

Children born from frozen embryos weigh more and do better than those born after fresh transfer

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Barcelona, Spain: Children born after a frozen, thawed embryo has been replaced in the womb have higher birth weight than those born where fresh embryos were used, Danish scientists reported to the 24th annual conference of the European Society of Human Reproduction and Embryology today.

The mothers had longer pregnancies, and the children did not show an increased risk of congenital malformations, said Dr. Anja Pinborg, from the Copenhagen University Hospital Rigshospitalet, Copenhagen, Denmark.

The scientists studied all the 1267 children born in Denmark between 1995 and 2006 after frozen embryo replacement (FER). The children were divided into three groups; those born after cryo-preserved IVF (878), those born after cryo-preserved ICSI (310), and 79 where the method of creation of the embryos was unknown. During the same period 17857 children were born after IVF/ICSI treatment using fresh embryos, and these children were used as controls. Data on the children's outcomes, including congenital malformations, were obtained from Danish national registries.

Freezing embryos allows couples to have several cycles of IVF/ICSI from the same egg collection. The embryos are subsequently thawed and replaced three to five days after ovulation in exactly the same way as fresh embryos are used. The technique helps to reduce the number of times ovaries are stimulated and eggs collected.

The scientists found similar rates of multiple pregnancies in the FER groups (ICSI 11.7% and IVF 14.2%), but in the fresh embryo groups the rates were considerably higher (ICSI 24.8% and IVF 27.3%). Maternal age was significantly higher

in the FER group. Pregnancy duration was significantly longer for these mothers, and birth weight was also higher – about 200 grams – in the FER group. The proportion of low birth weight FER children significantly lower, as was the percentage of pre-term births.

"Additionally there were significantly fewer children admitted to a neonatal intensive care unit in the FER group," said Dr. Pinborg, "although, when limited to single births, this difference disappeared. Most encouragingly, we found no increased risk of congenital malformations in the FER group; the rate in this group was 7.1% compared to 8.8% where fresh embryos had been used."

Concerns had previously been raised about the effect of freezing and thawing of embryos, but this study has laid them to rest, the scientists say. "Up till now the data has been extremely limited," said Dr. Pinborg. "There is only one other large birth register study – from Sweden – which shows similar results to ours. Our findings are of particular importance for Scandinavian countries, where single elective embryo transfer is regarded as the gold standard. This has meant that the use of FER has been rising steadily over the past few years. We wanted to be sure that the procedure had no deleterious effect on the offspring," said Dr. Pinborg.

"The findings are reassuring, although we still lack sub-analyses regarding malformations and neurological sequelae of the FER. But if our results continue to be positive, FER can be accepted as a completely safe procedure, which can be used even more frequently than it is currently," she said.

Source: European Society for Human Reproduction and Embryology

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