Scottish Government Health Directorates Chief Scientist Office

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STOPPIT BABY FOLLOW UP STUDY: WHAT EFFECT DOES PROPHYLACTIC PROGESTERONE IN TWIN PREGNANCY HAVE ON CHILDHOOD OUTCOME?

Researchers
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Aim
The aim of the study was to determine the potential adverse and beneficial effects of progesterone, given in twin pregnancy to reduce the risk of preterm delivery, on child health and behaviour at three to six years of age.

Project Outline/Methodology
This study evaluated the health and development of surviving twins born to mothers participating in the STOPPIT trial, a randomised, double-blind, placebo-controlled trial of progesterone for the prevention of preterm birth in twin pregnancy[1]. The STOPPIT trial demonstrated no difference in the primary outcome of death of the pregnancy or preterm delivery before 34 completed weeks gestation. No differences were identified when health outcomes of babies (from birth to six weeks old) in the progesterone and placebo groups were compared. In the original trial, follow up concluded on discharge of each baby from hospital.

We used record linkage of national health records to to gather routinely collected child health data and contact details for each family. We contacted parents of STOPPIT children and asked them to complete two questionnaires, intended to measure child health status and key developmental milestones.

Key Results
A total of 759 of the 781 twins submitted for record linkage were successfully linked to at least one record. Record linkage did not reveal any differences in incidence of death, inpatient or outpatient hospitalisation or congenital anomalies. Additionally, outcomes of the Child Health Surveillance Program *First Visit*, *Six to Eight Week Check*, and *Pre-school Check*, and the pre-school *Vision and Hearing Examination* were similar.

Of the 417 mothers (and 834 children) eligible for questionnaire survey, questionnaires could be sent to 369 (738). A response was received from 167 families (334 children) or 45% of all those sent a questionnaire. Some developmental delay was observed in 33% of children, with no significant difference between the progesterone and the placebo exposed groups. There was no difference in global health status with 89% rating their global health status as excellent and a further 8% rating it as good.

Conclusions
These results show that record linkage can be used economically and effectively as paediatric follow up in obstetric randomised clinical trials.

In a group of children at high risk for preterm delivery, in whom maternal progesterone does not affect the timing of delivery, we observed no direct harm or benefit from progesterone administration. Data from both record linkage and questionnaire follow up suggest that progesterone has no direct adverse or beneficial effect on child development.

What does this study add to the field?
To our knowledge, this is the only study to evaluate the effects of exposure to progesterone during pregnancy in twin children over the age of two years. We show that exposure to vaginal progesterone (in the absence of an effect on gestational age at delivery) is not associated with harm.

Implications for Practice or Policy
Trials of the effects of progesterone to improve pregnancy outcome (including miscarriage and preterm birth prevention) should continue.

Where to next?
We hope in the future to determine (by record linkage) the educational outcomes of the STOPPIT children at school.

Further details from
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1. Norman JE et al. Lancet. 2009;373(9680):2034-40.