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FROZEN EMBRYO TRANSFER OUTCOMES IN PATIENTS WITH PRIOR CESAREAN DELIVERY: A FOCUS ON ENDOMETRIAL LINING PARAMETERS

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Title:

FROZEN EMBRYO TRANSFER OUTCOMES IN PATIENTS WITH PRIOR CESAREAN DELIVERY: A FOCUS ON ENDOMETRIAL LINING PARAMETERS

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Preferred Presentation Type:

Oral or Poster

Study Type:

Retrospective Cohort Study (includes comparator groups)

Category - Subcategory(ies):

Reproductive Surgery: Outcomes

Funding:

Nothing to disclose

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ACCME Disclosure

Nothing to disclose. No off-label or otherwise non-approved product use.

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This abstract has been approved by a local Institutional Review Board (IRB) or equivalent.

Applying for an award

Trainee: Yes

Abstract Category:

All Other Categories

Applied for the In-Training Award for Research

Abstract Text:

OBJECTIVE: To evaluate the association between prior mode of delivery (cesarean delivery (CD) versus vaginal delivery (VD)) and endometrial thickness (EMT) in a subsequent frozen embryo transfer (FET) cycle. The secondary aim was to evaluate FET cycles outcomes in this study cohort.

MATERIALS AND METHODS: This multicenter, retrospective cohort study included patients with one previous live birth who initiated a subsequent autologous FET cycle from 1/2012 to 12/2024. Patients were grouped by mode of prior delivery: CD or VD. Only the first FET cycle after live birth was included. FET cycles were further categorized as cancelled or non-cancelled. The primary outcome was EMT at final lining assessment prior to FET. Secondary outcomes included positive pregnancy, clinical pregnancy, live birth, biochemical loss, and clinical pregnancy loss. Subgroup analyses evaluated outcomes of euploid FETs only. Reasons for FET cycle cancellation were assessed. Wilcoxon rank and chi square tests were used for statistics; generalized linear models with log-transformed values and Poisson regression were used to adjust for confounders and calculate adjusted risk ratios (aRR) with 95% confidence intervals, with prior VD as the reference group.

RESULTS: 11,131 FET cycles consisting of 5,149 from patients with a prior CD and 5,982 from patients with a prior VD were included. An adjusted analysis demonstrated similar EMT between cohorts (CD: 10.4mm [10.3-10.5mm]; VD: 10.4mm [10.3-10.4mm], $p=0.4$). FET cycle cancellation due to thin endometrial lining was similar between groups (CD: 1.3%, VD: 1.2%, $p=0.7$; aRR 1.02 [0.72-1.43]); cancellation due to fluid accumulation in the endometrial lining was higher in the CD cohort (1.0% vs. 0.5%, $p<0.01$; aRR 2.22 [1.40-3.58]). Patients with a prior CD, compared to those with a prior VD, had lower live birth (49.5% vs. 53.0%, $p<0.01$; aRR 0.94 [0.91-0.98]) and clinical pregnancy rates (60.5% vs. 64.1%, $p<0.01$; aRR 0.94 [0.92-0.97]). Clinical pregnancy loss was similar between cohorts (CD: 10.6%, VD: 10.6%, $p=0.4$; aRR 0.94 [0.84-1.05]). Similar trends were observed in patients who underwent euploid FET, with a lower live birth rate demonstrated in those with prior CD (55.3% vs. 60.3%, $p<0.01$; aRR 0.91 [0.91-0.97]), but similar chance of clinical pregnancy loss (CD: 9.1%, VD: 9.4%, $p=0.8$; aRR 0.95 [0.78-1.16]).

CONCLUSIONS: Patients with a previous CD undergoing a subsequent FET cycle had similar EMT at final lining assessment and FET cycle cancellation due to thin endometrial lining. However, patients with a prior CD experienced higher cancellation due to fluid accumulation in the endometrial lining. Patients with a prior CD had lower clinical pregnancy and live birth rates compared to those with a prior VD, though no differences in chance of pregnancy loss.

IMPACT STATEMENT: While patients can be reassured that a prior CD does not appear to be associated with reduced EMT, receptivity in FET cycles may be slightly diminished, as reflected by a reduction in subsequent live birth rates. One explanation may be an altered endometrial environment, as prior CD was associated with an increased risk of FET cycle cancellation due to the presence of endometrial fluid accumulation.

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Biographical Sketch Early success, marked by his first publication in CELL at Harvard Medical School, inspired Joseph to continue his research endeavors in reproductive endocrinology and infertility. Joseph has been with Reproductive Medicine Associates of New York since 2011. Joseph has authored over 400 peer-reviewed abstracts & manuscripts. Passionate about development, he cultivates relationship with investors & entrepreneurs to advance reproductive endocrinology & infertility care.

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Reproductive Science Center

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Yes

Organization Name	Relationship Type	Who has this Relationship?
Alife	Paid Consultant Relationship Began - Monday, April 8, 2024 Relationship Ended -	Self
Ferring Pharmaceutical	Speaker's Bureau Relationship Began - Saturday, March 1, 2025 Relationship Ended -	Self
Lovu Health	Direct Stockholder Relationship Began - Saturday, June 1, 2024 Relationship Ended -	Self
U. S. Fertility	Direct Stockholder Relationship Began - Saturday, August 1, 2020 Relationship Ended -	Self
USF Pharmaceutical Contracting Alliance	Direct Stockholder Relationship Began - Wednesday, January 1, 2020 Relationship Ended -	Self

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Yes

Organization Name	Relationship Type	Who has this Relationship?
Progyny	Company Officer Relationship Began - Friday, August 25, 2017 Relationship Ended - Thursday, June 1, 2023 Paid Consultant Relationship Began - Relationship Ended - Direct Stockholder	Self

Organization Name	Relationship Type	Who has this Relationship?	
	Relationship Began - Friday, August 25, 2017 Relationship Ended - Friday, November 1, 2024		

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 [Alan B. Copperman M.D. - CV \(March 2024\).docx](#)

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Biographical Sketch Phillip Romanski, M.D., M.Sc., is a Reproductive Endocrinology and Infertility physician at RMA of New York in Manhattan and is a faculty member at the National Institutes of Health. He is an expert in family-building including the evaluation and management of female and male infertility, third-party reproduction, and fertility preservation. Dr. Romanski completed his residency in Obstetrics and Gynecology at Harvard Medical School (Brigham and Women's Hospital/Massachusetts General Hospital) and his fellowship in Reproductive Endocrinology and Infertility at the Weill Cornell Medical Center/NewYork-Presbyterian Hospital. Dr. Romanski additionally serves as the Associate Research Director for US Fertility and has authored over 60 peer-reviewed research publications with a particular interest in patients with a history of unsuccessful treatment and patients with diminished ovarian reserve. In recognition of his research contributions, he has received multiple national awards and has subsequently been invited to speak at both national and international conferences to present his work.

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Neumora	Direct Stockholder Relationship Began - Friday, April 7, 2023 Relationship Ended -	Self	

Signature: Mary E. Morris

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