TITLE: ANALYSIS OF FROZEN EMBRYO TRANSFER (FET) OUTCOMES IN PATIENTS WITH HISTORY OF BILATERAL SALPINGO-OOPHORECTOMY (BSO)

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BACKGROUND: As whole genome sequencing becomes more accessible and many patients discover genetic predispositions to cancer, younger women are pursuing fertility preservation in preparation for risk-reducing oophorectomy. While post-menopausal women with essentially hormonally inactive ovaries in situ can achieve successful pregnancies via IVF, data exploring FET outcomes in patients with surgically absent ovaries is lacking (Ameratunga et al., 2009). As the number of risk-reducing oophorectomies increases, more data on ART outcomes is needed to appropriately counsel patients facing the decision of tissue removal for cancer prophylaxis or active disease and the reproductive outcomes afterward (Smith et al., 2021).

OBJECTIVE: Our objective was to compare FET outcomes between individuals with surgically absent bilateral ovaries and age-matched controls with bilateral ovaries in situ, to better counsel patients considering prophylactic oophorectomy with fertility preservation about their postoperative fertility outcomes.

MATERIALS AND METHODS: This was a retrospective cohort study of all FET at a large, urban, academic fertility center between 1/2013-12/2023. All patients with bilateral absent ovaries who underwent either autologous FET and donor embryo transfer were included. Control group was comprised of patients with bilateral ovaries in situ undergoing FET in an age-matched 2:1 fashion. Cycles were excluded if ovaries were absent due to a congenital anomaly. Demographic and stimulation information including age, reason for BSO, day 2 estradiol and thickness of endometrial lining on day of scheduling was collected. The primary outcome was live birth rate. Secondary outcome was live birth rate. Statistical analysis utilized Mann-Whitney U, Fisher's Exact, and Pearson Chi-Square tests.

RESULTS: 25 FETs in patients with BSO were reviewed and compared to 50 controls with ovaries in situ. Day 2 estradiol level (median 29 pg/mL vs 36 pg/mL, p = 0.34) and day 2 endometrial lining (>7mm 4/25, 4.00% vs >7mm 8/38, 21.05%, p=0.08) was similar between groups. The most common reason for BSO was Tumor/Cancer (14/25 patients, 56%), followed by prophylaxis (5/25 patients, 20%), torsion (5/25 patients, 20%), and infection (1/25 patients, 4%). Primary outcome of FET treatment outcome in patients with BSO was as follows: clinical pregnancy 13/25 (52.00%), negative pregnancy test 7/25 (28.00%), biochemical pregnancy 3/25 (12.00%), cornual ectopic 1/25 (1.00%), unknown 1/25 (4.00%). There was no difference in FET outcomes in BSO vs control group (p=0.32). Of BSO patients with a clinical pregnancy, 12/13 patients had confirmed live birth (92.31%) and 1/13 had a first trimester spontaneous abortion (7.69%), similar to the control group outcomes (p=0.195).

CONCLUSIONS: Patients undergoing FET with absent bilateral ovaries had similar clinical pregnancy and live birth rates compared to aged-matched controls with both ovaries in situ. This is a crucial counseling point that can be utilized by the multidisciplinary care teams to facilitate shared decision making for patients with predispositions to cancer. This is reassuring when counseling high-risk patients regarding their future ART outcomes despite not having endogenous ovaries, though additional research is needed to further explore pregnancy outcomes and risks in this population.

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