FACT SHEET

The Importance Of Rh(D) Immunoglobulin For Rh(D) Negative Women During Pregnancy

Australian Red Cross BLOOD SERVICE

- A baby's blood type is jointly inherited from its mother and father. For this reason, a mother and her baby may have different blood types.

- Usually, this is not a problem. When, however, a mother's blood type is Rh (D) negative and the baby is Rh (D) positive, serious complications can occur with current and future pregnancies.

- Rh (D) immunoglobulin, a special antibody administered by injection, can avoid this potential harm.

What is the Rh factor?

- The Rh (Rhesus) factor is the name given to a blood group protein, Rh(D), which is attached to red blood cells. Some people have this protein on their red blood cells and others do not.

- On average, of every 100 people,
  - 83 will have the Rh factor; their blood type is called 'Rh(D) positive'
  - 17 will not have the Rh factor; their blood type is called 'Rh(D) negative'

  Note: The percentage of Rh negative women may vary across ethnic groups

How can the Rh factor affect current and future pregnancies?

- During pregnancy, a small amount of fetal red blood cells can cross the placenta into the maternal bloodstream.

- If the maternal blood type is Rh (D) negative, and the fetal blood type is Rh (D) positive, the mother's immune system can react by producing antibodies to the fetal red blood cells.

- In this situation, antibodies may cross the placenta to the fetus and destroy the fetal red blood cells.

- If these antibodies develop, they will not normally affect the first pregnancy. The immune system, however, has a good memory, and can rapidly produce high levels of these antibodies if there is contact with Rh(D) positive blood in a future pregnancy.

- This may lead to serious complications such as severe anaemia, brain damage and even death of the baby in some cases. This condition is known as Haemolytic Disease of the Newborn (HDN).

- Due to the potential serious effects of HDN, prevention of the problem is the key.

- The Rh (D) immunoglobulin injection is given before the mother's immune system has the chance to make its own antibodies against the fetal Rh (D) positive blood, which could then cause harm to a future pregnancy.

Prevention of Haemolytic Disease of the New Born (HDN)

- During pregnancy, there are times when there is an increased risk of the fetal blood crossing the placenta into the maternal bloodstream. Some examples include when tests such as amniocentesis are performed, if a miscarriage occurs or if the mother is involved in an accident with a major blow to her abdomen.

- At such times it is necessary to give all Rh (D) negative mothers an injection of Rh (D) immunoglobulin.

- It is also known, however, that even in a normal pregnancy, blood from the fetus can cross the placenta. Because of this, a small number of Rh (D) negative mothers will still develop antibodies to the fetal Rh (D) positive red blood cells even though they may receive an injection of Rh (D) immunoglobulin after delivery.

- To further reduce the chance of Haemolytic Disease of the New Born (HDN) caused by Rh (D) antibodies it is now recommended that all Rh (D) negative women receive Rh (D) immunoglobulin injections at 28 and 34 weeks gestation (antenatal prophylaxis) as well as at delivery of an Rh positive baby.

- It is also recommended that Rh (D) immunoglobulin injections be given following events such as miscarriage, termination of pregnancy, amniocentesis or abdominal trauma considered sufficient to cause the crossing of fetal blood into the maternal bloodstream.

- Research shows that this will reduce the chance of Haemolytic Disease of the Newborn (HDN) in future pregnancies.

Where does the Rh (D) immunoglobulin come from?

- Injections of Rh (D) immunoglobulin are made from the plasma (the liquid part of blood) of carefully selected voluntary donors.

- In 1968, Australia became the first country in the world to make enough Rh (D) immunoglobulin to meet the country's needs.

- The Australian Red Cross Blood Service has a special blood donor program aimed at maintaining a sufficient Australian supply of Rh (D) immunoglobulin. This supply has enabled healthcare professionals to reduce the risk of Haemolytic Disease of the Newborn (HDN) in Rh (D) negative women by routinely giving Rh (D) immunoglobulin injections at 28 and 34 weeks gestation as well as after any event where there is an increased risk of fetal blood crossing the placenta and after the delivery of Rh positive babies.

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