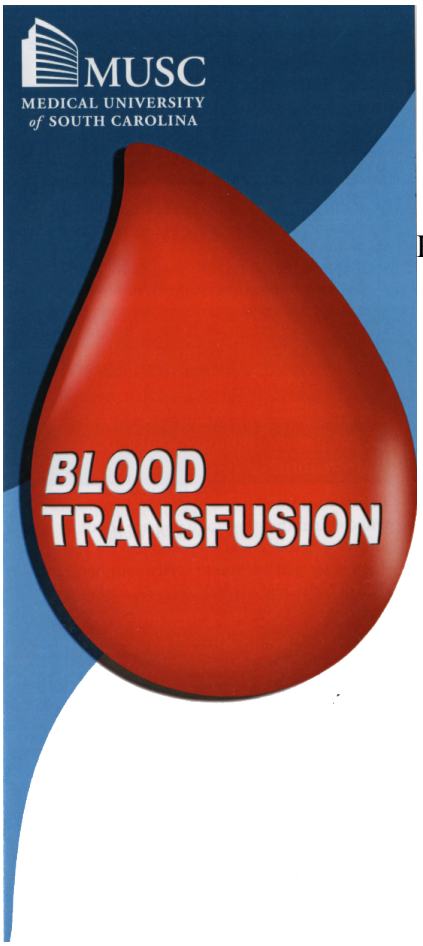
Blood Bank Consultation



Blood Bank Consultation
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Products available for transfusion:
- Leukoreduced Red Blood Cells (RBCs)
- Leukoreduced Platelets
- Plasma
- Cryoprecipitate
Risks of Transfusion
Transfusion Reaction Recognition
Transfusion Reaction Reporting

Leukoreduced Red Blood Cells (LRBC):
- LRBC should be transfused based on clinical need, not laboratory values.
- In the absence of hemorrhage, LRBC transfusion should be given as single units.
-Transfusion of one unit should be completed within four hours.

Indications:
- SYMPTOMATIC ANEMIA (Hgb<7 g/dL)

- EXCHANGE TRANSFUSION in hemolytic disease of the fetus and newborn and in certain symptomatic complications of sickle cell disease.
- ACUTE BLOOD LOSS refractory to crystalloid infusions.

Volume: 250-300 mL
ABO compatibility: required
Crossmatch: required
Processing time: 90 minutes for non-urgent issue
*Patients with antibodies require additional time (hours to days, consult blood bank)
Emergency issue: available upon request

Special Indications:
- Irradiation: severely immunocompromised patients (prevent GVHD)
- Washed: IgA deficient patients (prevent anaphylaxis)

Expected Increments:

- Hemoglobin will equilibrate 15 minutes after transfusion.
- In an average sized adult, one unit will increase hemoglobin level by approximately 1 gram and the hematocrit by 3%.
- In neonates, the dose should be 10-15 mL/kg for a 1 gram/dL increase.

Autologous and Directed Units:
- Are rarely indicated or needed
- Usually collected by Red Cross or other Blood Center near donor's home
- Blood Center is exclusively responsible for donor suitability and eligibility for donation
- Blood Center must be contacted by physician to complete paperwork and schedule donation; the Blood Center will NOT collect without this
(Red Cross phone number 1-800-272-6454)
-MUSC Blood Bank must be notified to expect autologous or directed units for the patient

Leukoreduced Platelets:
Indications:
LOW PLATELET COUNT - active bleeding
LOW PLATELET COUNT- prevention of bleed
Platelets <10,000 μL

Contraindications:
Autoimmune thrombocytopenia, TTP, heparin induced thrombocytopenia with thrombosis

Volume: 250-300 mL
ABO compatibility: preferred, not required
Crossmatch: alloimmunized patients may require HLA matched platelet products (consult blood

bank)
Processing time: 20 minutes for non-urgent issue
*HLA matched platelets require 2-4 days

Expected Increments:
Adult: 1 unit = 30,000 increment
Peds: 10-15 ml/Kg = 30,000 increment

Plasma:
Indications:
Active bleeding or risk of bleeding due to MULTIPLE COAGULATION FACTOR DEFICIENCIES (not factor VIII or IX)
PT>14, aPTT>36, INR>2
Urgent reversal of warfarin
Massive transfusions (>10 units LRBC) with coagulopathic bleeding
Known single coagulation factor deficiency or rare plasma protein deficiency for which no concentrate is available
TTP

Volume: 250-300 mL
ABO compatibility: required
Crossmatch: not required
Processing time: 45 minutes

Expected Increments:
Adult and pediatric: 10-20 ml/Kg usually corrects coagulation factor deficiencies

Cryoprecipitate:
Indications:
Fibrinogen deficiency
vonWillebrand factor issues
Hemophilia A (Factor VIII deficiency)

Volume: 250-300 mL
ABO compatibility: preferred, not required
Crossmatch: not required
Processing time: 30 minutes

Expected Increments:
Adult- prepooled dose: 2000-2200 mg fibrinogen
Pediatric- single units : 350-400 mg fibrinogen

Risks of Transfusion:

- Transfusion transmitted diseases:
  - HIV: 1 in 1.5 million
  - Hepatitis B: 1 in 282 thousand
  - Hepatitis C: 1 in 1.1 million
  - Bacterial sepsis:1 in 5 million
- Transfusion reactions:
  - Allergic: 0.1-0.6% LRBC,
    - 1-3% plasma,
    - ~5% apheresis
  - Anaphylactoid/anaphylactic: 1 in 20-50 thousand
  - Febrile: 0.1-0.4% LRBC and platelets,
    - 4-8% apheresis
  - Hemolytic, acute: 1 in 12-38 thousand
  - Hemolytic, delayed: 1 in 5-62 thousand
  - TRALI: 1 in 440 thousand LRBC
    - 1 in 250 thousand plasma
    - 1 in 96 thousand apheresis platelets

Transfusion Reaction Recognition:

When symptoms not explained by the patients underlying condition:
Fever or Chills/rigors
Hypotension
Flushing
Localized swelling of soft tissues, erythema or edema
Bronchospasm (wheezing/asthma) or shortness of breath
Back/flank pain
Blood in urine during or shortly after transfusion
Epistaxis (nosebleed)
Oliguria/anuria (decreased output or no urine output)
Renal failure
Disseminated intravascular coagulation (DIC)
Pain or oozing at IV site

SUSPECTED TRANSFUSION REACTION REPORTING INSTRUCTIONS – ALL CASES

1. STOP transfusion, leaving set attached
2. Keep vein open with saline using a new IV set
3. Check vital signs every 15 minutes (pulse, BP, temperature). Save urine passed by patient.
4. Re-check patient identity and information on product label.

5. Notify blood bank 2-2671.

For Allergic/Urticarial reactions (hives/rash/itching) and no other symptoms - consult physician for possible antihistamine administration and proceed cautiously if blood product is viable

For all other suspected transfusion reactions:
1. DO NOT RESTART TRANSFUSION - Remove administration set and donor unit
2. Collect two 4ml lavender or pink top tubes of blood.
3. Send transfusion kit with offending unit, a copy of the completed Blood Unit Tag and all samples to Transfusion Services for investigation, 208 Children's Hospital.
4. Collect urine sample and label "Transfusion Reaction Specimen". Send to Fast Flow Laboratory, Specimen receiving, Room 319 Children's Hospital.

For shortness of breath/wheezing:
1. Order Chest X-ray (CXR); assess for pulmonary infiltrates
2. Administer epinephrine if reaction is life threatening and appears allergic
3. Consider oxygen, intubation and vasopressors if associated to hypotension
4. Consider oxygen, diuretics if associated to hypertension

References: American Red Cross
A Compendium of Transfusion Practic
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