Rh Problems in Pregnancy

Proteins (*antigens*) on your red blood cells determine your blood type. The Rh factor is a specific type of protein on the surface of red blood cells. Most people have the Rh factor, which means they are Rh-positive. If you do not have the Rh factor, you are Rh-negative. When the mother is Rh-negative and the father is Rh-positive, the baby (*fetus*) could inherit the Rh factor and be Rh-positive.

Problems can develop when the baby is Rh-positive and the mother is Rh-negative. The mother can have an allergic (*immune system*) reaction to the baby's Rh-positive blood cells. This means the mother develops antibodies in her blood against the baby's Rh-positive blood. If the baby's blood gets into the mother's blood through the placenta, the antibodies produced by the mother destroy the baby's red blood cells. This causes the baby to become anemic (*lacking enough red blood cells*). This condition is called hemolytic disease or hemolytic anemia of the baby. Hemolytic disease of the baby can cause brain damage or even death of the baby. Firstborn infants are usually not affected, because it takes time for the mother's body to develop the antibodies.

CHANCES OF DEVELOPING Rh PROBLEMS

The Rh factor of the baby is acquired from the chromosomes of the mother and the father. The baby gets 1 gene from each parent. Each parent gives either an Rh-positive gene or Rh-negative gene to the baby. The Rh-positive gene is the dominant gene. If the baby inherits at least 1 Rh-positive gene, the baby will be Rh-positive. The Rh-negative gene is the recessive gene. If the mother is Rh-negative, she has 2 negative or recessive genes. If the father is Rh-positive, he could have 2 positive genes, or he could have 1 positive and 1 negative gene.

So, if the father has 2 positive genes, and the mother is Rh-negative, the baby has a 100% chance of being Rh-positive, because the baby will inherit a positive gene from the father. But, if the father has 1 positive gene and 1 negative gene, and the mother is Rh-negative, the baby has a 50% chance of being Rh-positive, because the baby may inherit the positive gene from the father, or the baby may inherit the negative gene from the father. If both the mother and father pass on Rh-negative genes to the baby, the baby will be Rh-negative. In that case, there will be no Rh problems during pregnancy.

CAUSES OF Rh PROBLEMS

- Delivery that causes significant baby and mother blood loss (*fetal-maternal hemorrhage*).
- Abortion, spontaneous (*miscarriage*) or induced.
- Threatened abortion or miscarriage.
- Pregnancy occurring outside the uterus (*ectopic pregnancy*).
- Taking a placenta tissue sample (*chorionic villus sampling*).
- Taking an amniotic fluid sample (*amniocentesis*).
- Taking a blood sample from the umbilical cord (*cordocentesis*).
- Mass of cysts in the uterus, instead of a fetus (*hydatidiform mole*).
- Injury (*trauma*) to the abdomen.
- Moving the baby from breech to normal position (*external version*).
- Fetal death in the uterus.
- Giving the wrong blood transfusion (positive blood in an Rh-negative woman).
- Failure to give RhoGAM vaccine after a delivery, when the baby is Rh-positive.
- Any kind of bleeding during the pregnancy.
- If the pregnancy goes beyond the due date, and the last RhoGAM shot was given 12 weeks or more ago.
- Rarely, it happens spontaneously, when bleeding is not detected during the pregnancy.

SYMPTOMS

There are no symptoms felt or seen, because the Rh factor does not affect the mother's general health. Symptoms seen in a newborn baby with the Rh problem include:

- Anemia (*lacking enough red blood cells*).
- Swelling of the face and abdomen.
- Yellow color in the skin and whites of the eyes (*jaundice*).
- Restricted growth of the fetus.

DIAGNOSIS

As part of your prenatal care, you will have blood tests to determine your blood type. If the mother is Rh-negative and the father is Rh-positive, screening during the pregnancy can show if you have developed antibodies to Rh-positive blood. If so, this could mean problems for your baby.

TREATMENT

Rh problems can be prevented, in most cases, when a medicine called RhoGAM vaccine (*anti-D immunoglobulin*) is given at the proper time. If you have Rh-negative blood and have not been previously sensitized, your caregiver may suggest that you get RhoGAM around the 28th week of pregnancy. You would also get RhoGAM before your delivery, if you have any uterine bleeding. This prevents sensitization for the rest of pregnancy. If your baby is born with Rh-positive blood, you will be given another dose of RhoGAM after delivery. This will prevent sensitization that may happen during delivery. RhoGam should be given if the pregnancy goes later than the due date, and the last RhoGAM shot was given 12 weeks ago.

If you have already developed antibodies, RhoGAM treatment does not help. If you are Rh-sensitized, your blood will be checked several times during your pregnancy, to see if the fetus is developing anemia. Your baby may need blood transfusion treatment while in the uterus, or may need to be delivered early.

RhoGAM is only helpful for the current pregnancy if you have bleeding, and you were given RhoGAM after the previous delivery of an Rh-positive baby. RhoGAM will protect you from problems for the next pregnancy. Each pregnancy of an Rh-positive child in an Rh-negative woman requires repeat doses of RhoGAM, after each delivery. Rh-negative women should also receive treatment after any event that could sensitize them. This should be done even if you are having a tubal ligation (*female sterilization, "tied tubes"*) or your spouse has a vasectomy (*male sterilization*) following delivery. Sometimes, repeat pregnancies happen even after sterilization procedures.

Usually, your baby can be delivered on time. Delivery may be followed by an exchange blood transfusion for the baby. The transfusion replaces the baby's diseased blood cells with healthy blood, and it prevents anemia. In severe cases, the baby may be delivered early or may be given transfusions while in your womb.

HOME CARE INSTRUCTIONS

- Follow the routine prenatal advice of your obstetrician or caregiver.
- Report any bleeding during the pregnancy. This may mean getting another shot of RhoGAM.
- Continue with your usual prenatal exercise and instructions.
- Take medications as directed.
- Keep your regular prenatal appointments and recommended tests.
- Have your caregiver perform the tests and procedures needed, to keep your baby from having Rh factor problems.
- Do not drink alcohol or smoke.

SEEK MEDICAL CARE IF:

You develop any problems with your pregnancy that concern you.

SEEK IMMEDIATE MEDICAL CARE IF:

- You develop uterine contractions.
- You have a gushing or burst of fluid from the birth canal (*vagina*).

- You have an oral temperature above 102° F (38.9° C), not controlled by medicine.
- You have passage of blood-tinged mucous (*bloody show*). This can mean labor is going to start soon.
- You no longer feel the baby move, or you think the baby is not moving as much as usual.
- You have any vaginal bleeding.
- You have any kind of injury (*trauma*) to your abdomen.

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