Use of refrozen donor sperm in IVF and ICSI

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Abstract

\textbf{Aim}: Frozen sperm has been used in infertility treatments for many decades, with numerous reports on its safety and efficacy. However, due to the limited number of donors available and the high associated costs, many patients have requested that the use of frozen sperm be minimised and that samples not required for insemination are refrozen. This study reviews the outcomes of cycles using refrozen donor sperm.

\textbf{Method}: Retrospective analysis of 893 cycles between 2008 and 2012 where donor sperm imported from the USA was used.

\textbf{Results}: In those cycles where donor sperm was used for the first attempt, 73.8\% of cycles were IVF (n=307) compared to 20.9\% undertaking ICSI (n=87). 5.3\% combined IVF and ICSI to achieve fertilisation (n=22). When donor sperm was used in subsequent cycles (n = 477), the use of ICSI increased to 42.4\%, as all refrozen sperm (n = 86) routinely used ICSI.

The pregnancy rates from the ICSI cycles were comparable between first and subsequent cycles (18.4\% vs 20.7\%), when no re-frozen sperm was used. However these outcomes were markedly lower than those using IVF on either the first or subsequent cycles (33.9\% and 26.9\% respectively). The pregnancy rate in cycles using refrozen sperm was 17.4\% (mean patient age 38.8yrs), which was comparable to the outcomes from the ICSI cycles using a whole vial but significantly lower than the IVF cycles.

\textbf{Conclusion}: Refreezing donor sperm is a viable option for patients wishing to maximize the use of a single vial of sperm. To date, ICSI has been used for most patients using refrozen sperm regardless of the post thaw survival. Future research will determine whether satisfactory fertilization and pregnancy rates using IVF can be obtained with refrozen sperm.