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Haemolytic Disease of the fetus and Newborn (HDFN) (Rhesus Disease)



What are blood groups?

Red blood cells are the most common cells in your blood stream. They carry the oxygen you breathe around your body. Your red cells have natural chemicals on the surface which make up your blood groups. These blood groups are inherited from your parents. The four main blood groups are O, A, B and AB. You also have another blood group called D (also called rhesus).

So, for example, you could be Group A, D positive, or Group A, D negative. In addition to ABO and D groups everyone has other, minor blood groups.

What are red cell antibodies?

Antibodies are your body's natural defence against anything which is different from yourself. For example: a virus, vaccine or a different blood group. They are part of your immune system and protect your body against harmful invasions like infections. You may form antibodies if blood cells with a different blood group from your own enter your blood stream. This can happen because of a blood transfusion or during pregnancy.

How are these antibodies made during pregnancy?

A few of your baby's blood cells may cross through the placenta into your blood. This usually happens when the baby is born. If your baby's blood group is different from your own, your immune system may produce antibodies. This is rare.

How could red cell antibodies affect my baby?

These antibodies can move across your placenta and into the baby's blood. As most cases of baby's blood crossing the placenta occur during birth, these antibodies will be made after birth, and may affect your next baby if it also has a blood group different to you. Rarely the antibodies are made for the first time during the pregnancy which can then cause problems for that baby.

Certain antibodies can damage your baby's red cells. Your baby could become anaemic before birth and develop jaundice after birth. This condition is called haemolytic disease of the newborn.

The antibodies remain in your blood forever and they may also damage the red cells of a second baby, if he or she has the same blood group as the first

Which antibodies cause most problems?

The anti-D antibody is the most likely to cause problems. It can cause rhesus disease in your baby. Other weaker blood group antibodies, Anti-c, anti-K (Kell), anti-E, and others can also cause haemolytic disease of the newborn.

What will happen if I have red cell antibodies that could affect my baby?

You will have regular blood tests to measure the antibody levels. If the levels become significant then your baby will also be monitored by ultrasound scans to make sure she/he is not becoming anaemic. In the rare event of a baby becoming anaemic before birth, intrauterine blood transfusions can be done. If the level of antibodies is high without signs of anaemia it may be decided to deliver the baby 1-2 weeks early to prevent more antibodies crossing the placenta. We aim for these babies to have a normal birth.

What will happen after my baby is born?

When your baby is born, blood will be taken from the placenta to see if the antibodies have crossed into your baby, and to make sure the blood count is normal. If there are no antibodies then no further tests or treatment for your baby is needed. If there are antibodies in your baby then the jaundice level of your baby will be monitored closely until the baby specialist is sure that it is not going to get too high. There are no long term consequences for your baby from the antibodies which will wear out within a few weeks.