Frozen embryo transfer leads to larger, heavier babies

Two studies from France and Denmark, presented at the 27th Annual Meeting of the European Society of Human Reproduction and Embryology in Stockholm, show that children born after frozen embryo transfer are larger and heavier.

French scientists looked at neonatal outcome in terms of mode of delivery, gestational age, preterm birth rate (less than 37 weeks of gestation), mean child measurements, low birth weight (less than 2500 g) and perinatal mortality. Mean birth weight, mean height and head circumference were lower in the fresh embryo transfer population compared to babies from frozen embryos.

The mean birth weight of babies from frozen embryos was 102 g higher than those from fresh embryos. Low birth weight for children born to term (more than 37 weeks) was also significantly lower in babies from fresh embryos. Low birth weight:normal birth weight ratio was twice as high in babies from fresh embryos (3.6% *vs* 1.8%).

'Frozen embryo transfer did not seem to adversely affect neonatal outcome,' says Dr Sylvie Epelboin, from Bichat-Claude Bernard Hospital, Paris. 'We are not sure why the cryo babies are heavier and larger, but we think it may have something to do with the hormonal hyperstimulation during the fresh cycles.'

Dr Anja Pinborg and her group from the Rigshospital at Copenhagen University compared intrauterine parameters of 910 singletons born after frozen embryo transfer with 9603 babies from fresh embryo transfer and 4656 naturally conceived children.

The rate of large-for-gestational age babies was significantly different between the three groups with 16.9% for frozen embryo transfer, 10.3% for fresh transfer and 11.4% for naturally conceived babies. The same applied to the rate of babies with birth weight of 4,500g or more (5.6%, 2.8% and 3.4% respectively).

The risk for a baby to be too heavy for its gestational age at birth is increased 1.6-fold compared to children from fresh embryo transfer and 1.5-fold compared to naturally conceived children. This may be explained by 'epigenetic changes in the very early embryonic stages caused by freezing and thawing procedures,' said Dr Pinborg.

Biomarker for future atopy in asymptomatic children

Signs of atopy may be present long before symptoms begin, even in month-old babies, according to research from Denmark. The level of urinary eosinophil protein-X (u-EPX), a marker of inflammatory cells, in newborn babies was linked to higher risk of allergic sensitization, nasal eosinophilia and eczema at 6 years of age.

The researchers measured the levels of u-EPX and other inflammatory markers in 369 healthy month-old infants enrolled in the Copenhagen Prospective Study on Asthma in Childhood, a birth cohort study of symptom-free 1-month-old children born to asthmatic mothers.

The children were evaluated for allergic sensitization to 16 common inhalant and food allergens at 6 months, 18 months, 4 years and 6 years. Their blood eosinophil count was also taken at these points. Nasal eosinophilia was investigated by nasal scraping in the child's sixth year of life, and allergic rhinitis was diagnosed by 6 years of age based on interviews with parents and the child's history of symptoms. Asthma-like symptoms, and diagnoses of asthma and eczema were also noted.

In the first year of life, 4% of the children developed asthma-like symptoms and more than one-quarter (27%) were diagnosed with eczema. Another 17% developed asthma-like symptoms and 15% developed eczema by the age of 6 years.

Elevated u-EPX levels at 1 month were associated with a 49% increase in risk of allergic sensitization, an association that was statistically significant for both food and aeroallergens. High u-EPX levels were also associated with a three-fold risk of developing nasal eosinophilia, indicating allergic inflammation of the upper airways. Infants whose u-EPX level was in the top quartile had a 40% greater risk for developing eczema by the age of 6 years than those in the lower three quartiles.

'These data suggest that there is early life eosinophilic activation prior to symptom debut in children developing atopy-related conditions,' said principal investigator Dr Hans Bisgaard, professor of paediatrics at the University of Copenhagen.

Chawes BL, Bønnelykke K, Bisgaard H (2011) Elevated Eosinophil Protein X in Urine from Healthy Neonates Precedes Development of Atopy in the First 6 Years of Life. *Am J Respir Crit Care Med* Jun 16 [Epub ahead of print]

Outcomes strategy for asthma and COPD

The Department of Health has published *An Outcomes Strategy for Chronic Obstructive Pulmonary Disease (COPD) and Asthma in England*, which aims to transform the care, quality of life and health outcomes for millions of people with respiratory disease.

Boceprevir licensed for chronic hepatitis C genotype 1

Boceprevir (Victrelis) is now licensed to treat chronic hepatitis C genotype 1 infection, in combination with peginterferon alfa and ribavirin, in adult patients with compensated liver disease who are previously untreated or who have failed previous therapy. It interferes with viral replication by inhibiting NS3 serine protease.

Free paediatric e-learning resource

Spotting the Sick Child (www.spottingthesickchild.com) is now free to users working in the NHS including paediatricians, medical students and all those involved in emergency care. It is an interactive resource which enables users to follow a patient's journey, making decisions on treatment and assessing the response.