

Neurophysiological development in twins at 48-60 months after the estimated date of delivery: Comparison of progesterone and placebo treatment during second and third trimester of pregnancy

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Objective

Progesterone has been introduced for prevention of preterm delivery in high-risk singleton pregnancies, while no effect has been found in twin pregnancies. We wished to examine the long-term effects of vaginal progesterone in a large twin population.

Methods

In the PREDICT study twin pregnant women were randomised to daily treatment with progesterone or placebo pessaries for prevention of preterm delivery. Primary outcome was delivery before 34 weeks' gestation. A secondary outcome was infant follow-up by Ages and Stages Questionnaire (ASQ) at 6 and 18 months after the estimated date of delivery (EDD). A new follow-up of the Danish twins has been performed using ASQ at 48-60 months. The correlation within pairs of twins was accounted for by the method of generalized estimating equation. Models were adjusted for time between EDD and the date on which the questionnaire was completed by the parents and for maternal educational score.

Results

Amongst the 531 Danish women, ASQs were sent out to 459 (86%) women, 227 progesterone-treated and 232 placebo-treated. A total of 437 questionnaires were returned from 220 (48%) women. Baseline characteristics for responders and non-responders were similar, except that responders were more likely to have returned questionnaires previously. Mean ASQ-score at 48-60 months was 269 for twins in the progesterone group and 262 for twins in the placebo group ($P=0.04$). Corresponding scores were: 217 and 217 at 6 months ($P=0.82$), and 183 and 189 at 18 months ($P=0.33$).

Conclusion

Progesterone treatment does not appear to have long-term harmful effects in children. These results will be followed-up by objective measures such as childhood admittances and diagnoses in the Danish twins from the PREDICT study.