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LIVE BIRTH RATES IN SAME-SEX FEMALE COUPLES ARE SIMILAR BETWEEN CO-IN-VITRO FERTILIZATION (CO-IVF) AND AUTOLOGOUS IVF

Bethany Dubois, Tamar Alkon-Meadows, Dmitry Gounko, Alexandra Mills, Katrina S Nietsch, Isabelle C Band, Nicole Parkas, Joseph A. Lee, Stephanie Brownridge, Alan B. Copperman, Samantha L. Estevez

1. Reproductive Medicine Associates of New York, New York, NY
2. Icahn School of Medicine at Mount Sinai, New York, NY

OBJECTIVE:

Same-sex female couples (SSFC) pursuing family building via in-vitro fertilization (IVF) can select between autologous IVF, where a single partner provides oocytes and carries out gestation, or Co-IVF, where one partner donates an oocyte, and the other partner receives the embryo at transfer. Important factors for this decision include medical history of both partners, desire for shared biologic contribution, cost, and pregnancy success rates. This study aims to compare live birth rates in SSFC undergoing Co-IVF to autologous IVF cycles.

MATERIALS AND METHODS:

This retrospective cohort study, conducted at an academic fertility center, included patients without an infertility diagnosis undergoing single frozen embryo transfer (FET) cycles from 2010 to 2022. SSFC undergoing Co-IVF were compared to two control groups: 1) SSFC undergoing autologous IVF (SSFC-aIVF) and 2) Heterosexual couples (HSC) using IVF for preimplantation genetic testing of monogenic disorders (PGTM-aIVF). Control Group 2 was included to represent a large sample of IVF cycles in couples without suspected infertility. Subgroup analysis was conducted, analyzing only euploid single FET cycles with PGT for aneuploidy (PGTA). The primary outcome was live birth rate (LBR). Secondary outcomes were clinical pregnancy rate (CPR) and miscarriage rate. Demographics, cycle characteristics, and outcomes were analyzed via chi square and t tests. A generalized estimating equation (GEE) was used to calculate odds ratios for outcomes, adjusting for oocyte age and body mass index. P-values <0.05 were considered significant.

RESULTS:

This study evaluated 147 Co-IVF, 279 SSFC-aIVF, and 771 PGTM-aIVF FET cycles from 88, 167, and 369 couples respectively. Co-IVF patients used younger oocytes than SSFC-aIVF (35 vs 36

years, p=0.004) but were similar age at FET (p=0.12). Compared to PGTM-aIVF, Co-IVF patients used older oocytes (35 vs 32years, p<0.001) and were older at FET (36 vs 33 years, p<0.001).

CPR for Co-IVF cycles (65%) was similar to SSFC-aIVF (62%, p=0.5) and higher than PGTM-aIVF (60%, p=0.01). Miscarriage rate for Co-IVF cycles (19%) was higher than both comparators (SSFC-aIVF: 14%, p<0.001; PGTM-aIVF: 16%, p=0.01). LBR was similar among all groups (Co-IVF: 46%, SSFC-aIVF: 47%, PGTM-aIVF: 44%; p>0.05). Adjusted GEE model showed no change to odds of any outcome between groups.

59% of Co-IVF cycles and 88% of SSFC-aIVF utilized PGTA. Considering only euploid FET cycles (n=87 Co-IVF, n=245 SSFC-aIVF, n=771 PGTM-aIVF), Co-IVF had higher CPR (65%) than both comparators (both 60%, p=0.002). Co-IVF LBR (49%) was similar to SSFC-aIVF (47%, p=0.7) but higher than PGTM-aIVF (44%, p=0.001). Adjusted GEE model showed no change to odds of any outcome between groups.

CONCLUSIONS:

No difference was found in LBR or CPR between SSFC who underwent Co-IVF and autologous IVF cycles. SSFC can jointly contribute biologically to pregnancy via Co-IVF without compromising chance of live birth. Future work should evaluate larger and prospective cohorts.

IMPACT STATEMENT:

Clinicians can be confident in advising Co-IVF as a primary treatment option to SSFC who seek joint biological contribution to pregnancy and family building.

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