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MEDIA RELEASE

RHESUS D TWO-DOSE REGIMEN SUPERIOR TO SINGLE DOSE

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THE current Australian recommendation of two-dose antenatal anti-D prophylaxis has been shown to provide greater protection than the single dose recommended by some other countries, but compliance with treatment could be improved, according to the authors of research published online today by the *Medical Journal of Australia*.

Rhesus D (Rh(D)) isoimmunisation occurs when an Rh(D)-negative mother forms Rh(D)-immunoglobulin antibodies (anti-D) in response to exposure to Rh(D)-positive fetal red blood cells; these antibodies can cross the placenta during a subsequent pregnancy with an Rh(D)-positive fetus and initiate immune-mediated haemolysis (rupturing of red blood cells).

Routine antenatal anti-D prophylaxis (RAADP) reduces the risk of Rh(D) sensitisation of pregnant women, but until now it has been unclear whether the two-dose regimen recommended in Australia was superior to the single-dose regimen.

Dr Scott White, a consultant obstetrician at the King Edward Memorial Hospital in Perth, and a senior lecturer at the University of WA, and colleagues administered either one 1500 IU anti-D dose at 28 weeks of pregnancy (single dose regimen); or two doses of 625 IU each at 28 and 34 weeks of pregnancy (two-dose regimen) to 277 women who attended King Edward for antenatal care and were at least 18 years of age, less than 30 weeks pregnant and yet to receive RAADP, Rh(D)-negative (negative antibody screen), and intending to deliver their baby at the hospital.

They found that circulating anti-D was detectable at delivery in a greater proportion of women in the two-dose group (111 of 129, 86%) than in the single dose group (70 of 125, 56%). Compliance (receiving treatment on schedule) was similar in the single (86 of 138, 61%) and two-dose groups (70 of 139, 50%).

“Circulating anti-D levels were too low for detection at delivery in significantly more women who received RAADP as a single dose rather than in women who received the standard two doses,” White and colleagues wrote.

“Undetectably low levels leave women vulnerable to sensitisation in the event of an asymptomatic feto-maternal haemorrhage of 0.6 mL, which occur in 1% of pregnant women during their third trimester. Although the two-dose RAADP regimen, standard in Australia, thus seems superior to a single dose approach, the absolute risk of sensitisation is likely to be small.

“The number needed to treat with two-dose RAADP to prevent one case of undetectable anti-D at birth is 3.1 based on the observed absolute risk reduction of 32%. However, only 1% of women with undetectable anti-D levels at delivery are likely to be sensitised, so that one case of sensitisation could be prevented for about every 300 women by using two-dose rather than single dose RAADP.”

Further strategies for improving compliance were needed, the authors wrote.

“Compliance with the allocated RAADP regimen was relatively low in both groups … indicating that systematic improvements are required to ensure that RAADP is administered as recommended.

“Our trial provides indirect evidence for greater protection against Rh(D) sensitisation by the RAADP regimen recommended by Australian guidelines than by the single dose regimen used in some other countries. Systematic improvements that facilitate improved compliance with the current recommendations are needed to minimise the risk of isoimmunisation in Rh(D)-negative women,” White and colleagues concluded.

Please remember to credit *The MJA*.

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