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Shipping cryopreserved embryos to long term storage: Are outcomes affected?

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Objective

Relocating cryopreserved embryos to a long term storage facility is an attractive option for the IVF laboratory. Due to the benefits, including minimizing the liability for abandoned embryos and reducing the need for numerous storage tanks, both Kaiser IVF centers in CA chose to transport embryos to offsite storage. An assessment of this policy was completed.

Design

Retrospective comparative study.

Methods

The charts for frozen embryo transfer (FET) cycles between October 2008 and September 2009 were reviewed for survival rate (SR), implantation rate (IR) and clinical pregnancy rate (CPR). Embryos were frozen at the blastocyst stage or the 2PN zygote stage using standard slow freezing techniques in vials or straws. The outcomes of (Group A) FET cycles using embryos that were shipped to a long term storage facility (Reprotech Ltd, Reno, NV) and then shipped back to our facility were compared to the outcomes of (Group B) FET cycles that used embryos that were never shipped. All blastocysts frozen were at least of grade 3BB or better on day 5 or 6. All zygotes were frozen with visible pronuclei. Embryos were transported in dry LN2 shipping vessels by either Reprotech staff or FedEx. A cryo guard vial was used to indicate whether a rise in temperature of the tank occurred during shipment.

Results

Group A represented 36 FET cycles. 72 embryos were thawed with a 85.8% SR, IR of 37.5% (27/72) and CPR of 52.8% (19/36). Group B comprised of 132 FET cycles resulting in a 83.1% SR, IR of 27.2 % (80/294) and CPR of 41.7 % (55/132). Clinical pregnancy is defined as the presence of a fetal sac by ultrasound at 6 weeks.

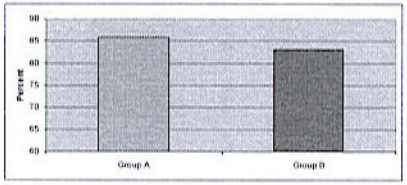

Fig. 1 Survival Rate

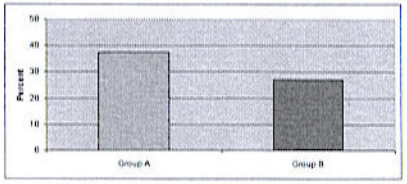

Fig. 2 Implantation Rate

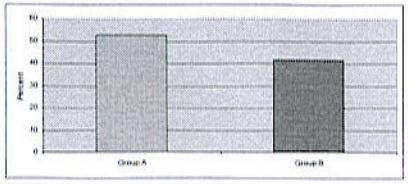

Fig. 3 Clinical Pregnancy Rate

Results Cont'd

Table 1	Group A	Group B
Number of FET cycles	36	132
Embryos transferred	72	294
Average percent cell Survival	85.8%	83.1%
Clinical pregnancy rate	52.8% (19/36)	41.7% (55/132)

Conclusion

Transferring frozen inventory to a long term storage facility is a successful strategy to minimize burdens associated with in house storage. Our results demonstrate that out sourcing frozen embryo storage does not adversely affect the ability to achieve normal survival, implantation and clinical pregnancy rates. Future studies to include vitrified specimens are needed as vitrification methods become standard of practice.