The Rosie Hospital
Patient Information

Guidance on the use of routine antenatal anti-D prophylaxis for RhD-negative women

Document history
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We are now a smoke-free site: smoking will not be allowed anywhere on the hospital site.

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What is NICE Guidance?
The National Institute for Health and Care Excellence (NICE) is a part of the NHS. It produces guidance for both the NHS and patients on medicines, medical equipment, diagnostic tests and clinical and surgical procedures including where they should be used.

What does RhD negative mean?
The Rhesus factor (also known as the D antigen) is found on red blood cells. Just as every human being is unique, so are the characteristics of your blood. People can belong to one of four blood groups, A, B, AB & O. They are also either Rhesus positive (RhD-positive) or Rhesus negative (RhD-negative). In the UK around 83% of people are RhD-positive and 17% RhD-negative. People who are RhD-negative do not have the Rhesus factor on their blood cells. Whether a person is RhD-positive or RhD-negative is determined by their genes, that is, it is inherited from their parents.

Why does Rhesus status matter?
Rhesus status matters if you are RhD-negative and become pregnant with a baby who is RhD-positive. This can only happen if your baby’s father is RhD-positive, but not all children who have a RhD-positive father will be RhD-positive, because the father may have both RhD-positive and RhD-negative genes.

During pregnancy it is possible that your baby’s blood cells could get into your blood in an event known as a feto-maternal haemorrhage (FMH). Should blood cells from a RhD-positive baby get into your blood, you will react to the D antigen in your baby’s blood as though it is a foreign substance and antibodies will be produced against it.

References -
Royal College of Obstetricians and Gynaecologists
Use of Anti-D immunoglobin for RhD prophylaxis (22) - revised May 2002
NICE Guidance on the use of routine antenatal anti-D prophylaxis for RhD-negative women
Rosie Hospital Guidelines, Policies and Procedures
Blood samples are also taken from you, usually within two hours of the birth, to identify the amount of foetal blood cells that may have crossed into your blood (FMH). If the results of this blood test show that the FMH is larger than the standard postnatal prophylaxis can deal with, then your obstetric team will be contacted and additional anti-D will be prescribed and administered. A follow up blood sample should be taken after 72 hours to ensure that no foetal cells remain in your circulation and that additional anti-D is not needed.

Testing for FMH is carried out in the hospital laboratory every day. In view of the fact that all RhD-negative mothers with a RhD-positive baby will be given routine anti-D prophylaxis there should be no delay in discharge home.

Should the FMH be such that additional injection/s are required, you will be contacted by the ward area you were discharged from. You would then be required to visit the hospital for the additional anti-D to be given and there will be blood tests to monitor the antibody levels.

The most common time for your baby’s blood cells to get into your blood is at the time of birth. However it can happen at other times during the course of the pregnancy, for example during a miscarriage or abortion, following a procedure such as amniocentesis, chorionic villus sampling, or external cephalic version (this involves turning the baby head down). It can also occur following an episode of vaginal bleeding or trauma. An event that could cause you to produce antibodies against the D antigen is called a ‘potentially sensitising event’.

Once sensitisation has occurred it is irreversible. The first ever sensitising event is not usually dangerous at the time but can cause problems either later during the pregnancy and in future pregnancies because the antibodies now present in your blood can cross the placenta and attack the blood cells of a RhD-positive baby. This can cause babies to have a condition called haemolytic disease of the newborn (HDN), also known as ‘Rhesus disease’. HDN can be very mild and only detectable on laboratory tests. It can however be more serious and cause babies to be stillborn, severely disabled or to die after birth as a result of anaemia (lack of iron in the blood) and jaundice.

Nowadays HDN is uncommon because the condition can be easily prevented.
What is anti-D prophylaxis?

Prophylaxis is the word given to a medicine that is used to prevent something happening. Anti-D prophylaxis means giving special antibodies that recognise the D antigen to prevent you producing your own antibodies against RhD-positive blood cells and in turn preventing the development of HDN. These special antibodies are taken from part of the blood called plasma that is collected from donors. The production of these anti-D antibodies is very strictly controlled to ensure that the chance of a known virus being passed from the donor to the person receiving them is very low.

Routine antenatal anti-D prophylaxis (RAADP)

Your blood group and Rhesus factor are identified at the beginning of your pregnancy from a sample taken with the routine booking bloods. If you are found to be RhD-negative you will be sent a letter informing you of the result.

At the Rosie hospital RAADP is given to all pregnant woman who are RhD-negative as a once only single injection of 1500iu of Rhophylac 300® administered intramuscularly into the upper arm. This must be between 28-30 weeks of pregnancy.

If you are a RhD-negative woman and you have a potentially sensitising event during the pregnancy you will be offered more anti-D prophylaxis at the time of the event.

Postnatal anti-D prophylaxis

If you are RhD-negative, after you have given birth, a blood sample is taken to test your baby’s blood group. This sample is usually taken from the part of the umbilical cord that is attached to the placenta. Occasionally if this cannot be done, a neonatologist caring for your baby will ask permission to take a small blood sample, usually from the heel of the foot. If your baby’s blood group is found to be RhD-positive, you will be offered a further injection of anti-D immunoglobulin. This is known as postnatal anti-D prophylaxis. This dose is 1500iu administered intramuscularly into the upper arm within 72 hours of the birth.