Qi-feng LYU, Yan-ping KUANG

Department of Assisted Reproduction, Shanghai Ninth People's Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai 200011, China

Objective *To explore the different endometrial preparation for frozen-thawed embryo transfer (FET) in women with advanced endometriosis (EMS).*

Methods *The pregnancy outcomes of patients with advanced EMS (542 cycles), who were prepared for FET, were retrospectively assessed. Included patients underwent a total of 233 FET cycles (180 patients) using natural cycle (NC), a total of 142 FET cycles (115 patients) using letrozole (LE) ovulation induction, and a total of 167 FET cycles (137 patients) using hormonal replacement treatment (HRT) for endometrial preparation.*

Results *There were no significant diffenences in the clinical pregnancy rate (LE: 49.30%, NC: 50.21%, and HRT: 43.11%, P=0.343), the implantation rate (LE: 29.26%, NC: 36.03%, and HRT: 29.55%, P=0.084), and the live birth rate (LE: 38.02%, NC: 39.11%, and HRT: 35.33%, P=0.648) among the three groups. No statistically significant differences were observed in the ongoing pregnancy rate, the miscarriage rate, and the pregnancy complication rate. The single birth weight in patients using NC-FET was lower than that in patients using HRT-FET (P=0.044) and a higher twin birth weight in patients using LE-FET were observed compared with other groups (P=0.022). The rate of birth weight <2 500 g was also higher in the NC-FET group than in other groups. No congenital birth defects were found in the three groups.*

Conclusion *Different endometrial preparation protocols without ultra-long GnRH-a*

This study was supported in part by grants from the National Natural Science Foundation of China (No. 81270749 and No. 81470064) and the Natural Science Foundation of Shanghai, China (No. 15411953000, No. 15411964500 and No. 14ZR1423900)

Corresponding author: Yan-ping KUANG; Tel: +86-21-23271699*5538; E-mail: Kuangyanp@126.com

down-regulation for FET yield similar pregnancy outcomes in patients with EMS. A tailored endometrial preparation protocol should be recommended according to different patients' situation.

Key words: clinical pregnancy outcomes; endometrial preparation; endometriosis (EMS); frozen-thawed embryo transfer (FET)

Although a number of mechanisms have been proposed to explain how endometriosis (EMS) may affect normal reproductive function, no conclusive evidence exists as to how this disease influences fertility till date. Many factors have been suggested as playing a role in the infertility associated with EMS, such as altered pelvic anatomy, impaired ovary function, distorted microenvironment, altered endometrial receptivity, and reduced oocyte/embryo quality[1,2]. Improvement in controlled ovarian hyperstimulation (COH) through the down-regulation of gonadotropin-releasing hormone agonist (GnRH-a) may suppress some of the negative effects of EMS on pregnancy[3-7]. However, no consensus exists concerning the impact of EMS on *in vitro* fertilization (IVF)/intracytoplasmic sperm injection (ICSI) outcomes. A number of studies have shown that administering down-regulation drugs for 3–6 months prior to the implementation of IVF/ICSI can significantly improve the pregnancy outcomes[8]. Since the "freeze-all" embryo strategy was performed, not very much attention was needed to pay to the endometrium during the COH process. In frozen-thawed embryo transfer (FET) cycles, endometrial preparation protocol can be focused. So far, endometrial preparation protocols following FET cycles in patients with advanced EMS mainly include pituitary down-regulation with long-term GnRH-a administration[9]. GnRH-a down-regulation for endometrial preparation can completely and effectively suppress the pituitary, and improve the embryo quality and endometrium receptivity in women with EMS. However, the data on the effectiveness of this protocol in endometrial receptivity also conflict. Haouzi et al.[10] supported the idea that GnRH-a diminished endometrial receptivity. However, some other scholars confirmed that down-regulation in FET cycles improves the pregnancy outcomes compared with natural cycle (NC)-FET in advanced EMS[11]. NC, letrozole (LE) ovulation induction, and hormone replacement treatment (HRT) were adopted for endometrial preparation without ultra-long GnRH-a down-regulation for FET in women with advanced EMS, which were more time-saving and cost-saving, with no side effects for long-term GnRH-a application, making it easier for the patients to accept. A large number of studies suggest that the three kinds of endometrial preparation protocols have similar clinical pregnancy outcomes in tubal infertility[12]. Therefore, endometrial preparation for FET is critical for successful clinical pregnancy outcomes in patients. However, no consensus has yet been reached on optimal endometrial preparation protocol for FET with severe EMS.