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FERTILITY PRESERVATION IN BREAST CANCER PATIENTS: A LONGITUDINAL STUDY OF RETRIEVAL AND OOCYTE/EMBRYO UTILIZATION

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OBJECTIVE:

Breast cancer is the most commonly diagnosed malignancy for women living in the United States and more than 26,000 newly diagnosed patients per year are under the age of 45.¹ Given that most chemotherapeutic agents and hormonal therapies used for adjuvant treatment of breast cancer are gonadotoxic and/or teratogenic, fertility preservation is critical prior to initiating treatment. Increased awareness of the need to preserve fertility, timely referral to infertility specialists, and development of ovarian stimulation protocols that are safe in breast cancer patients have increased rates of fertility consultation and treatment among women diagnosed with breast cancer. The objective of this study is to describe the frequency with which breast cancer patients who consulted with fertility experts underwent retrieval procedures and also the rate of utilizing cryopreserved oocyte/embryos.

DESIGN:

Retrospective cohort study

MATERIALS AND METHODS:

Patients with breast cancer who were identified within the center's electronic medical between 2002-2019 were included in the study. Demographic information, cycle characteristics, use of preserved oocyte and embryos, pregnancy outcomes and length of follow-up were collected.

RESULTS:



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A total of 215 patients with a breast cancer diagnosis (196 invasive, 19 in situ) presented for consultation. The majority of the study population (78.6% [169/215]) saw a REI specialist prior to chemotherapy and/or radiation. Of patients who presented for a consultation, 44.2% (95/215) decided to proceed with an oocyte or embryo freezing cycle, and 2.8% (6/215) pursued oocyte donation. The average age of patients undergoing cryopreservation was 35.9 ± 5.6 (22-47). 50.5% (48/95) of patients underwent retrieval to freeze oocytes; 47.3% (45/95) underwent retrieval to freeze embryos; 2.1% (2/95) were cancelled prior to retrieval. 33.7% (32/95) of patients had their retrieval within 4 weeks of their initial consultation.

Of patients who underwent cryopreservation, 25.3% (24/95) returned to utilize their oocytes/embryos either at our center (n=12) or at an alternative center (n=12). Of patients undergoing a transfer at our center, 58.3% (7/12) achieved a pregnancy and 50% (6/12) achieved a live birth. From this cohort, there were 3 singleton and 3 twin deliveries. 12.5% (3/24) created embryos for future transfer into a gestational carrier. Mean follow up time was 4.8 ± 3.3 years, median was 4.5 years. Many patients (43.7% [31/71]) who have yet to return and use their oocytes/embryos underwent cryopreservation <3 years ago.

CONCLUSIONS:

With 5-year breast cancer survival rate at 90%¹, fertility preservation in patients of reproductive age is of paramount importance. Of 215 breast cancer patients who presented for discussion of fertility preservation, 95 underwent retrieval procedures and 24 have returned to utilize their oocytes/embryos. Further research will seek to identify individual patient's decision making relevant to fertility preservation and treatment with the goal of optimizing breast cancer patients' chances of achieving live birth.

References:

1. Siegel RL, Miller KD, Jemal A. Cancer Statistics, 2019. CA Cancer J Clin. 2019;69(1):7. Epub 2019 Jan 8.