

Extremes of Endometrial Thickness in Programmed Frozen Embryo Transfer Cycles

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BACKGROUND

- Endometrial thickness (EMT) is often measured as a marker of adequate endometrial estrogen exposure in programmed frozen embryo transfer cycles (pFET) prior to progesterone start.
- Optimal EMT remains controversial; many studies suggest a bell-curve relationship with poorer outcomes at extremes of EMT measurements, less than 7 mm and greater than 14 mm.
- There is also a paucity of data on EMT >14mm.

OBJECTIVE

To evaluate the relationship between extremes of EMT and programmed FET outcomes.

METHODS

- Retrospective study of 1,442 pFETs of a single euploid embryo between January 2018 and April 2023
- Patients were categorized into three categories based on EMT measured the day of or the day prior to progesterone start:
 - Thin (<7 mm)
 - “Optimal” (7-14 mm)
 - Thick (>14 mm)
- Excluded lack of PGT-A, multiple embryo transfer, third-party
- Primary outcomes: clinical pregnancy rate (bhCG > 5 mIU/mL), ongoing pregnancy rate (> 8 weeks gestation), live birth rate, and miscarriage rates
- Multivariate logistic regression accounting for age, endometrial preparation protocol, and physician

RESULTS

	EMT 7-14 mm n = 1,236 (85.7%)	EMT < 7 mm n = 66 (4.6%)	EMT > 14 mm n = 140 (9.7%)
Clinical pregnancy rate (bhCG ≥ 5 mIU/mL per transfer)	72.7% ref	68.2% 0.79 (0.46-1.35), P=0.38	77.9% 1.22 (0.80-1.87), P=0.35
Ongoing pregnancy rate (pregnancy ≥ 8wks per transfer)	61.1=2% ref	51.5% 0.67 (0.41-1.12), P=0.13	63.6% 1.02 (0.71-1.48), P=0.90
Live birth rate (per transfer)	39.3% ref	42.6% 0.89 (0.50-1.56), P=0.67	35.4% 1.13 (0.77-1.66), P=0.55
Biochemical pregnancy loss (per positive bHCG)	8.3% ref	9.1% 1.06 (0.44-2.54), P=0.90	8.6% 1.06 (0.56-2.00), P=0.85
Clinical pregnancy loss (per positive bHCG)	7.9% ref	12.1% 1.68 (0.77-3.65), P=0.19	8.6% 1.03 (0.55-1.94), P=0.92
Overall pregnancy loss (per positive bHCG)	22.6% ref	31.3% 1.49 (0.76-2.90), P=0.25	22.0% 0.96 (0.59-1.57), P=0.88

CONCLUSIONS

- In this population of single euploid pFETs, EMT outside of the “optimal” 7-14 mm range did not impact pregnancy outcomes.
- Endometrial thickness cutoffs may not be necessary in pFET cycles, as satisfactory pregnancy outcomes can still be achieved in the setting of a thin or thick EMT.

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