P.O.L.I.C.Y

Intrauterine transfusion is used to replace fetal red cells with compatible blood in hemolytic disease of the fetus. A prescriber’s order is required for this procedure.

The Physician Coordinator is responsible for administration of intravenous push medications, if required.

Intrauterine Transfusion bookings are made through the Maternity Ambulatory Program and confirmed with the Chief Sonographer at least 24 hours in advance.

C&W Transfusion Medicine Haematology Laboratory provides a specially trained Technologist to perform the testing.

P.R.O.C.E.D.U.R.E

1.0 Criteria for Intrauterine Transfusion
An intrauterine transfusion is performed in the following situations:
- Fetal anemia secondary to other temporary causes
- Fetal anemia secondary to parvovirus infection
- Fetal thrombocytopenia secondary to anti-PLA 1 antibodies
- Isoimmunization with other blood group antigens, circumstances such as:
  - Severe Rhesus Isoimmunization
  - Fetus demonstrating ultrasound evidence of hydrops fetales
  - Hemoglobin of less than 10 on cordocentesis
  - OD 450 above 80% of Zone 11 (at least moderately affected) or in Zone 111 (severely affected)
  - before 30 weeks, or before fetal maturity can be demonstrated

2.0 Booking the Intrauterine Transfusion
Upon the primary physician’s request the ultrasound booking clerk should schedule 1 ½ hours for the procedure. This includes 30 minutes preparation time.
- The following information should be obtained:
  - Woman’s location (inpatient/outpatient)
  - Woman’s name
  - Blood group and Rh status
  - Date of birth
  - Gestational age at time of procedure
  - Indication for procedure
  - Laboratory tests required at time of procedure
  - Physicians involved
  - Special equipment required.
  - Caesarean section chart package

Complete a blue Special Procedure Booking Form and distribute copies by fax to all relevant personnel (Perinatology department, procedure nurse, clinical resource nurse and maternal fetal medicine nurses)

The procedure is not confirmed unless the entire team is available

Notify the Transfusion Medicine Lab (2308) and the Supervisor of Haematology (2938) and prepare the women’s chart when an IUT is scheduled.
3.0 Preparation for Intrauterine Transfusion

**Perinatologist**

- If necessary book biometry for the day before the IUT
- Confirm the procedure with the Chief Sonographer 24 hours in advance
- Patient to be seen in MFM clinic prior to the day of the procedure.
- Procedure is explained and consent received for the procedure, possible caesarean and for blood products obtained. Pt given requisition for CBC, group and screen and cross match for 1 unit irradiated PRC’s and sent to out-patient lab. Pt aware to remain NPO after midnight and the need for transportation home post procedure.
- Orders are written by MFM, including rocuronium dosage, IV, pre and post NST monitoring. The telephone local 2288 must be indicated so pharmacy may notify the procedure nurse when the meds are ready. (standard pre-printed orders)
- If the Liley curve or Fetal Haemoglobin is used to determine the necessity for the IUT inform the Chief Sonographer or Transfusion Medicine Laboratory (2308) and the Haematology Supervisor (2938) of the result as soon as it is available

**Procedure Nurse Maternity Ambulatory Program**

- Contact the Physician performing the procedure when patient arrives
- Assess the woman’s knowledge and understanding of the procedure and then provide her with support and additional information, if necessary.
- Complete the following forms:
  - Blood Release Request Form
  - Admission/ triage form
  - Medication record
  - Fluid balance record
  - Send medication orders to pharmacy via pneumonic tube. Indicate telephone local 2288 on prescriber's orders.
- Pharmacy to call this local when medications are ready for pick up.
- Perform NST
- The procedure nurse or another R.N. will proceed to pharmacy to pick up the medications.
- Carry out the Physician's orders with regard to sedation, the withholding of food/fluids, the type of I.V. solutions, medications to accompany patient to the procedure room
- Have patient remove personal clothing and change into hospital IV gown
- Ensure that the woman has emptied her bladder and bowels.
- Ensure that all necessary requisitions are on the chart (General Lab Requisitions X3, Transfusion Medicine Blood Release Forms)
- Procedure nurse to accompany the woman to the procedure room.
3.1 Gather Equipment

Second procedure Nurse Diagnostic Ambulatory Program

1. Stainless steel OR Table
2. Wheeled IV Pole
3. IUT Bundle
4. Sterile Bowl Set
5. 10 count 4x4 sterile gauze
6. Extension tubing
7. Y-type Blood Administration Set
8. Sterile Probe Cover
9. Sterile Sleeve
10. 3 Way Stop Cock
11. 20 cc Luer Lock Syringe x 1
12. 20 cc Slip Tip Syringe x 2
13. 3cc Slip tip Syringe x 4
14. 1 cc Tuberculin Syringe x 2
15. #30 Spinal Needle (3.5" or 5")
16. #18 needle x 4
17. #25 x 1.5" needle x 1
18. APT Supplies
19. Sterile Normal Saline 10 cc vial x 3
20. Xylocaine 1% without Epinephrine x 1
21. Specimen Tubes as required
22. Masks and Eye Goggles
23. Sterile gloves
24. Chlorohexidine Prep Solution
25. Packed red Blood cells

Physician

Ensure the Intrauterine Prescriber’s Orders are signed. Obtain written consent with patient for Intrauterine Transfusion procedure, Emergency Caesarean Section and Blood Product Administration.

Registered Nurse Maternity Ambulatory Program

- Confirm the availability of blood for the transfusion by phoning TML.
- Reserve the High Risk labour room if necessary for post-procedure monitoring as indicated by the referring Physician.
- Notify O.R. staff if the fetus is viable
- Complete a Blood Release Tag and obtain blood from TML

Note: A transfusion set is available in procedure room

- Ensure that the woman has been sedated according to the Physician’s orders
- Ensure that the woman is placed in a left lateral position using a wedge before the time slated for the procedure
• Ensure the appropriate haematology requisitions are complete before the start of the procedure. Write on the requisition “Fetal Cord Blood from I.U.T”
• Ensure that the sterile equipment set-up is complete before the start of the infusion

**Procedurist**
• Attend the woman 30 minutes prior to the procedure
• Leave pager and cellular phone at reception desk during procedure
• Draw a fetal cord blood sample for Haemoglobin assessment prior to and after the transfusion
• If required, draw a specimen for cord gas analysis, and an APT test.

**Sonographer/Guiding Sonographer**
Be available 30 minutes prior to the start of the procedure.
• Ensure that the following equipment is available:
  - High resolution sector scanner with 3.5 and 5.0 Mhz probes and Doppler capability
  - 2 high resolution monitors
• Connect the high resolution monitors to the scanner and position one to the left of the woman’s head and one to the right of the woman’s legs
• Assess fetal lie and cord insertion into placenta to determine the optimal site for needle insertion and guidance

**4.0 Intrauterine Transfusion**

**Sonographer/Guiding Sonographer**
• Identify and document FH by M-mode before and after completion of procedure
• Monitor the insertion of the needle into the vessel by continuous real-time scanning
• Use (colour) doppler as indicated during procedure

**Registered Nurse Maternity Ambulatory Program**
A specially trained Registered Nurse assists with an intrauterine transfusion,

• Hang the blood (WW.03.08) – Transfusion Medicine Policy TR.06.01.01
• Connect the blood infusion set to the blood
• Request the Physician to attach sterile extension tubing and 3 way stop cock
• Tape the tubing of the blood transfusion set to the table drape
  **Note:** The Physician will fill a syringe just prior to the procedure and prepare to manually inject the blood
• Assist the Physician to perform the procedure
  **Note:** If the Physician draws a specimen for the APT test, perform the test and call the result “fetal or maternal” out loud to the physician in the procedure room.
• Monitor uterine activity and FHR as ordered by the Physician
• Document medications used during procedure

**Perinatologist**
Oversee each IUT.
• Administer I.V. medication as ordered by the Physician performing the procedure
• Act as a facilitator for the debriefing session following the IUT
INTRAUTERINE TRANSFUSION

- Complete the Fetal Intravascular Transfusion Checklist for each procedure

**Hematology Technologist**
Transfusion Medicine Haematology Laboratory provides a specially trained Technologist to perform the testing.

- Obtain a result of the fetal cord sample for Haemoglobin assessment from the Hemocue immediately prior to and after the transfusion
- Confirm the result by sending the remainder of sample to haematology by runner ‘stat’

  **Note:** Results of ‘stat’ samples are phoned to the procedure room. Results are reported in SI units. The procedure is repeated if additional samples are taken during the transfusion. The Hematology Laboratory will generate computerized reports of the Hemocue and the parallel testing.

**5.0 Post Intra-uterine Transfusion**

If the fetus is considered pre-viable as per Maternal Fetal Medicine, the patient will be discharged home with instructions for follow-up.

If the fetus is considered viable as per Maternal Fetal Medicine, the patient is transferred via stretcher, left lateral to the delivery suite for fetal and maternal monitoring.

The delivery suite unit clerk will notify admitting and generate a blue card.

Face to face report is to given from the procedure nurse to the delivery suite nurse accepting care.

The patient is to be discharged home as per Maternal Fetal Medicine’s direction.

**DOCUMENTATION**

**RN**
- Blood Release Tag
- Medication Record
- Group and Screen Cross match Request
- Haematology requisitions
- Specimen labels
- Inter professional Progress Notes
- Nursing triage admission
- Fluid balance record

**Physician**
- Consent For Procedure or Treatment
- Consultation
- Fetal Intravascular Transfusion Checklist
- Prescribers Orders
- Request For Diagnostic Ultrasound
INTRAUTERINE TRANSFUSION

Unit Clerk
- Special Procedure Booking Form
- Emergency caesarean section package

REFERENCES


Liley, A.W (1963) Intrauterine Transfusion of the foetus in haemolytic disease. *British Medical Journal*

Moise, KJ, Whitecar PW. Antenatal therapy for haemolytic disease of the fetus and newborn. In: Alloimmune disorders in pregnancy


APPENDIX

APPENDIX A  Potential Bloodwork to be Considered for Fetal Hydrops of Unknown Etiology