



# **BLOOD GROUP IMMUNIZATION DURING PREGNANCY: MONITORING AND CARE**

## **- INFORMATION FOR IMMUNIZED PREGNANT MOTHERS**

All pregnant mothers are tested for blood group antibodies at the maternity clinic. The goal is to identify those mothers whose child is at risk of the haemolytic disease of the fetus and newborn. The most severe forms of the disease may require treatment already during pregnancy because of fetal anaemia. A national screening programme was set up in order to identify at-risk pregnancies before the baby suffers any permanent damage.

### **WHAT TESTS ARE CARRIED OUT IF A BLOOD GROUP ANTIBODY IS FOUND?**

#### **A test to identify the antibody**

- The most significant antibodies during pregnancy are anti-D, anti-c and anti-E antibodies of the RhD blood group system and anti-K antibody of the Kell blood group system.
- Other blood group antibodies may also have an effect on pregnancy or blood transfusions for the mother.
- The laboratory report will contain an assessment of the antibody's significance and the need for monitoring the antibody level during pregnancy.

#### **A test to measure the antibody level in the mother's blood**

- The risk of the haemolytic disease of the fetus and newborn is relative to the level of antibody in blood.
- The blood levels will be monitored on a monthly basis.

#### **A test on the father's blood sample**

- The antibody in the mother's blood may be a result of a blood transfusion or a previous pregnancy. If the father is negative for the blood group in question, the baby cannot inherit this blood group or develop the haemolytic disease of the fetus and newborn. In this case, the mother's antibody levels do not have to be monitored as frequently.

The Finnish Red Cross Blood Service screens samples from 60,000 pregnant mothers annually, 1 % of whom testing positive for an antibody that can affect pregnancy.

### **HOW DOES BLOOD GROUP IMMUNIZATION AFFECT CARE DURING PREGNANCY?**

Information on a positive test for an antibody that can affect pregnancy is sent to the mother's own maternity clinic and a university hospital, with the hospital then drawing up a plan for antenatal treatment and monitoring. In mild cases, the monitoring can be carried out at the local maternity clinic. Those RhD negative mothers who have formed an anti-D antibody do not need an anti-D immunoglobulin injection during pregnancy or after delivery, because they do not benefit from it any more. If the mother's antibody level is already high at the early stages of pregnancy or the level increases significantly during pregnancy, the mother is invited to the maternity outpatient clinic of her maternity hospital or the university hospital, where:

- In severe cases of Rh or Kell immunization, the blood group of the fetus is identified from the mother's blood sample or amniotic fluid if the father is heterozygous for the blood group in question.
- The severity of fetal anaemia can be assessed by measuring the baby's blood flow velocity in the middle cerebral artery with ultrasound. The velocity increases in severe cases of fetal anaemia.
- The time and place of delivery are planned so that the care of the newborn baby can be prepared for in good time.
- In the most difficult forms of the haemolytic disease of the fetus and newborn, fetal anaemia can be treated already during pregnancy with intrauterine red blood cell transfusions. This is done by guiding a needle with ultrasound through the mother's abdominal wall into the vein in the umbilical cord for a blood sample and transfusion.
- After birth, the newborn may be treated with blue light therapy, intravenous gammaglobulin, red blood cell transfusions or blood exchange transfusions.

In Finland, around 150 children need treatment for the haemolytic disease of the fetus and newborn annually. Approximately ten children need an intrauterine blood transfusion during pregnancy with the same number of newborns requiring an exchange transfusion after birth. Because of modern treatment methods and the careful monitoring of immunized pregnant mothers, the prognosis for the haemolytic disease of the fetus and newborn is usually good and the development of these children normal.