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**Intervention Review**

**Anti-D administration in pregnancy for preventing Rhesus alloimmunisation**

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**ABSTRACT**

**Background**

During pregnancy, a Rhesus negative (Rh-negative) woman may develop antibodies when her fetus is Rhesus positive (Rh-positive). These antibodies may harm Rh-positive babies.

**Objectives**

To assess the effects of antenatal anti-D immunoglobulin on the incidence of Rhesus D alloimmunisation when given to Rh-negative women without anti-D antibodies.

**Search methods**

We searched the Cochrane Pregnancy and Childbirth Group's Trials Register (31 May 2015) and reference lists of retrieved studies.

**Selection criteria**

Randomised trials in Rh-negative women without anti-D antibodies given anti-D after 28 weeks of pregnancy, compared with no treatment, placebo or a different regimen of anti-D.

**Data collection and analysis**

Two review authors independently assessed trials for inclusion and risk of bias, extracted data and checked them for accuracy.

**Main results**

We included two trials involving over 4500 women, comparing anti-D prophylaxis with no anti-D during pregnancy in this review. Overall, the trials were judged to be at moderate to high risk of bias. The quality of the evidence for pre-specified outcomes was also assessed using the GRADE (Grades of Recommendation, Assessment, Development and Evaluation) approach.

In regards to primary review outcomes, there did not appear to be a clear difference in the risks of immunisation when women who received anti-D at 28 and 34 weeks' gestation were compared with women who were not given antenatal anti-D: risk ratio (RR) for
The incidence of Rhesus D alloimmunisation during pregnancy was 0.42 (95% confidence interval (CI) 0.15 to 1.17, two trials, 3902 women; GRADE: low quality evidence); at birth of a Rh-positive infant the RR was 0.42 (95% CI 0.15 to 1.17, two trials, 2297 women); and within 12 months after birth of a Rh-positive infant the average RR was 0.39 (95% CI 0.10 to 1.62, two trials, 2048 women; Tau²: 0.47; I²: 39%; GRADE: low quality evidence). Neither of the trials reported on incidence of Rhesus D alloimmunisation in subsequent pregnancies.

Considering secondary outcomes, in one trial, women receiving anti-D during pregnancy were shown to be less likely to register a positive Kleihauer test (which detects fetal cells in maternal blood) in pregnancy (at 32 to 25 weeks) (RR 0.60, 95% CI 0.41 to 0.88; 1884 women; GRADE: low quality evidence) and at the birth of a Rh-positive infant (RR 0.60, 95% CI 0.46 to 0.79; 1189 women; GRADE: low quality evidence). No clear differences were seen for neonatal jaundice (RR 0.26, 95% CI 0.03 to 2.30; 1882 infants; GRADE: very low quality evidence). Neither of the trials reported on adverse effects associated with anti-D treatment.

Authors’ conclusions

Existing studies do not provide conclusive evidence that the use of anti-D during pregnancy benefits either mother or baby in terms of incidence of Rhesus D alloimmunisation during the pregnancy or postpartum, or the incidence of neonatal morbidity (jaundice) (low to very low quality evidence). However women receiving anti-D may be less likely to register a positive Kleihauer test in pregnancy and at the birth of a Rh-positive infant (low quality evidence). Fewer women who receive anti-D during pregnancy may have Rhesus D antibodies in a subsequent pregnancy, with benefits for the baby, however this needs to be tested in studies of robust design.

Plain Language Summary

Anti-D administration in pregnancy for preventing Rhesus alloimmunisation

Women whose blood group is Rh-negative sometimes form Rh-antibodies when carrying a Rh-positive baby, in response to the baby’s different red blood cell make-up. This sensitisation is more likely to happen during birth, but occasionally occurs in late pregnancy. These antibodies can cause anaemia, and sometimes death, for a Rh-positive baby in a subsequent pregnancy. Giving the mother anti-D after the first birth is known to reduce this problem. This review assessed two trials with moderate to high risk of bias and found that giving anti-D during pregnancy may help as well, although more research is required to confirm these possible benefits and identify any possible harms.