PROCEDURE

Title: ABO Discrepancy

Procedure #: 2015BLOODBANK53

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: 10/25/2013

Review of procedure every two years

Reviewed by: _____ Date: _____

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Reviewed by: _____ Date: _____

Discontinued testing date: _____

Highlands Regional MEDICAL CENTER

Policy Name: Resolving ABO Discrepancy **Department: Blood Bank**

Departmental Review: **Policy #:**

INITIATE DATE **DATE REVIEWED/REVISED** **PAGE 1 of 4**

10/25/13

PURPOSE:
A discrepancy exists when the forward grouping do not agree with the reverse grouping. Discrepancies are usually caused by unexpected negative or positive results in either forward or reverse typing. Unusual reactions must be resolved before releasing or issuing blood. The purpose of this policy is to resolve ABO discrepancy by performing certain tests and investigations.

POLICY:
When a discrepancy is encountered, further testing and investigation must be performed. ABO type must be delayed until the discrepancy is resolved. It may be necessary to transfuse O red cells and or AB plasma pending the investigation.

PROCEDURE:

1. Check for technical errors.
   a. Specimen mix-up
   b. Too heavy or too light red cell suspension
   c. Failure to add reagents
   d. Missed observation of hemolysis and weak positive reactions
   e. Failure to follow manufacturers procedure
   f. Under or over centrifugation
   g. Incorrect interpretation or reporting

2. Repeat the test using the same sample to eliminate technical error.

3. Order a second draw of sample and repeat typing to confirm that the correct patient was drawn.

4. Check for transfusion history, disease processes (leukemia, bacterial infection, multiple myeloma, immunocompromised), medication (high dosage of protein), organ transplants.

5. Check for weak reacting subgroups such as weak A groups with an anti-A_1. Red cells of group A and AB individuals should be tested with *Dolichos biflorus lectin*, which will react with A_1 and weaker A subgroups.

6. If discrepancy exists enhancing method may be used.
   a. Wash red cells with saline to remove unwanted interfering substances. Warm saline is used to wash cells to eliminated alloantibodies causing false positive reactions at room temperature or colder.
   b. Use saline replacement to eliminate rouleaux. Mis 2 drops of plasma to 3 to 4% red cells suspension spin dawn. Remove plasma and replace with equal amount of war saline, spin down and observe for agglutination. A rouleaux formation will be dispersed by saline while a true agglutination will not.
   c. If unexpected reaction is observed in the reverse grouping, perform a mini cold panel to check for cold reacting antibodies. If positive, incubate tests for reverse grouping at cold temperature for 15 to 30 minutes before centrifugation.
   d. Use enzyme treated red cells.

SPECIMEN:
All pertaining documentation of patient
Patient plasma
Patient red cells suspension

REAGENTS:
ABD/Monoclonal Reverse Gel card
Typing sera
Saline Solution Test tubes

QUALITY CONTROL:
Quality control is done daily as per HRMC blood bank policy. Additional quality control may be needed for some procedures such as when performing test for A_1 or cold agglutinin screening. Written procedure must be followed as per policy.

REPORTING RESULTS:
When ABO discrepancies are resolved, report patient blood type as per policy. If blood product is needed, select blood product according to specific blood type of patient.

PROCEDURE NOTES:

The ABO system consists of A, B, AB and O blood types. These blood types are determined by the presence or absence of the A and B antigens. Also, the system is characterized by the presence or absence of the A and B antibodies. It is believed that the immunizing sources for such naturally occurring antibodies are gut and environmental bacteria. ABO discrepancies may arise from extrinsic factors (clerical and technical errors) as well as intrinsic factors (presence of weak reacting antibodies such as A_2, cold reacting antibodies or even the total absence of the expected antibodies). Age is also a factor causing false reactions. Infants up to 6 months cannot be reverse typed since this age group does not have the corresponding antibodies in their blood. Antibodies can also give false negative reaction because of old age or weakened immune system. Patients that receive HPC transplantation with induction tolerance can give an ABO discrepancy. Recent transfusion of out of group plasma containing blood components could give false reactions. Medications such as intravenous globulin (IVIG) which contains ABO isoagglutinins can also cause false reactions. High serum protein concentrations can cause nonspecific aggregation or agglutination.

REFERENCES:

AABB Technical Manual Chapter 12

ABO, H, and Lewis Blood Groups and Structurally Related antigens by Laura Cooling, MD,MS, Associate Professor, Dept. of Pathology and Associate Medical Director, Transfusion Medicine, University of Michigan

Highlands Regional MEDICAL CENTER

Policy Name: **Resolving ABO Discrepancy** **Department:** **Blood Bank**

Departmental Review: **Policy #:**

INITIATE DATE **DATE REVIEWED/REVISED**

Reviewed by	Reviewed Date	Reviewed by	Reviewed Date
	8·6·14		
	5.27.15		
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Initial Implementation Date: _____

Taken out of Service: _____

Reason: _____

Reviewed by: _____ Signatures on file _____ Date: 10/25/13

Department Supervisor

Reviewed by: Angela Lawter Date: 10/25/13

Department Adm. Director

Reviewed by: _____ Date: _____

Department Chief Technologist

Reviewed and Approved by: _____ MD Date: 10/25/13

Department Medical Director