Elective Oocyte Cryopreservation for Fertility Preservation: A National Perspective

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OBJECTIVE

To summarize the findings of a network of programs who offer elective oocyte cryopreservation. In addition, to determine whether baseline characteristics and outcome differ in women seeking elective fertility preservation through oocyte cryopreservation (OC) at four United States IVF centers.

DESIGN

Retrospective analysis of OC cases from four IVF centers: IVF New Jersey, Somerset, NJ; Texas Fertility Center (TFC), Austin, TX; Huntington Reproductive Center (HRC), Los Angeles, CA; and Reproductive Medicine Associates of New York (RMANY), New York, NY. Procedures were coordinated with Extend Fertility under Institutional Review Board approval.

MATERIALS AND METHODS

A total of 1907 women inquired about OC technology. One hundred and ninety-seven women completed an OC medical consult. After IRB-approved consent, 82 patients underwent controlled ovarian hyperstimulation (COH) for elective OC using gonadotropin releasing hormone (GnRH) antagonists or GnRH microflare protocol. Baseline screening included transvaginal ultrasound, cycle day 3 follicle stimulating hormone (FSH) and estradiol (E2) levels. Gonadotropins were adjusted based on follicular growth and E2 levels. Final oocyte maturation was achieved using human chorionic gonadotropin with retrieval 36h later. A slow freeze protocol including 1,2-propanediol and sucrose was used to freeze oocytes. Sites were compared by age, day 3 FSH and E2 levels, stimulation duration, total gonadotropin dose, peak E2 level, and number of oocytes.

	IVF NJ n=10	TFC n=11	HRC n=14	RMANY n=47	Overall
Age	37.0 (±3.0)	37.5 (±2.1)	37.4 (±2.5)	38.5 (±2.0)	**38 (±2.3)**
FSH (day 3)	7.2 (±3.6)	7.1 (±1.2)	7.0 (±1.9)	8.7 (±3.8)	**7.9 (±3.2)**
E2 (day 3)	33.9 (±9.5)	42.6 (±15.5)	40.0 (±17.9)	40.6 (±12.1)	**39.8 (±14.1)**
Days Stim	9.3 (±1.3)*	11.5 (±1.4)*	9.9 (±1.8)*	9.9 (±1.5)*	**10.05 (±1.6)**
Total GND dose	3652 (±1102)	3731 (±2010)	4441 (±1670)	4245 (±1010)	**4135 (±1324)**
Peak E2	2698 (±1188)	2379 (±743)	2323 (±1269)	1897 (±1172)	**2148 (±1157)**
# Ret oocytes	13.4 (±7.4)	15.8 (±4.4)	9.9 (±4.8)	12.3 (±7.5)	**12.7 (±6.8)**
# M II	11.7 (±6.8)	11.9 (±4.4)	9.0 (±4.8)	8.6 (±6.8)	**9.6 (±6.3)**

*P<0.0123

RESULTS

Mean age of inquiry was 35.2 (±5.4)years. Baseline screening results were similar for all four centers. No significant differences were encountered for age (mean 38.01 ±2.26), day three FSH levels (mean 8 ±3.3 IU/L) or day 3 E2 levels (39.8 ±14.1 pg/ml). The mean length of stimulation was 10 ±1.6 days. TFC patient's length of stimulation was significantly longer in comparison to the other centers (P<0.0123). A trend towards a lower peak E2 was noted in patients from RMANY (p=0.0745). The total dose of gonadotropins (mean 4135 ±1324 IU), number of retrieved oocytes (12.7 ±6.8) and MII oocytes (9.6 ±6.3) were similar among groups.

CONCLUSIONS

✓Ooctye cryopreservation is an increasing popular method for preservation of fertility.
✓Patients inquiring about OC were younger than those who eventually underwent the procedure.
✓Based on decades of experience with Assisted Reproductive Technologies, it is reasonable to extrapolate to egg freezing candidates that the age of the woman at the time of freezing will correlate with her ultimate likelihood of success
✓It is our recommendation that awareness of this emerging technology be promoted and that women be encouraged to consider this intervention to preserve fertility, before ovarian reserve is compromised.