PROCEDURE

Title: Transfusion Reaction Investigation

Procedure #: 2015BLOODBANK55

Institution: Highlands Regional Medical Center

Address: 3600 Highlands Avenue, Sebring Florida 33870

Prepared by: Anita Smith Date: 6/4/2015

Title: Laboratory Administrative Director

Accepted by: _____ Date: 6-5-15

Title: Laboratory Medical Director

Date Patient Testing Implemented: 4/1/2009

Review of procedure every two years

Reviewed by: _____ Date: _____

Reviewed by: _____ Date: _____

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Reviewed by: _____ Date: _____

Discontinued testing date: _____

Highlands Regional MEDICAL CENTER

Policy Name:	**Transfusion Reaction Investigation**	**Department:**	**Blood Bank-Lab**
Departmental Review:		**Policy #:**	**B2.0**
INITIATE DATE 04/2009	**DATE REVIEWED/REVISED** 06/2013	**PAGE 1 of 3**	

PURPOSE:
The transfusion of blood and blood components is ordinarily a safe and effective way to correct hematological deficits, but untoward results may occur. These adverse effects are commonly referred to as transfusion reactions. Some adverse reactions can be prevented, others cannot. All untoward reactions that occur with the transfusion of blood or blood products must be investigated. These reactions are investigated to rule out whether or not the symptoms are the result of incompatible red cells or whole blood components.

POLICY
Listed below are the signs and symptoms that are typically associated with acute transfusion reactions and can aid in their recognition.

1. Fever with or without chills (generally defined as a 1^0 C (2^0 F) increase in body temperature) associated with transfusion. Fever is the most common symptom of a hemolytic transfusion reaction (HTR), but more frequently has other causes.
2. Shaking chills (rigors) with or without fever.
3. Pain at the infusion site or in the chest, abdomen or flanks.
4. Blood pressure changes, usually acute, either hypertension or hypotension. Circulatory shock in combination with fever, chills and high-output cardiac failure suggests acute sepsis, but may also accompany an acute HTR. Circulatory collapse without fever and chills may be the most prominent finding in anaphylaxis.
5. Respiratory distress, including dyspnea, tachypnea, wheezing or hypoxemia.
6. Skin changes, including urticaria, pruritis (itching), flushing or localized edema (angioedema).
7. Nausea with or without vomiting.
8. Darkened urine. Such a change may be the earliest indication of an acute hemolytic reaction in an anesthetized patient.
9. Bleeding or other manifestations of a consumption coagulopathy.
10. TRALI: 1)acute onset 2) hypoxemia PaO2/FIO2 <300 Hg or oxygen saturation <90% on room air or other clinical evidence 3)bilateral lung infiltrates on a chest xray 4) no evidence of circulatory overload.

PROCEDURE:

1. When a transfusion reaction is suspected, the Nursing personnel that observe the symptoms will do the following:
   a. If a transfusion reaction is suspected, the transfusion should be stopped immediately to limit the volume of blood infused.
   b. All labels, forms and patient identification should be checked to determine whether the transfused component was intended for the recipient.
   c. An intravenous line should be maintained with normal saline (0.9% sodium chloride), at least until a medical evaluation of the patient has been completed.
   d. The transfusion service and the patient's physician should be notified immediately. A responsible physician should evaluate the patient to determine whether a transfusion reaction is a possibility, what kind it might be, and what immediate actions should be undertaken.
   e. Record post transfusion vital signs.
   f. Collect post transfusion urine specimen and send it to lab.

2. Laboratory staff will provide Nursing with the Transfusion Reaction Investigation form, which nursing personnel will complete with the symptoms observed and the vital signs of the patient pre and post transfusion as well as document the recheck of the clerical of the unit and paperwork.
3. Laboratory staff will collect a post reaction blood specimen. The specimen must be carefully drawn to avoid mechanical hemolysis, and be properly labeled.
4. Nursing will send the entire blood transfusion unit with attached administration set with the completed copy of the Transfusion Request and Documentation form and the Transfusion Reaction Investigation form to the Blood Bank immediately.
5. Upon notification of a possible transfusion reaction, the Laboratory Staff will do the following:
   a. Take a copy of the Transfusion Reaction Investigation form to the Nursing unit.
   b. Collect post transfusion blood specimen and label according to protocol with the notation "post specimen" on the label.
   c. Upon receipt of the paperwork and unit from the Nursing Service, the Blood Bank will do the following:
      i. Compare all clerical information to check for correctness and completeness. This includes checking each patient sample and the blood component(s) for errors. If an error is discovered, the Medical Director must be notified immediately and a search of the appropriate records will be undertaken to determine whether misidentification or incorrect issue of other specimens or components has put other patients at risk.
      ii. The serum or plasma in a postreaction blood specimen must be inspected for evidence of hemolysis and compared with a prereaction sample, if available. Pink or red discoloration after but not before the reaction suggests destruction of red cells and release of free hemoglobin. Hemolysis resulting from poor collection technique or other medical interventions can cause hemoglobinemia; if faulty sampling is suspected, examination of a second specimen should resolve the question. Hemoglobin degradation products, especially bilirubin, may be in the bloodstream and cause yellow or brown discoloration. An increase in bilirubin may begin as early as 1 hour after reaction, peak at 5-7 hours and disappear within 24 if liver function is normal.
      iii. Perform a DAT and ABO
      iv. Repeat entire Type and Screen and Crossmatches if positive DAT, hemolysis or icteric specimen or clerical error.
      v. If temperature elevate >4 degrees do bacterial studies.
      vi. If TRALI notify OneBlood.
6. Record all work performed. Notify pathologist immediately.
7. Pathologist will review findings and interpret results.

REFERENCE:

AABB Technical Manual

TO BE COMPLETED BY NURSING PERSONNEL

SUBMIT THIS COMPLETED FORM TO THE BLOOD BANK PROMPTLY ALONG WITH THE ASEPTICALLY SEALED BLOOD CONTAINER AND IF POSSIBLE WITH THE ADMINISTRATION SET STILL ATTACHED.

Shaking Chills_____ Urticaria_____

Fever (>2°F+)_____ Nausea_____

Other_____

Donor No._____

Component_____ Amt. Infused_____

	Pre	Post
Temp		
B.P.		
Pulse		

The patient's name and blood bank number on the patient's wristband, transfusion service requisition and container labels are: ☐ In agreement ☐ Not in agreement

_____ _____RN

Date Signature

TO BE COMPLETED BY PATHOLOGIST

Interpretation

TO BE COMPLETED BY BLOOD BANK PERSONNEL

Date / Time: Unit Issued_____ Reaction Noted_____ Unit Returned_____

CLERICAL CHECK: Container labels and Compatibility Records Are ☐ In agreement ☐ Not in agreement

Remarks:_____

	Hemolysis	Icterus	DAT	CC	Interpretation
Pre-transfusion specimen					
Post-transfusion specimen					

VISUAL KEY

P means present

NP means not present

P&I means present and increased

Key to Symbols: See Policy and Procedure

SPECIMEN	Antisera					Cells		ABO&Rh	Antibody Detection																	
									IS				Enhanced 37°C				AHG									
	A	B	D	DU	CC	A	B	Interp.	I	II	III	AC	I	II	III	AC	I	CC	II	CC	III	CC	AC	CC	Interp.
Pre transfusion																										
Post transfusion																										
Donor #																										
Donor #																										

SPECIMEN	Major Crossmatch				
	IS	Enhanced 37°C	AHG	CC	Interp.
Pre trans. + Donor #					
Post trans. + Donor #					
Pre trans. + Donor #					
Post trans. + Donor #					

Bilirubin (5-7 hrs. post transfusion)_____

Urine for Hb (pre)_____ (post)_____

Visible hemolysis in Blood Container_____

Blood Culture set up:_____

Blood Culture results:_____

Other Tests (as indicated by Pathologist)_____

_____

_____

_____ _____

Technologist Date Pathologist Date

Highlands Regional Medical Center

8351330

TRANSFUSION REACTION INVESTIGATION REPORT

HRMC-606 (Rev. 03/11)

PATIENT IDENTIFICATION

Highlands Regional MEDICAL CENTER

Policy Name: Transfusion Investigation **Department:** Blood Bank-Lab

Departmental Review: **Policy #:** B2.0

INITIATE DATE	DATE REVIEWED/REVISED	PAGE 3 of 3
04/2009	06/2013	

Reviewed by	Reviewed Date	Reviewed by	Reviewed Date
	5-19-15		
	5-27-15		
	5-28-15		

Initial Implementation Date: _____

Reviewed by: S Bowen Date: 7/10/13
Department Supervisor

Reviewed by: Angela Lawton Date: 7/8/13
Department Adm. Director

Reviewed by: _____ Date: _____
Department Chief Technologist

Reviewed and Approved by: _____ Date: 7/8/13
Department Medical Director