

# Fetal Anemia

*Patient Information Series – What you should know, what you should ask.*

## **What is fetal anemia?**

Fetal anemia happens when the red blood cells in the blood of the fetus are abnormally low.

## **Why does fetal anemia happen?**

There are many reasons why fetal anemia could develop, but causes are mainly divided into two groups, anemia due to alloimmunisation (antibodies) and non-immune anemia. Alloimmunisation occurs when the mother creates antibodies against the blood of the fetus. Non-immune anemia can be caused by infections, transfusion between twins, heart problems, or other causes.

## **How is fetal anemia diagnosed?**

Suspicion of fetal anemia can be made using an ultrasound technology that is called Doppler, which evaluates the blood flow in many vessels in the fetus. When babies become anemic, for any reason, the blood is thinner and more dilute and hence can travel around the body at a greater speed. The maximal velocity of blood flow (PSV) detected in a major vessel in the fetal brain, called the middle cerebral artery (MCA) can appear higher than usual in some cases, and cause us to suspect when a fetus has anemia. However, the diagnosis of anemia is confirmed when a sample of blood is taken directly from the umbilical cord of the unborn fetus, a procedure called cordocentesis.

## **Should I ask my doctor to look for fetal anemia in all my scans?**

Anemia is usually suspected in women at high risk of alloimmunisation, this happens when the Rh factor of the mother's blood is different from that of the fetus and father. In all pregnancies, a routine screening test is performed in the mother's blood to look for antibodies that could pass through the placenta and destroy fetal blood cells. Women with a positive antibody test are considered at high risk and routine Doppler is performed to look for fetal anemia. Also, some situations such as maternal-fetal infections such as Parvovirus B19, twins sharing the same placenta, or placental tumors (chorioangiomas), also need to be screened for fetal anemia. Severe fetal anemia from any cause can lead to heart failure in the baby and if ultrasound detects signs of heart failure, then MCA Doppler will be performed to look for indirect evidence of fetal anemia as a cause for the heart failure.,

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## What happens after my fetus is confirmed with fetal anemia?

If fetal anemia is highly suspected on the Doppler study, your doctor will propose a confirmatory direct test (cordocentesis). If the diagnosis of fetal anemia is confirmed and classified as moderate or severe, the next step is to perform an intrauterine fetal transfusion. This procedure consists of an infusion of O-negative blood into the fetus via the umbilical vein under continuously guided by ultrasound to replace the baby's red blood cells. Depending on the type of anemia and reason, an intra-uterine transfusion can be performed several times during pregnancy to preserve the life of the fetus.

## Will it happen again?

For fetal anemia due to alloimmunisation, it is very **likely** to happen again in further pregnancies and the fetus needs to be followed up very carefully with a Doppler ultrasound throughout the pregnancy. For non-immune fetal anemia, it is very **unlikely** to happen again but entirely depends on the cause of fetal anemia in the first place.

## What other questions should I ask?

- Should I receive alloimmunisation prophylaxis?
- Is my fetus at high risk for having severe anemia?
- When will be my next visit for Doppler assessment?
- Is the measurement of Doppler adequate for the gestational age?
- Are there other treatment options besides transfusion for my fetus?
- How often do my follow-ups have to be scheduled after fetal transfusion?
- Can I deliver vaginally and when is the ideal gestational age of birth in case of fetal anemia?
- What is the neurological prognosis in case of fetal anemia?
- What is the risk of recurrence of fetal anemia in future pregnancies?

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