

Doctor calls for debate on using frozen versus fresh embryos for IVF procedures

4 September 2012, by Bob Yirka

(Medical Xpress)—New evidence from a study done by Aberdeen University showing that using frozen embryos implanted in the womb instead of those implanted fresh tends to reduce the risks for both mother and child, have led to calls for a debate on whether all embryos should be frozen before use in all IVF procedures. The study, conducted by examining the records of 13,000 pregnancies that came about as the result of IVF procedures, has been printed in the journal *Fertility and Sterility*, and is to be presented at an upcoming science festival by lead researcher Dr Abha Maheshwari

In examining the records, the team found that when frozen and thawed embryos were used in IVF procedures, the risk of bleeding over the course of the [pregnancy](#) was thirty percent lower than if fresh embryos were used; similarly, they found there was thirty to forty percent less chance of a low weight birth, twenty percent less likelihood of the baby being born early, and twenty percent less chance of the baby dying after birth. The research didn't turn up any definitive reasons for the differences in complication rates for frozen versus fresh implantation results but suggest that it might be either due to the fact that only stronger embryos survive the freezing process, or more likely the impact of the IVF process on the woman's body.

During an IVF procedure, a woman is given drugs to stimulate the [ovaries](#) into making ready several eggs at once for harvesting. It's been suggested that the drugs used cause an [overstimulation](#) of the [womb](#), leading to a less than perfect environment for the development of an embryo. Freezing the embryo and then waiting for several [menstrual cycles](#) to pass before thawing and implanting it in the uterus allows time for the drugs to pass out of the system, and may explain the results found in the study.

Dr Maheshwari is suggesting that a debate regarding the use of fresh versus frozen embryos

be undertaken by those in the research field to discuss whether it might not be a good idea for all women to use frozen embryos rather than fresh, heading forward, as the data seems to indicate doing so is a healthier approach.

Others are not yet convinced that the science is sound; some scientists maintain that the freezing process might be damaging embryos in ways that haven't yet been discovered, putting future children unnecessarily, at risk.

It's not likely the matter will be settled anytime soon, but this new study most certainly will incite much debate and likely new studies to see if it's possible to figure out for sure why frozen embryos seem to do better than fresh ones obtained and used during IVF procedures.

More information: Obstetric and perinatal outcomes in singleton pregnancies resulting from the transfer of frozen thawed versus fresh embryos generated through in vitro fertilization treatment: a systematic review and meta-analysis, *Fertility and Sterility*, Volume 98, Issue 2 , Pages 368-377.e9, August 2012. [www.fertstert.org/article/S001... \(12\)00573-0/abstract](http://www.fertstert.org/article/S001... (12)00573-0/abstract)

Abstract

Objective

To perform a systematic review and meta-analysis of obstetric and perinatal complications in singleton pregnancies after the transfer of frozen thawed and fresh embryos generated through IVF.

Design

Systematic review.

Setting

Observational studies, comparing obstetric and perinatal outcomes in singleton pregnancies subsequent to frozen thawed ET versus fresh embryo transfer, were included from Medline,

EMBASE, Cochrane Central Register of Clinical Trials, DARE, and CINAHL (1984–2012).

Patient(s)

Women undergoing IVF/intracytoplasmic sperm injection (ICSI).

Intervention(s)

Two independent reviewers extracted data and assessed the methodological quality of the relevant studies using critical appraisal skills program scoring. Risk ratios and risk differences were calculated in Rev Man 5.1. Subgroup analysis was performed on matched cohort studies.

Main Outcome Measure(s)

Antepartum hemorrhage, very preterm birth, preterm birth, small for gestational age, low birth weight, very low birth weight, cesarean section, congenital anomalies, perinatal mortality, and admission to neonatal intensive care unit.

Result(s)

Eleven studies met the inclusion criteria. Singleton pregnancies after the transfer of frozen thawed embryos were associated with better perinatal outcomes compared with those after fresh IVF embryos. The relative risks (RR) and 95% confidence intervals (CI) of antepartum hemorrhage (RR = 0.67, 95% CI 0.55–0.81), preterm birth (RR = 0.84, 95% CI 0.78–0.90), small for gestational age (RR = 0.45, 95% CI 0.30–0.66), low birth weight (RR = 0.69, 95% CI 0.62–0.76), and perinatal mortality (RR = 0.68, 95% CI 0.48–0.96) were lower in women who received frozen embryos.

Conclusion(s)

Although fresh ET is the norm in IVF, results of this systematic review of observational studies suggest that pregnancies arising from the transfer of frozen thawed IVF embryos seem to have better obstetric and perinatal outcomes.

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