

# ICSI or IVF: Babies born from frozen embryos do just as well

June 29 2009

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Analysis of the longest running ICSI programme in the United States has found reassuring evidence that babies born from frozen embryos fertilised via ICSI (intracytoplasmic sperm injection) do just as well as those born from frozen embryos fertilised via standard IVF treatment.

The researchers also compared babies born as a result of cycles in which the women had additional hormone medication with babies born as a result of unmedicated, natural cycles, and, although they found a slightly higher rate of malformations in babies born from medicated cycles, the difference was small - 2.2% versus 0.4%.

Ms Queenie Neri, a research associate at Cornell University (New York, USA) and a member of the team headed by Professor Gianpiero Palermo who pioneered ICSI in 1992, told the 25th annual meeting of the European Society of Human Reproduction and Embryology in Amsterdam today (Monday) that she and her colleagues had looked at all births from frozen embryos, conceived via ICSI or IVF, between 1993 and 2007.

Ms Neri identified 720 IVF and 1231 ICSI frozen embryo transfers. The survival rate of the frozen embryos was 74% after IVF and 77.2% after ICSI. The clinical pregnancy rate was 42.8% after IVF and 39.4% after ICSI. These resulted in 84.1% IVF and 89.7% ICSI deliveries. There were 27.8% multiple IVF pregnancies and 21.1% multiple ICSI pregnancies. Outcomes at the time of birth for Apgar scores, gestational ages, birth weights and congenital malformations were similar for both

IVF and ICSI singleton babies.

When she grouped the babies according to whether they came from medicated or unmedicated cycles, she found that the clinical pregnancy rate was 42.1% and 39.4% respectively; delivery rates were 86.7% (with 28.7% multiple births) and 87.5% (19.2% multiple births) respectively. Gestational ages and birth weights were similar between the two groups, but the malformation rate was 2.2% from the medicated cycles and 0.4% from the natural cycles.

Ms Neri said: "Freezing embryos as part of fertility treatment has become a fundamental part of assisted reproduction technology. We found no differences in the ability of embryo generated by IVF or ICSI to implant, even after undergoing the stress of cryopreservation. We were unable to confirm a significant benefit of the unmedicated cycle on the neonatal outcome of the cryopreserved embryos; the difference in malformation rates was small.

"The original premise of the study was to identify a difference in neonatal outcome while in the presence or absence of infertility medication, with the assumption that the unmedicated cycles would generate better offspring outcomes. Interestingly, we did not see any clear difference in neonatal outcomes between the medicated and unmedicated groups. From our study, the combination of exposure to cryopreservation and medications or both did not significantly impair offspring outcome."

The malformations ranged from heart defects to defects caused by hereditary factors and sporadic genetic mutations or interactions. However, Ms Neri said: "They were within the spectrum of malformations observed in newborns in the general population."

As there was no statistical difference between the medicated and

unmedicated cycles, Ms Neri said that it was not possible to say that medicated cycles were associated with higher rates of malformations, or, if they were, what mechanism might be responsible.

"Our study reported none of the specific abnormalities linked to male factor infertility, medications or other environmental triggers such as extended in vitro culture, which have been reported by other studies," she said.

"When you think about it, the reproductive medical field has created a new sub-population. These children are now reaching puberty and their fertility status still remains to be assessed. Therefore, the continuous monitoring of children generated through artificial conception is of paramount importance," she concluded.

Source: European Society for Human Reproduction and Embryology  
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Citation: ICSI or IVF: Babies born from frozen embryos do just as well (2009, June 29) retrieved 20 March 2024 from <https://medicalxpress.com/news/2009-06-icsi-ivf-babies-born-frozen.html>

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