Anti-D administration after childbirth for preventing Rhesus alloimmunisation

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With the advent of Rhesus immunoglobulin, severe Rhesus D alloimmunization is rarely seen today. However, Rhesus D is not always easily available in all settings, and therefore it is important to know the minimum effective dose in order to conserve supplies. This systematic review aimed to assess the effects of administration of anti-D to Rhesus negative women, with no anti-D antibodies, who had given birth to a Rhesus positive infant. It also sought to determine the minimum effective dose. Six eligible trials (10 000) that had compared postpartum anti-D prophylaxis with no treatment or placebo were included. Anti-D, given within 72 hours after childbirth, reduced the risk of Rhesus D alloimmunization in Rhesus negative women who have given birth to a Rhesus positive infant. Higher doses (up to 200 µg) were more effective than lower doses (up to 50 µg), but the evidence on the minimum effective dose was limited.

Cochrane review

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Abstract

The development of Rhesus immunisation and its prophylactic use since the 1970s has meant that severe Rhesus D (RhD) alloimmunisation is now rarely seen.

The objective of this systematic review was to assess the effects of giving anti-D to Rhesus negative women, with no anti-D antibodies, who had given birth to a Rhesus positive infant.

We searched the Cochrane Pregnancy and Childbirth Group's Trials Register (March 2010) and reference lists of relevant articles.

Randomised trials in Rhesus negative women without antibodies who were given anti-D immunoglobulin postpartum compared with no treatment or placebo.

Data collection and analysis

Assessments of inclusion criteria, trial quality and data extraction were done by each author independently. Initial analyses included all trials. Other analyses assessed the effect of trial quality, ABO compatibility and dose.
Main results

Six eligible trials compared postpartum anti-D prophylaxis with no treatment or placebo. The trials involved over 10,000 women, but trial quality varied. Anti-D lowered the incidence of RhD alloimmunisation six months after birth (risk ratio (RR) 0.04, 95% confidence interval (CI) 0.02 to 0.06), and in a subsequent pregnancy (RR 0.12, 95% CI 0.07 to 0.23). These benefits were seen regardless of the ABO status of the mother and baby, when anti-D was given within 72 hours of birth. Higher doses (up to 200 micrograms) were more effective than lower doses (up to 50 micrograms) in preventing RhD alloimmunisation in a subsequent pregnancy.

Authors' conclusions

Anti-D, given within 72 hours after childbirth, reduces the risk of RhD alloimmunisation in Rhesus negative women who have given birth to a Rhesus positive infant. However the evidence on the optimal dose is limited.

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