Mid Cheshire Hospitals NHS
NHS Foundation Trust

RhD Negative and Care in Pregnancy

Patient Information

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Contact your Midwife for further details
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Table of Contents

The National Institute for Clinical 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.

NICE was asked to look at the available evidence on giving routine antenatal Anti-D to rhesus negative pregnant women to prevent life-threatening conditions in babies. In May 2002 they published a national guideline recommending this treatment.

What does RhD Negative mean?

- The rhesus factor is found on the red blood cells. People who are rhesus positive have a substance, known as D antigen, on the surface of their red blood cells. They are said to be RhD positive (about 85 in every 100 people)

- People who are rhesus negative do not have the D antigen on their blood cells – they are said to be RhD negative (about 15 in every 100 people)

- Whether a person is RhD positive of RhD negative is determined by their genes – that is, it is inherited from their parents.

How does being RhD Negative affect me and my baby?

- RhD negative blood cells work just as well as RhD positive ones. The only time that being RhD negative matters is when you are pregnant.

- If the father of your baby is RhD positive, your baby could inherit his RhD positive blood type.

- During any pregnancy small amounts of the baby's blood can cross the placenta and enter the mother's blood stream.

- If this transfer of blood occurs from a RhD positive baby to a RhD negative mother, then the mother's immune system will see the baby's blood as "foreign" and she will produce antibodies which destroy all the baby's blood cells in the mother's circulation.

- The mother's immune system retains the memory of how to make these antibodies, which gives her the ability to make them more quickly and in greater numbers in the future if required.

- This only becomes a problem if there is another transfer of the baby's blood across the placenta during this pregnancy or in future pregnancies. The mother's immune system uses its memory to make the same antibodies as before. These can then re-cross the placenta and start to destroy baby's blood cells within the baby's circulation before birth.

- If this happens the baby can suffer a number of life-threatening conditions, collectively known as 'Haemolytic Disease of the Newborn' (HDN for short).

What can be done to prevent this happening?

The medical profession are very aware of this problem and can prevent the mother's immune system from "learning" to make RhD antibodies for herself by giving her injections of Anti-D gammaglobulin. These injections are usually given into the deltoid muscle of the upper arm.

Sensitising Events

Anti-D should be given whenever it is thought likely that there could have been a leakage of baby cells into the mother's circulation. This is known as a **sensitising event**.

Sensitising events can occur in any of the following situations:

- Vaginal bleeding
- Miscarriage (usually after 12 weeks)
- Severe stomach pains
- Amniocentesis or Chronic Villi sampling
- Trauma to the stomach – for example: a car accident or fall
- Termination of pregnancy
- Turning a breech baby
- Birth of the baby

At **every** sensitising event the RhD negative mother should have an injection of Anti-D as soon as possible (within 3 days). **It is important that you contact your Midwife or GP to arrange this.**

Some women, however will become sensitised without any obvious sensitising event (1-2 in every 100 pregnancies). Hence the recommendation for Anti-D to be given routinely to rhesus negative pregnant women (prophylactic or preventative treatment).

Antenatal Prophylaxis (Antenatal preventative treatment)

- The National Institute for Clinical Excellence (NICE) recommends that RhD negative mothers be offered injections of Anti-D at 28 weeks of pregnancy. This will ensure that there is Anti-D available in her circulation and provide maximum protection during the last 12 weeks of the pregnancy.

- If you book late in pregnancy it is still important to discuss this with your Midwife or Doctor.

What is Anti-D Gammaglobulin?

Anti-D is a blood product obtained from blood donors who have been sensitised to RhD positive cells.

The Anti-D used in England is imported from countries where there are no reported cases of Variant CJD and the blood has tested negative for HIV, Hepatitis B and C.

Anti-D works by rapidly destroying any baby blood cells in the mother's circulation before she can make her own antibodies.

This means that the mother does not have her own antibodies available to cause HDN in this or her next pregnancy. A simple injection of Anti-D therefore protects both the mother and her baby.

Are there any side effects?

Rarely an injection of Anti-D can cause an allergic response in the mother, as can many medications. Reported reactions have been: short-term discomfort at site of injection, itching and rashes, mouth ulcers, joint pains, shaking and dizziness and in very rare cases shortness of breath and swelling of the face. For this reason we recommend that the injection is given in a hospital, health centre or doctor's surgery and we ask that you remain there for 20 minutes and report immediately if you feel unwell.

You should inform your doctor if you have any of the above side effects after you have left the surgery. We would however, expect any of the serious allergic reactions to occur within the 20 minutes that you remain in the surgery, enabling treatment to be given immediately.

Flow Chart for treatment pathways for Rhesus Negative Mothers

RhD-negative mother

Prophylactic Anti-D accepted

Routine blood test at 28 weeks

Anti-D injection at 28 weeks pregnant

Anti-D injection after every known sensitising event

Bloods taken after the birth

If the baby's blood is RhD positive the mother is given an injection of Anti-D

Outcome

No RhD present in the mother's blood to harm her next baby

Prophylactic Anti-D declined

Routine blood test at 28 weeks

Anti-D injection after every known sensitising event

Bloods taken after the birth

If the baby's blood is RhD positive the mother is given an injection of Anti-D

Outcome

One to two RhD-negative women in every hundred will produce Anti-D antibodies that may harm her next baby

If you would like any further information please discuss with your Midwife or Doctor.

References

NICE Technology Appraisal No. 41, Pregnancy – routine anti-D prophylaxis for rhesus negative women. (May 2002) www.nice.org.uk (accessed 22.01.03)

Bio Products Laboratory (BPL). Dagger Lane, Elstree, Hertfordshire. WD6 3BX.

This leaflet is available in audio, braille, large print and other languages. To request a copy please call **01270 273104**

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