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Title:

OPTIMAL ENDOMETRIAL PREPARATION FOR FROZEN EMBRYO TRANSFER (FET) OF SCREENED EMBRYOS IS INDEPENDENT OF FOLLICULAR PHASE LENGTH

Authors:

Jonah Bardos, MD, MBE², Jorge Rodriguez-Purata, MD¹; Michael C. Whitehouse, BA¹; Joseph A. Lee, BA¹; Benjamin Sandler, MD^{1,2}; Daniel Stein, MD^{1,2}. Alan B. Copperman, MD^{1,2};

Affiliations:

1. Reproductive Medicine Associates of New York, 635 Madison Ave 10th Floor New York, New York, United States, 10022
2. Obstetrics, Gynecology and Reproductive Science, Icahn School of Medicine at Mount Sinai, Klingenstein Pavilion 1176 Fifth Avenue 9th Floor New York, New York, United States, 10029.

Objective:

The modern treatment of the infertile patient often includes ovarian stimulation, oocyte retrieval, fertilization, biopsy and chromosomal analysis (CCS), and vitrification. Embryos found to be normal can be transferred in a subsequent FET cycle. We were able to control for embryo quality by using only screened embryos and for synchronization by initiating progesterone treatment five days prior to embryo transfer and were able to ask the question of whether the number of days of estradiol preparation impacts the likelihood of implantation.

Design:

Retrospective analysis

Materials and Methods:

Patients who underwent an IVF cycle with qPCR-based CCS that had ≥ 1 euploid embryo available for FET were included. Fresh ETs were excluded from this analysis. Patients started oral estradiol 2 mg twice daily for four days, then 2 mg three times daily. Endometrial thickness was assessed weekly until a thickness of ≥ 7 mm was observed. Progesterone supplementation was then initiated, and five days later, re-warming and ultrasound guided transfer was performed. A Poisson regression model was used to predict if the total number of days of estradiol impacted implantation rates. Statistical difference of $p < 0.05$ was considered significant.

Results:

A total of 511 euploid FET cycles were included in this analysis. Estrace administration ranged from 13 to 23 days (17.7 ± 2.5). We observed similar implantation rates (mean, SD, range) regardless of the number of days estradiol was administered. In addition, there was no difference in implantation rates when analyzing the number of days of estrogen use following achievement of a 7mm endometrial lining and



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prior to progesterone initiation (mead, SD). After applying the Poisson regression model, there was no correlation between the number of days with estradiol and implantation rates.

Conclusions:

In synthetic FET cycles, estrogen and progesterone are administered in a sequential regimen that mimics the endocrine exposure of the endometrium in the normal cycle. This is the first study to analyze if different durations of a synthetically manipulated follicular phase had any impact on implantation rates of euploid embryos. This analysis revealed no impact on implantation rates in the context of number of days of estradiol administration. Similar to a physiologic state, the length of the follicular phase seems to not influence the possibility of an embryo to implant.

Support:

None.

Table:

Estrace Days	Count	Average of Et Count	Implantation Rate
13	20	1.2	46%
14	30	1.1	64%
15	44	1.113636	55%
16	78	1.230769	55%
17	64	1.21875	67%
18	55	1.290909	52%
19	60	1.316667	49%
20	34	1.294118	55%
21	49	1.326531	58%
22	23	1.086957	64%
23	13	1.230769	63%