INTRAUTERINE TRANSFUSION

An intrauterine transfusion provides blood to an Rh-positive fetus when fetal red blood cells are being destroyed by Rh antibodies. A blood transfusion is given to replace fetal red blood cells that are being destroyed by the Rh-sensitized mother's immune system. Intrauterine transfusion is a direct transfer of Rh-negative blood cells into a fetus in utero in cases of isoimmunization. This treatment is meant to keep the fetus healthy until he or she is mature enough to be delivered.

Transfusions can be given through the fetal abdomen or, more commonly, by delivering the blood into the umbilical vein or artery. Umbilical cord vessel transfusion is the preferred method, because it permits better absorption of blood and has a higher survival rate than transfusion through the abdomen.

An intrauterine fetal blood transfusion is done by perinatologists at specialized centers or in the hospital. The mother may have to stay overnight after the procedure.

The mother is sedated, and an ultrasound image is obtained to determine the position of the fetus and placenta.

After the mother's abdomen is cleaned with an antiseptic solution, she is given a local anesthetic injection to numb the abdominal area where the transfusion needle will be inserted.

Medicine may be given to the fetus to temporarily stop fetal movement.

Ultrasound is used to guide the needle through the mother's abdomen into the fetus's abdomen or an umbilical cord vein.

A compatible blood type (usually type O, Rh-negative) is delivered into the fetus's umbilical cord blood vessel.

The mother is usually given antibiotics to prevent infection. She may also be given tocolytic medicine to prevent labor from beginning, though this is unusual.
What to Expect After Treatment?

A short recovery period (approximately 1 to 3 hours) is needed to allow the mother's sedatives to wear off. If the fetus was given medicine to prevent movement, it may be several hours until the mother can feel the fetus moving again.

Why is it Done?

A sensitized mother's immune system can destroy a large amount of fetal red blood cells, causing severe anemia. Intrauterine blood transfusions are done when:

- Doppler ultrasound of the middle cerebral artery suggests anemia
- The bilirubin result from amniocentesis testing shows that the fetus is moderately to severely affected by Rh sensitization
- Ultrasound shows evidence of fetal hydrops, such as swollen tissues and organs
- Fetal blood sampling (FBS) shows that the fetus has severe anemia. The transfusion may be done immediately.

In a severely affected fetus, transfusions are done every 1 to 4 weeks until the fetus is mature enough to be delivered safely. Amniocentesis may be done to determine the maturity of the fetus's lungs before delivery is scheduled.

How Well Does it Work?

Fetal survival after transfusion depends upon the severity of the fetus's illness, the method of transfusion, and the skill of the doctor who does the procedure. Overall, after intrauterine transfusion through the umbilical cord:

- More than 90 percent of fetuses that do not have hydrops survive
- About 75 percent of fetuses that have hydrops survive

What are the Risks?

Intrauterine transfusions may cause:

- Uterine infection
- Fetal infection
- Preterm labor
- Excessive bleeding and mixing of fetal and maternal blood
- Amniotic fluid leakage from the uterus
- Fetal death