DONOR SPERM (DS) UTILIZATION FROZEN EMBRYO TRANSFER (FET) CYCLES HAS INCREASED IN TANDEM WITH IMPROVED ACCESS TO CARE FOR ALL PATIENTS WHO UTILIZE DS

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BACKGROUND

- DS allows for increased reproductive autonomy and opportunities for those with male factor infertility (MF) and some with situational infertility [people assigned female at birth (AFAB) who desire single parenthood by choice (SPBC) and same sex AFAB couples (SS)].
- While many patients successfully utilize DS intrauterine inseminations (IUI), there are limited data on those that require a higher-level of assisted reproductive technology (ART) care.

OBJECTIVE

- To evaluate DS FET trends and outcomes over time at our large academic center.

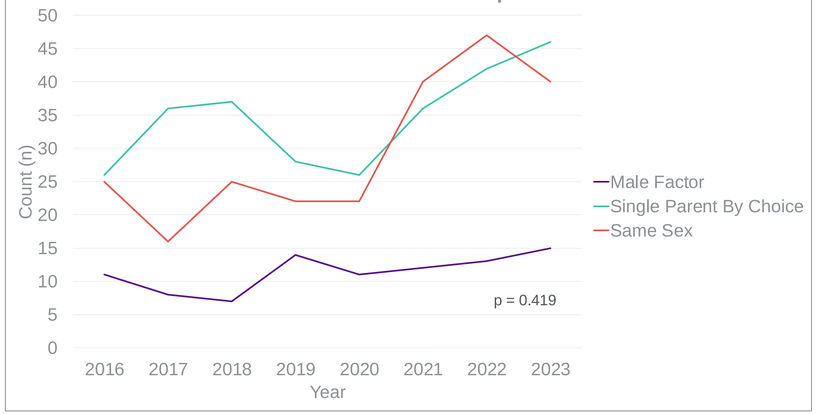
METHODS

- **Design:** Retrospective cohort study
- **Setting:** Large urban academic fertility center
- **Patients:** Patients who underwent FET cycles who utilized DS from 2016-2023
- **Variables:** Patient age at embryo creation and transfer, donor egg (DE) usage, DS type, and indication for DS
- **Primary Outcomes:** The primary outcome was FET outcome defined as a live birth or ongoing pregnancy (LB/ON), a biochemical or miscarriage (SAB), an ectopic (ECT), a termination (TAB), or a negative test (NEG)
- **Secondary Outcomes:** Secondary outcomes included how DS use changed over time, use of preimplantation genetic testing (PGT) and embryo sex selection
- **Analysis:** Chi-Square and Kruskal-Wallis tests and linear regression tests were used with p<0.05 considered significant

TABLE 1: Patient Variables

	Male Factor	Single Parenthood	Same Sex Relationship	p-value
Age at Freeze (median/IQR)	35 (31-38)	41.0 (39-42)	36.0 (33-38)	**< 0.001**
Age at Transfer	36 (32-38)	41.0 (39-43)	37.0 (34-39)	**< 0.001**
Donor oocytes	3.3%	15.2%	3.8%	**< 0.001**
Used Directed Sperm Donor	4.4%	2.9%	10.5%	**< 0.001**
Used ICSI	17.6%	17.0%	19.4%	> 0.05
Used PGD	87.9%	94.2%	86.5%	**< 0.05**
Used Natural FET	11.0%	20.7%	25.1%	**< 0.05**
Used Gender Selection	38.5%	27.8%	28.7%	> 0.05

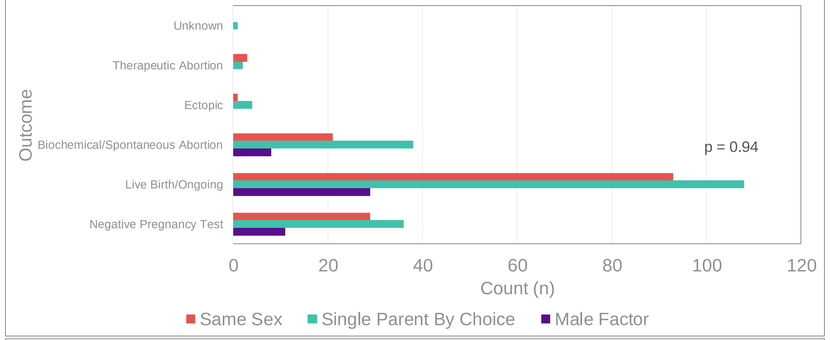
FIGURE 1: Indications for Donor Sperm Use Over Time



RESULTS

- Of 10,014 FETs during the study period, 428 patients used DS for 676 FET cycles (6.8%). Indications for DS were documented for 384 patients who underwent 605 FETs (277 (45.8%) SPBC, 91 (15.0%) MF, 237 (39.2%) SS).
- There were no differences in the proportion of MF, SPBC, or SS DS FETs over time (see Figure 1, p=0.42). The proportion of DS usage in all FETs was stable over time (5.1-7.6%, p=0.4).
- All groups used sex selection equally (see Table 1, p=0.14), with SPBC patients more likely than MF patients to choose a female embryo (80% SPBC vs. 52.9% MF, p<0.004). A sub-group analysis of all SS couples showed that the use of reciprocal (RECIP) in vitro fertilization (IVF) has no obvious trend over time (14.3-42.3%, p=0.54).
- There were no differences in treatment outcomes among the DS users (see Figure 2, p=0.94). Among SS patients, there were no differences in treatment outcomes when comparing RECIP IVF patients to autologous IVF pts (*p*=0.58).

FIGURE 2 : FET Outcomes



CONCLUSIONS

Increasing access to care has improved for all patients who need DS ART. Treatment outcomes after a DS FET are similar regardless of DS indication. Patients using DS can be reassured that live birth rates are comparable for DS users at our center to all published live birth rates from the Society for Assisted Reproductive Technology (SART) [1].

References
1. 2021 Assisted Reproductive Technology Fertility Clinic and National Summary Report. Centers for Disease Control and Prevention. US Dept of Health and Human Services; 2023. Accessed April 23, 2024. https://www.cdc.gov/art/reports/2021/index.html.