

PROCEDURE FOR: Intrauterine Fetal Blood Transfusion: Assistance with

PURPOSE: To outline the nurse's responsibility during intrauterine fetal blood transfusions.

POLICY: Intrauterine fetal blood transfusions on viable fetuses will be performed by an attending physician and those designated as their assistants in the MFICU.

PROTOCOL: Preparation and Coordination

1. The patient has a CBC and Type and Screen done for cross matching purposes.
2. The physician initially communicates with Blood Bank personnel when it is determined that a transfusion is necessary. On the day of the procedure, communicate with the Blood Bank to see when the blood will be ready for the fetal transfusion. MD needs to communicate the number of cc's (volume) and whether or not in syringe or bag.
3. Type O negative, CMV negative, sickle cell negative, specific antigen negative and irradiated blood is given to the fetus.
4. Alert Hematology regarding estimated time of arrival of stat fetal specimen.
5. If there is not a unit secretary available to run the blood to the lab, notify Transportation of the need for someone to stand by to transport the fetal sample to the lab immediately.
6. The specimen must be immediately taken to the lab and processed as the amount of blood to be transfused is determined by the fetal CBC Hematocrit.
7. Notify Anesthesia that the procedure will be done. Request a consult as ordered by the physician, particularly if the procedure will be done in the delivery room under conscious sedation. Anesthesiology will be present for patients with epidurals and conscious sedation.
8. Notify NICU.
9. Consent must be signed for the procedure and for the administration of blood products prior to the administration of narcotics.
10. Once MD has determined if access is possible, blood should be obtained from Blood Bank. The transfusion can be started while waiting for CBC results.

Medication & Blood Administration

1. Blood and patient identification should be performed according to blood transfusion protocol.
2. Antibiotics as ordered (usually at least ½ hour prior to the procedure).

PROCEDURE FOR: Intrauterine Fetal Blood Transfusion: Assistance with

3. Vecuronium (0.1 mg/kg of fetal weight) and vial of sterile water with 10cc syringe/needed to mix the Vecuronium. Administer in 1cc syringe. Physician may want 2 doses if performing intraperitoneal transfusion.
4. Lidocaine 1% 10cc vial if using conscious sedation.
5. 100cc bag of normal saline with bag spike and IV pole.
6. IV fluids as ordered/IV access is necessary.

Equipment/Supplies

4 purple bullets and 1 green bullet from NICU for fetal specimen

Sterile gowns, masks and gloves for doctors

2 sterile ½ sheets (sterile abdominal drape [c/s drape] and table cover)*

On a sterile table you will need the following:

- (2) 40 inch extension tubings from Pyxis - Open only one, have the other one available.*
- (3) 3 way stopcocks - Open only one, have the other one available.*
- (1) 7 inch microbore extension set, if requested by physician.
- Physician preference of syringes (usually (2) 35cc or (4) 20cc).*
- (10) 1cc syringes - Once sterile, a physician will fill 5 with saline flush. Have the other 5 available.
- (4) 1cc heparinized syringes (cord gas syringes) - Physician may want more.
- (1) 3cc syringe.
- Physician preference of spinal needle (usually (2) 20 or 22 gauge needs, 3.5 or 5 inches long).*
- (1) package of sterile towels.
- Sterile 4x4s - Do not open unless needed, there are 4x4s in the amnio kit.
- (2) amniocentesis kits - Have available but do not open the second amnio kit.
- Sterile marker pen.
- Steri stripes - used to make labels on sterile field.

PROCEDURE FOR: Intrauterine Fetal Blood Transfusion: Assistance with

- Blood Y-type tubing.
- * Will need more of these items if performing an intraperitoneal transfusion as well.

Paperwork

- 10 patient stickers - clearly label 5 of them "FETAL SPECIMEN"
- Specimen bags
- Blood Bank Lab Requisitions:
 - Blood Bank Requisition for fetal blood type and Rh, direct coombs, Kleihauer-Betke and hemoglobin electrophoresis
 - Blood Bank Component Transfusion Request with specific volume
 - Request for Blood Release
 - Consent for transfusion of blood products and for IUFT/PUBS to lab
- Hematology Requisition for Fetal CBC with MCV and reticulocyte count
- Chemistry Requisition for total bilirubin
- PUBS Log Sheet - Obtain from the physician requesting its use (not all physicians use this). RN may use this sheet for easy documentation and reference. However, this is not part of the chart.

PROCEDURE:

<u>ACTION</u>	<u>POINTS OF EMPHASIS</u>
1. Place EFM for monitor strip tracing and evaluation.	1. Non-viable fetuses do not need to be monitored.
2. Begin IV with #18 jelco and obtain additional lab work as ordered.	2. Fluid type and rate as ordered.
3. Set up table with equipment as listed.	
4. Have the patient void just prior to the procedure.	4. Avoid the need to interrupt the procedure to allow the patient to void.
5. Verify coordination with Anesthesia, Blood Bank and NICU.	5. See Prep and Coordination.
6. Designate person to run stat specimen to lab and verify they are standing by.	6. Just before specimen is drawn, call Hematology to tell them STAT fetal CBC will be there shortly. Emphasize that it is a fetal specimen and must be run immediately.

PROCEDURE FOR: Intrauterine Fetal Blood Transfusion: Assistance with

7. If conscious sedation is used and an anesthesiologist is not present, follow the protocol for care of patient receiving conscious sedation.
 8. After the physician has donned sterile gloves, open half sheet and give to physician, using sterile technique.
 9. Assist with drawing up of medications.
 10. Assist the physician with the transfer of blood from the bag or syringe to the appropriate syringes if requested.
 11. The physician will then prime the tubing with blood.
 12. When the fetal blood sample is obtained, fill the bullets only to the area between the lines. Begin moving the bullets back and forth immediately once top is replaced.
 13. Assist with the fetal transfusion procedure.
 14. Following the procedure, remove the drape, gently clean the Betadine off the abdomen and apply the EFM to observe FHR and uterine activity.
8. The physician will drape the patient with the towels and half sheet.
 10. Blood products must be filtered if products arrive in bag.
 12. Moving the bullets back and forth is essential to prevent clot formation. When the fetal blood sample is obtained, fill the purple bullet only to the area between the 250 and 500 microliter lines (.25 to .5 cc blood). The purple bullet contains a calculated amount of anticoagulant. The lab can usually do the CBC fetal type and Rh, retic count, direct coombs and Kleihauer Betke off the same 500 microliter purple bullet. Any additional blood can go into a second purple bullet. Green bullets are used as needed to obtain total bilirubin.
 13. The fetal CBC determines how much blood will be transfused.

MCV of the CBC of the initial fetal sample will tell you how much of it is fetal cells. High MCV means fetal cells (about 120). As more transfusions are performed and there are less fetal cells, the MCV drops.

Once a transfusion has been done, a Kleihauer-Betke will reveal adult cells in the fetus from the donor blood. As more transfusions are done, specimens reveal more and more adult donor cells until the specimen becomes completely adult donor cells and no fetal cells.
 14. Non-viable fetuses (<23 weeks gestation) need not be monitored.

PROCEDURE FOR: Intrauterine Fetal Blood Transfusion: Assistance with

15. Administer antibiotics to the patient as ordered by the physician.
16. The patient may be discharged following evaluation by a MFM attending/fellow, or to be admitted as 23 hour observation
16. The patient should have date for a follow-up maternal-fetal evaluation at time of discharge.
17. Document on a L&D Flowsheet.
17. Document in additional procedures book.

APPROVAL: Nursing Standards Committee

EFFECTIVE DATE: 2/05

REVISION DATES: 5/05, 3/09, 4/09