UNIVERSAL WARMING PROTOCOL" FOR A TRANSNATIONAL EGG DONATION PROGRAM WITH VITRIFIED OOCYTES

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OBJECTIVES

Transnational shipment of cryopreserved oocytes between centers is nowadays a common procedure as the use of frozen oocytes facilitates donor/recipient matching and can solve donor recruitment problems.

Oocytes are frozen using ready-to-use vitrification solutions of different commercial brands. In previous basic research studies, we demonstrated that it is possible to warm cryopreserved human oocytes, regardless of the vitrification kit used, with a single "universal warming protocol" based on subsequent steps with 1M and 0.5 M concentration of extracellular cryoprotectant (ECCP).

The aim of the present study is to verify for the first time the clinical efficacy of the "universal warming protocol" on shipped oocytes by testing two different brands of ready-to-use warming kits.

DESIGN

Retrospective observational study on a cohort of 101 patients enrolled in egg donation programs from 27/04/2017 to 26/03/2018.

Primary endpoint was the survival rate (number of oocytes surviving per number of oocytes warmed).

Secondary endpoints were fertilization rate (number of fertilized oocytes per number of injected oocytes), blastulation rate (number of blastocysts obtained per number of fertilized oocytes) and implantation rate (number of implanted embryos per number of transferred embryos).

METHODS

Donated oocytes were obtained and vitrified in a Spanish gamete cryobank, then shipped to the ART center in Italy where warming, ICSI procedures, and embryo transfer (ET) were performed. Number of oocytes thawed 820, ET performed 105.

All the oocytes were vitrified with Vitrification Kit (Kitazato, Japan) and warmed using two different kits: Kitazato Warming Kit and Vit Kit®-Thaw (Irvine, US). Both these kits involve subsequent steps with 1M and 0.5 M concentration of ECCP.

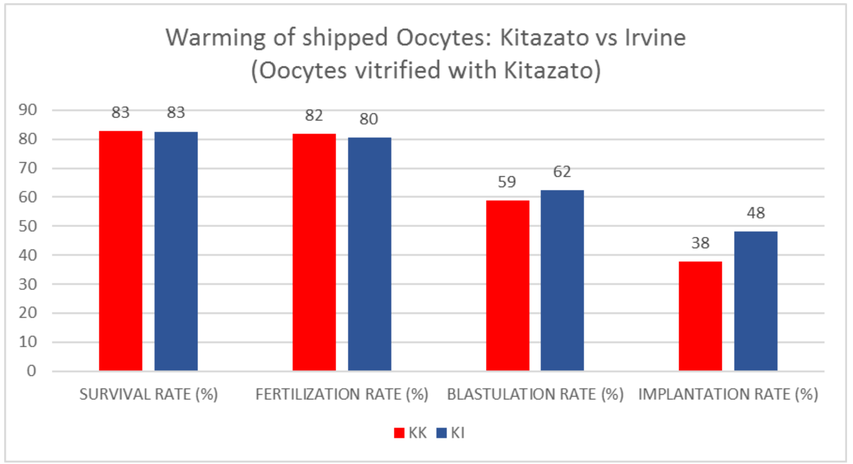
At warming the oocytes were assigned to 2 groups: group KK (Kitazato/Kitazato) - 233 oocytes, and group KI (Kitazato/Irvine) - 587 oocytes. Vitrification was performed with the carrier Cryotop (Kitazato); embryo culture was performed with Embryoscope+ (Vitrolife, Sweden). ET was performed at blastocyst stage.

RESULTS

Donors and recipients mean age, survival, fertilization, blastulation and implantation rates were statistically comparable between the study groups.

Survival rate was 82.8% (193/233) in group KK vs 82.6% (485/587) in group KI.

Fertilization rate was 81.9% (158/193) vs 80.4% (390/485), and blastulation rate 58.9% (93/158) vs 62.3% (243/390). Implantation rate was 37.7 % (20/53) in group KK vs 48.2% (55/114) in group KI.



CONCLUSIONS

The findings of this study indicate that it is possible to combine Vit Kit®-Thaw with Kitazato Vitrification kit and to obtain good clinical results with shipped oocytes. The use of a "universal warming protocol" with ready-to-use warming kits containing 1 and 0.5 M of ECCP simplifies oocyte exchange between IVF centers.

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