

Oocyte Cryopreservation

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Frozen versus fresh oocytes: a cohort study of 19,868 metaphase II oocytes in the clinical outcomes

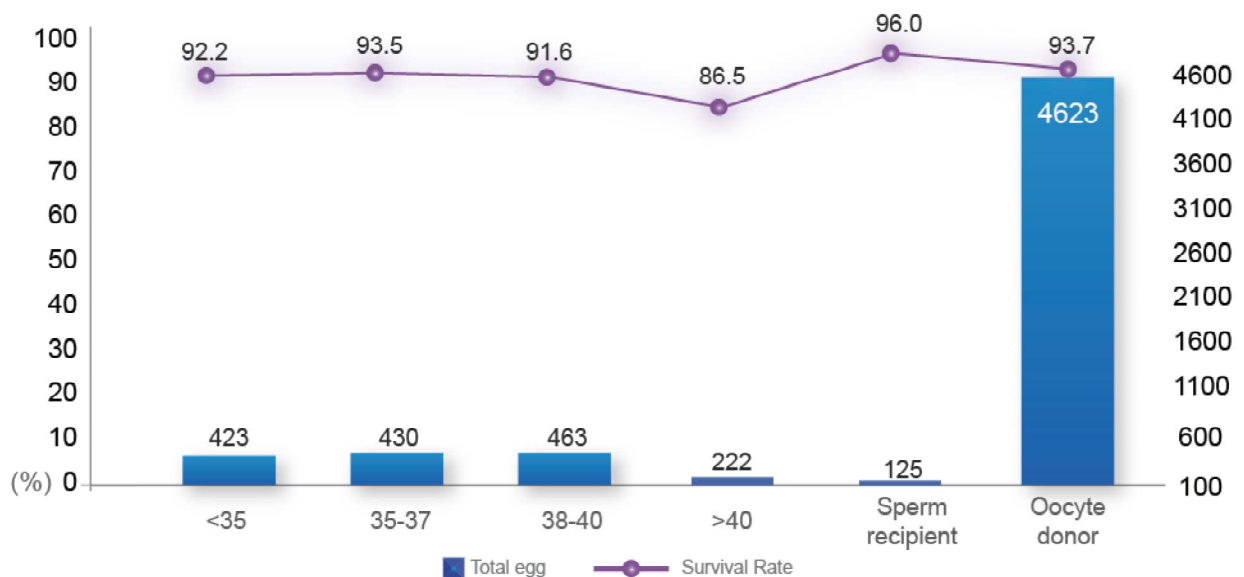
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Background and aims

Oocyte cryopreservation has been widely used to overcome legal and ethical issues associated with fertility preservation and oocyte donation programs. The objective of this study is to evaluate the developmental performance of oocyte cryopreservation and analyze the clinical outcomes of embryos derived from frozen and fresh oocytes in the donation IVF.

Methods

In this retrospective study, fertilization, embryo development and clinical outcomes from frozen and fresh oocytes was compared from January 2016 to June 2017. Vitrification was used in metaphase II (MII) oocytes and all vitrified-warmed oocytes were operated with intracytoplasmic sperm injection (ICSI). Fresh oocytes were inseminated by conventional IVF process and/or ICSI according to condition of patients in Stork fertility center.



Results

A total of 4277 oocytes were warmed and 93.7% survived. The fertilization rates were 77.0% and 78.7% ($p=0.47$), respectively, in frozen and fresh oocytes. Both good embryo formation rates and good blastocyst formation rates were significantly lower in frozen oocytes compared with fresh oocytes (56.0% vs. 61.6%, $p<0.001$ and 58.8% vs. 66.1%, $p<0.001$, respectively). As the results from PGS-single embryo transfer cycles, the pregnancy rates obtained from frozen oocytes and fresh oocytes were 70.8% and 66.7%, respectively ($p=0.33$). The implantation rates were 55.4% and 49.4% , respectively ($p=0.06$).

Conclusions

As the results, though the survival rate of the frozen oocytes is high, the following outcomes were significantly lower than the fresh oocytes. On the other hand, there were no significant differences observed in the outcomes of transfer embryos between frozen and fresh oocytes. Thus, high quality embryos derived from fresh or frozen oocytes could achieve comparable clinical outcomes.

