Rh incompatibility

Rh incompatibility is a condition that develops when a pregnant woman has Rh-negative blood and the baby in her womb has Rh-positive blood.

Causes

During pregnancy, red blood cells from the unborn baby can cross into the mother's bloodstream through the placenta.

If the mother is Rh-negative, her immune system treats Rh-positive fetal cells as if they were a foreign substance and makes antibodies against the fetal blood cells. These anti-Rh antibodies may cross back through the placenta into the developing baby and destroy the baby's circulating red blood cells.

When red blood cells are broken down, they make bilirubin. This causes an infant to become yellow (jaundiced). The level of bilirubin in the infant's bloodstream may range from mild to dangerously high.

Because it takes time for the mother to develop antibodies, firstborn infants are often not affected unless the mother had past miscarriages or abortions that sensitized her immune system. However, all children she has afterwards who are also Rh-positive may be affected.

Rh incompatibility develops only when the mother is Rh-negative and the infant is Rh-positive. Thanks to the use of special immune globulins called RhoGHAM, this problem has become uncommon in places that provide access to good prenatal care.

Symptoms
Rh incompatibility can cause symptoms ranging from very mild to deadly. In its mildest form, Rh incompatibility causes the destruction of red blood cells without other effects.

After birth, the infant may have:

- Yellowing of the skin and whites of the eyes (jaundice)
- **Low muscle tone** (hypotonia) and lethargy

### Exams and Tests

Before delivery, the mother may have an increased amount of amniotic fluid around her unborn baby (**polyhydramnios**).

There may be:

- A positive **direct Coombs** test result
- Higher-than-normal levels of bilirubin in the baby's umbilical cord blood
- Signs of red blood cell destruction in the infant's blood

### Treatment

Because Rh incompatibility is preventable with the use of RhoGAM, prevention remains the best treatment. Treatment of an infant who is already affected depends on the severity of the condition.

Infants with mild Rh incompatibility may be treated with phototherapy using **bilirubin lights**. IV immune globulin may be used, but there is no conclusive evidence to show it works.

### Outlook (Prognosis)

Full recovery is expected for mild Rh incompatibility.

### Possible Complications

Possible complications include:

- Brain damage due to high levels of bilirubin (kemicterus)
- Fluid buildup and swelling in the baby (hydrops fetalis)
- Problems with mental function, movement, hearing, speech, and seizures

### When to Contact a Medical Professional

Patient Instructions

**Newborn jaundice - discharge**
Call your health care provider if you think or know you are pregnant and have not yet seen a doctor.

**Prevention**

Rh incompatibility is almost completely preventable. Rh-negative mothers should be followed closely by their obstetricians during pregnancy.

Special immune globulins, called RhoGAM, are now used to prevent RH incompatibility in mothers who are Rh-negative.

If the father of the infant is Rh-positive or if his blood type cannot be confirmed, the mother is given an injection of RhoGAM during the second trimester. If the baby is Rh-positive, the mother will get a second injection within a few days after delivery.

These injections prevent the development of antibodies against Rh-positive blood. However, women with Rh-negative blood type must receive injections:

- During every pregnancy
- If they have a miscarriage or abortion
- After prenatal tests such as amniocentesis and chorionic villus biopsy
- After injury to the abdomen during pregnancy

**Alternative Names**

Rh-induced hemolytic disease of the newborn; Erythroblastosis fetalis

**References**


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