

WHAT IS RH (D) IMMUNOGLOBULIN USED FOR?

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What is Rhesus or Rh?

Rh refers to the Rhesus antigen system. Antigens are protein or sugar variants which our immune system can recognise. Rh antigens are found on proteins on our red cell membranes.

What is Rh Negative?

There are several different Rh antigens. The most important is Rh (D). Your red cells either have Rh (D), which is called 'positive' or do not have Rh (D), which is called 'negative'. Rh negative is more correctly known as Rh (D) negative.

Why is the Rh status important?

If you are Rh (D) negative, your immune system may produce antibodies to attack Rh (D) after you are exposed to Rh (D). You can either be exposed to Rh (D) by transfusion or pregnancy. If a fetus (developing baby) is Rh (D) positive and the mother is Rh (D) negative, the mother may make antibodies to attack the baby's red cells. These antibodies can destroy the fetal red cells leading to anaemia in the fetus. This is called Haemolytic Disease of the Newborn (HDN).

Why does HDN occur?

Rh (D) antibodies will only form after previous exposure to Rh (D). A first pregnancy with an Rh (D) positive fetus and Rh (D) negative mother may act as this first exposure. In subsequent pregnancies the mother's immune system may produce high levels of antibodies which then cross the placenta into the fetus and destroy the fetal red cells.

How severe is HDN?

Anaemia in the fetus will occur. Severe anaemia is called 'hydrops fetalis', which may be fatal. Red cell breakdown also releases waste chemicals such as bilirubin. High levels of bilirubin causes a yellow skin colour called jaundice. Severe jaundice can affect brain and nerve development. Prevention of HDN is the key.

How can HDN be prevented?

HDN can be prevented by reducing the mother's chances of forming antibodies. Anti-D (Rh (D) immunoglobulin) is given by intramuscular injection to an Rh (D) negative pregnant woman and will destroy any fetal red cells in the mother before the mother's immune system can make its own antibodies. The Australian guidelines (NHMRC guidelines) recommend that



Anti-D should be given to all Rh (D) negative pregnant women who don't have the antibody at 28 weeks and 34 weeks of their pregnancy and after birth of an Rh (D) positive baby. Additional doses should be given after any fetal blood loss (eg. amniocentesis). We also try to prevent Rh (D) negative (or Rh (D) unknown) women of child bearing age from receiving Rh (D) positive blood.

Where does Anti-D (Rh (D) immunoglobulin) come from?

Anti-D can only be made from the plasma of a select group of donors who have Rh (D) negative blood as well as the anti-D antibody. The Blood Service has a special Anti-D program to help ensure we have sufficient Anti-D.

BLOOD FACT

Karl Landsteiner and Alexander Wiener named the Rhesus antigens after the breed of monkeys they were using for research into blood types.