

Antibodies In Pregnancy

What It Means for Mom and Baby

What is Alloimmunization also called Isoimmunization?

Alloimmunization is when a woman's body makes antibodies after being exposed to foreign blood cell antigens. These antibodies cross the placenta and destroy the baby's blood cells. When this happens, it is called hemolytic disease of the fetus and newborn or HDFN. The antibodies can also cause problems for mom if she ever needs a blood transfusion. Women with alloimmunization need special blood and should have a medical alert card to give to their doctors.

How did this happen?

Alloimmunization most commonly happens after a blood transfusion, or birth of a child. During birth, mom's blood and the baby's blood mixes. If they have different blood antigens, then mom may form antibodies. Other ways for alloimmunization to happen include: miscarriage, abortion, bleeding during pregnancy, and procedures like amniocentesis.

How dangerous is this?

The biggest risk to the baby is that he will become anemic because the mom's antibodies are killing all of his blood cells. If the baby is not treated properly, fluid will build up and the baby will get hydrops or die. After birth, if the bilirubin is not treated properly, the baby is at risk for hearing loss and brain damage. Anemia after birth can happen until the baby is 12 weeks old. Untreated anemia can kill the baby. It is also possible for the baby to be at high risk for getting sick (neutropenia), or for easy bleeding and bruising (thrombocytopenia). If a woman with antibodies gets the wrong blood at any time in her life, she may die from a hemolytic transfusion reaction.

How can I protect my baby?

You can protect your baby by learning all that you can about alloimmunization and sharing it with your doctor. You need to make sure that you get the proper tests, monitoring, and treatment done. A Maternal Fetal Medicine doctor should know how to treat mom and baby, but an OB or midwife may not - you should ask for a referral to a specialist. You will need to be monitored by blood draws every 4 weeks until 28 weeks, then every 2 weeks. If your levels reach the critical titer, then you will need weekly MCA ultrasounds to check the baby for anemia. If the ultrasound shows that the baby is anemic, the baby needs to be given a blood transfusion through mom's belly, or delivered and given a transfusion after birth.

What tests should I have done during pregnancy? (Will this be too difficult to translate?)

Mom should have antibody titers or quants done every 4 weeks until 28 weeks, and then every 2 weeks.

If mom's levels are high, then she should have weekly MCA ultrasounds to check for anemia.

Dad should have an antigen phenotype run to see if he is homozygous or heterozygous for the antigen.

Cell Free Fetal DNA (cffDNA) is available to find out if a baby is at risk or safe from anti-Kell, anti-D, anti-C, anti-c, anti-E, and anti-e.

When should I give birth?

Women with antibodies usually give birth between 35 and 38 weeks. If the baby is showing signs of anemia or has had a transfusion already, the woman is usually induced between 35 and 37 weeks. If the baby is showing little signs of anemia, the woman is usually induced between 37 and 38 weeks.

What tests should I have done after birth?

From the cord blood at birth: hemoglobin, bilirubin, and direct agglutination test.

Repeat bilirubin every 6-12 hours in hospital, and daily after going home.

Repeat hemoglobin every week until ~12 weeks old.

Test the neutrophil count and platelet (thrombocyte) count at least twice before 12 weeks old.

What must I know about after birth?

After birth, the baby's disease is called Hemolytic Disease of the Fetus and Newborn (HDFN). If anemia and bilirubin are not treated carefully, the baby could suffer permanent damage or die. Babies need follow up blood tests until they are 12 weeks old. Most babies affected by the antibodies have normal iron levels. Giving iron to babies with HDFN without testing the ferritin levels first is very dangerous. Always get a ferritin test before giving iron. By 12 weeks old most babies are considered healthy with no further testing needed.