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SINGLE EUPLOID EMBRYO TRANSFERS IN PATIENTS UTILIZING PGT-M: IS PARITY ASSOCIATED WITH OUTCOMES?

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OBJECTIVE:

Preimplantation genetic testing for monogenic disorders (PGT-M) is offered to patients at risk for transferring an embryo affected by an inheritable disease. There is a paucity of data investigating the relationship between parity in patients without an infertility diagnosis who undergo in vitro fertilization (IVF) with PGT-M (1). The objective of this study is to evaluate patients with and without a history of live birth undergoing initial synthetic single euploid embryo transfer (SEET) with genetically tested embryos for monogenic disorders.

MATERIALS AND METHODS:

This retrospective cohort study was conducted at an academic-affiliated fertility center in patients who underwent a first, synthetic SEET with PGT-M between 2016 and 2023. Patients were excluded if they had a history of spontaneous abortion or termination of pregnancy. Group 1 included patients with a history of live birth and Group 2included patients without a history of live birth. Univariate analysis was performed to compare demographic variables and outcomes among cohorts using Wilcoxon ranks test and chi square analysis. Multivariable logistic regression was used to adjust for age at SEET, oocyte age, BMI, year of SEET, and embryo quality and was performed to compare odds of chemical pregnancy, clinical pregnancy, clinical pregnancy loss (CPL), and ongoing pregnancy/live birth (OP/LB).

RESULTS:

A total of 39 patients with history of prior live birth (Group 1) and 179 patients without a history of prior live birth (Group 2) who underwent their first, synthetic SEET with PGT-M were included. Demographics were similar between Group 1 and Group 2, with the exception of BMI (25.0 v 23.3, p=0.03). On univariate analysis, there was no significant difference in chemical pregnancy, clinical pregnancy, CPL, or OP/LB rates among the two groups. Ongoing pregnancy/live birth in Group 1was 59.0% and Group 2 was 56.4% (p=0.77). Adjusted logistic

regression showed no statistically significant difference in odds of any outcomes, including OP/LB (OR 1.05, CI 0.49-2.25)).

CONCLUSIONS:

Single euploid embryo transfer outcomes are similar in patients undergoing IVF for PGT-M with and without a history of live birth. Patients testing for monogenic disorders may not have infertility, highlighting the importance of understanding prognosis in this unique population to ensure practitioners provide accurate clinical expectations. Future studies with a larger cohort of patients may consider assessing the outcome of subsequent embryo transfers and whether mode of prior delivery, such as vaginal versus c-section, are predictors of outcome.

IMPACT STATEMENT:

In a suspected fertile population of patients who used PGT-M, prior live birth does not appear to be associated with outcome in first SEET.

REFERENCES:

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