Too cool to be late: the discrepancy between the required and obtained number of oocytes in a social fertility preservation program

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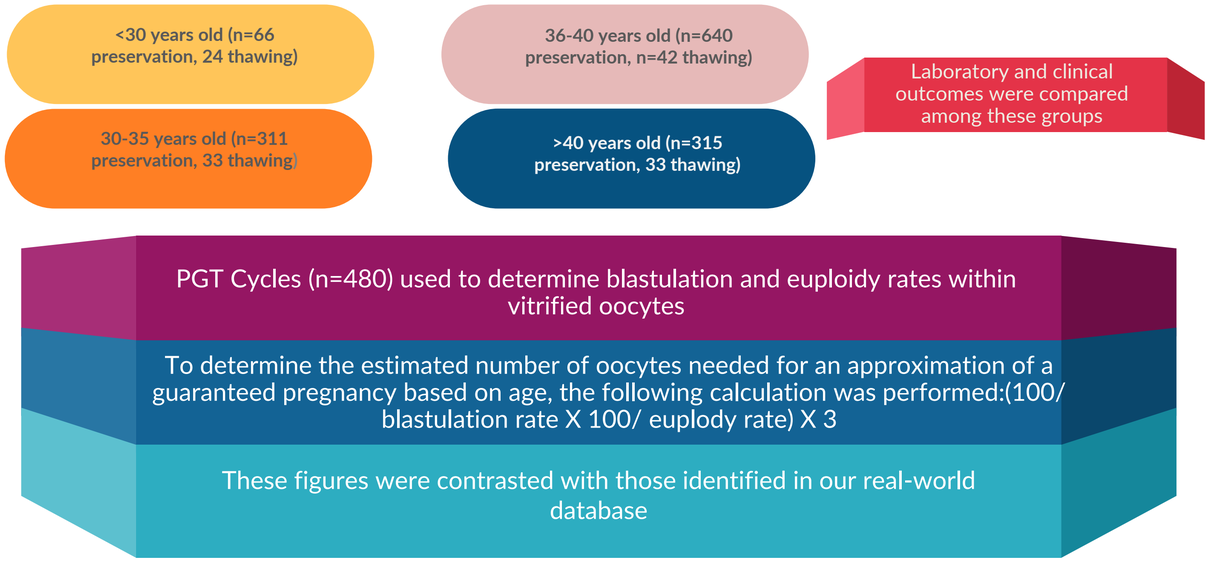
INTRODUCTION

Social fertility preservation empowers women to safeguard their fertility by anticipating age-related decline and diminished efficacy of fertility treatments in older ages. The effectiveness of oocyte vitrification programs, and consequently fertility preservation, depends on the patient's age. This study investigated the effectiveness of a fertility preservation program spanning a 10-year period, taking into account the age of patients at cryopreservation and the quantity of vitrified oocytes. Furthermore, a thorough analysis was undertaken to assess the percentage of patients who cryopreserve oocytes at an optimal age or store a sufficient number of oocytes to enhance the likelihood of achieving pregnancy..

METHODS

✓ Fertility preservation cycles (1,332) and oocyte thawing cycles (n=132)



RESULTS

Survival rates, laboratory results and clinical outcomes stratified by age

Female Age (years old)	< 30	30 to 35	36 to 40	> 40	P
n	24	33	42	33	
Survival rate (%)	90.7 ± 33.6[a]	81.4 ± 40.4[a,b]	83.4 ± 35.5 [a,b]	72.3 ± 34.9[b]	0.047
Fertilization rate (%)	78.9 ± 2.7	75.7 ± 3.20	73.2 ± 8.62	75.9 ± 2.8	0.802
Blastulation rate (%)	47.9 ± 14.2	42.9 ± 4.8	41.3 ± 4.54	39.5 ± 5.6	0.938
Pregnancy rate (%)	50.0 ± 17.7 [a,b]	56.0 ± 85.0[a]	46.3 ± 69.0[a,b]	21.4 ± 93.0 [b]	0.048
Implantation rate (%)	37.5 ± 14.5	40.8 ± 7.4	48.7 ± 6.4	23.4 ± 11.4	0.265

Blastulation rates, euploidy rates, the number of oocytes required to form an euploid blastocyst, and the number of oocytes required to form three euploid embryos, stratified by age.

Female Age (years old)	< 30	30 to 35	36 to 40	> 40
Blatulation rate	60.8	54.0	51.9	42.8
Oocytes required per 1 Blastocyst	1.64	1.83	1.92	2.33
Euploidy rate (%)	65.7	51.0	32.3	16.3
Blastocysts required per 1 euploid blastocyst	1.52	1.96	3.09	6.13
Oocytes required per 1 euploid blastocyst	2.49	3.58	7.52	14.3
Oocytes required for 3 euploid blastocysts	7.47	10.7	22.5	42.8

CONCLUSION

The outcomes of thawed oocytes from SFP programs diminish with age, and the number of cryopreserved oocytes is below the desirable quantity for a successful pregnancy.