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AN ANALYSIS OF POOR PROGNOSIS PATIENTS AND LIVE BIRTH POTENTIAL AFTER FIRST EMBRYO TRANSFER WITH DONOR OOCYTE

Emily Clarke, Julia Thaler, Michelle J Bayefsky, Dmitry Gounko, Morgan Baird, Joseph Lee, Margaret Daneyko, Kimberley A. Thornton, Alan Copperman

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

OBJECTIVE:

Patients with diminished reproductive potential may attempt autologous in vitro fertilization (IVF) or choose to use donor oocytes. Whether clinicians should discourage poor prognosis patients from undergoing autologous IVF remains widely debated, even though live birth rate (LBR) exceeds 50%per embryo transfer (ET) with donor oocyte (1,2). Still, many patients decide to attempt IVF. Yet, it remains uncertain if multiple IVF attempts prior to subsequent ET(s) using donor oocyte results in a worse outcome. This study describes clinical outcomes in patients who undergo IVF prior to using donor oocyte compared to those who immediately use donor oocyte.

MATERIALS AND METHODS:

This study includes all patients who underwent ET with donor oocyte at a single center from January2012 to January 2024. Patients were grouped as follows: DONOR-1: patients whose first ET used donor oocyte; IVF-1: patients who attempted IVF without achieving live birth and subsequently underwent ET with donor oocyte. DONOR-1 patients were excluded if they had undergone treatment at another center. Primary outcome was LBR after the first ET with donor oocyte. Secondary outcomes were patient demographics at initial consult, IVF cycle count prior to first ET with donor oocyte, endometrial thickness at first ET with donor oocyte, proportion of patients who ultimately achieved live birth, and time from initial consult to live birth. Subgroup analysis was performed on IVF-1 patients who attempted >2 IVF cycles prior to their first ET with donor oocyte. Wilcoxon rank and chi-square tests were used for statistics with $p<0.05$ considered significant.

RESULTS:

157 DONOR-1 and 213 IVF-1 patients were included. Compared to IVF-1 patients, DONOR-1

patients were older (45.0±5.9 vs 41.7±3.3 years, p<0.01), had lower anti-Mullerian hormone (0.2±0.3vs 0.9±1.0 ng/mL, p<0.01) and lower antral follicle count (1.7±2.1 vs 6.5±3.9, p<0.01). IVF-1 patients attempted 2.1±1.3 retrieval cycles and 0.5±1.3 ETs prior to switching to donor oocyte. LBR after first ET with donor oocyte was similar among groups (DONOR-1 59.2% vs IVF-1 53.1%,p=0.24); endometrial thickness at ET was equivalent (DONOR-1 9.7±2.4 vs IVF-1 9.8±2.1mm,p=0.14). 80.3% of DONOR-1 and 81.7% of IVF-1 patients eventually achieved live birth (p=0.73).IVF-1 patients attempted 1.6±1.0 ETs with donor oocyte to achieve live birth, while DONOR-1 patients attempted 1.5±1.1 (p=0.17). Among IVF-1 patients who attempted >2 IVF cycles (n=66),LBR after first ET with donor oocyte was similar to DONOR-1 patients (51.5% vs 59.2%, p=0.29).DONOR-1 patients experienced significantly shorter time from initial consult to live birth compared to IVF-1 patients (309 vs 525 days, p<0.01).

CONCLUSIONS:

DONOR-1 and IVF-1 patients achieved similar LBR after undergoing ET with donor oocyte, albeit DONOR-1 patients experienced a live birth more rapidly.

IMPACT STATEMENT:

Patients who experience unsuccessful IVF cycles using autologous oocytes can be reassured that the chances of achieving a live birth in a subsequent ET with donor oocyte are comparable to patients who initially opted for ET with donor oocyte, even after attempting >2 IVF cycles.

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