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**Title**

**FET IN THE CYCLE IMMEDIATELY AFTER IVF/CRYO ALL WITH PREIMPLANTATION GENETIC SCREENING RESULTS IN HIGHER IMPLANTATION RATE AND DECREASED EARLY PREGNANCY LOSS RATE COMPARED TO DEFERRED FET**

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**Objective:**

Refined cryopreservation techniques have displayed improved cycle outcomes after a frozen embryo transfer (FET) as compared to fresh embryo transfer (ET). Recently, several practices counsel patients to undergo a two-cycle approach: a cryo-all cycle (all viable embryos are biopsied for genomic interpretation and cryopreserved) with a subsequent FET cycle. This strategy gives practitioners a greater opportunity to monitor, influence and enhance embryo/endometrium synchrony. Presently, there is no clinical data regarding whether there is benefit to allowing one additional menstrual cycle to occur before proceeding with a FET or to directly undergo an ET the immediate subsequent cycle. Patients waiting one menstrual cycle in-between the cryo-all cycle and the FET are hypothesized to achieve higher implantation rates (IRs).

**Design:**

Retrospective cohort analysis

**Materials and Methods:**

All patients who underwent an IVF cycle with q-PCR-based comprehensive chromosome screening (CCS) (Pre-implantation genetic screening (PGS)) in which all embryos were cryopreserved after biopsy were included. Cohorts were segregated into cycle groups according to the period between biopsy/cryopreservation to first FET took place: A)  $\leq 45$  days; B)  $> 45$  days. The study was restricted to FETs performed  $< 120$  after the fresh cycle's oocyte retrieval. The



main outcome measure was IR. The study had 80% power to detect a 15% difference in IR between groups, with an alpha error of 0.05 (n=150 per group).

**Results:**

A total of 638 cycles were included (Group A: 428 cycles; Group B: 210). IR was statistically higher when a FET was carried out in the immediate menstrual cycle as compared to waiting >1 menstrual cycles (63.4% vs. 53.0%), with an embryo being 1.5 times more likely to implant (OR 1.5, 95% CI 1.1 – 2.1). The early pregnancy loss rate was statistically lower (18.1 vs. 25.0%) and patients showed a 33% less probability of having a miscarriage when proceeding more quickly to a FET (OR 0.67 (95% CI 0.44 – 0.99)).

**Conclusions:**

The study’s results suggest that undergoing a FET the immediate subsequent month after a cryo-all cycle leads to greater implantation success than waiting one menstrual cycle in-between. Patients who undergo an IVF cycle with PGS need not be discouraged from pursuing a FET attempt in their immediate subsequent menstrual cycle.

**Table:**

	1 month	2 months	Stats
<b>Cycles</b>	408	204	
<b>Age at FET</b>	36.3±4.1	37.2±4.0	NS
<b>Age at IVF</b>	36.2±4.1	36.9±4.0	NS
<b>BMI at FET</b>	22.7±4.0	22.8±4.4	NS
<b>BMI at IVF</b>	22.7±4.0	22.7±4.3	NS
<b>FSH at FET</b>	5.5±3.2	6.9±4.0	NS
<b>FSH at IVF</b>	6.0±3.2	6.1±3.2	NS
<b>AMH at FET</b>	3.9±4.7	3.3±2.9	NS
<b>AMH at IVF</b>	3.9±4.6	3.3±2.8	NS
<b>Endo Thickness at FET</b>	8.9±1.6	9.1±1.5	NS
<b>Retrieved</b>	17.4±10.4	16.6±8.2	NS
<b>2PN count</b>	11.3±7.3	9.9±5.2	NS
<b>Biopsy count</b>	5.8±4.2	5.0±3.5	NS
<b>ET count</b>	1.1±0.3	1.2±0.4	NS
<b>Clinical PR</b>	68.9% (281/408)	59.8% (122/204)	p<0.05



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<b>IR</b>	63.4% (303/478)	53.0% (132/249)	p<0.05
<b>Early Pregnancy Loss Rate</b>	18.1% (74/408)	25.0% (51/204)	p<0.05