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Document Contact	Kelly Sartor: Supv, Laboratory
Area	Laboratory-Blood Bank
Applicability	All Beaumont Hospitals

Handling of Patients with Anti-U

Document Type: Procedure

I. PURPOSE AND OBJECTIVE:

This document will provide policies used to provide RBCs and document patient and unit antigen typing results for patients with anti-U.

II. PRINCIPLE:

Patients who develop anti-U are usually African American whose RBCs type as S-s-. The plasma may appear to be pan-reactive but will likely be non-reactive with S-s- test RBCs. Assistance from a reference laboratory is typically required to rule out other clinically significant antibodies and to confirm the presence of anti-U. Molecular genotyping will be performed to determine whether the patient's RBCs are U negative or U variant. In some cases, molecular testing of the donor unit may be required. Patients may develop anti-U if their RBCs are U negative, or if their RBCs are U variant (similar to the development of anti-D in a patient with partial Rh(D) RBCs).

III. POLICIES:

A. **Genotyping of Patient RBC's Required**
Genotyping of the patient RBC's should be performed on all patients with anti-U or suspected anti-U. This testing may be performed by Versiti - Wisconsin. The patient's sample should be submitted to Versiti - Michigan via the Versiti Reference Lab or the send outs department. A report will be emailed or faxed directly to the Blood Bank.

B. **Documentation of Patient Molecular Testing / Transfusion Requirements**

1. Upon receipt of the genotyping, if the patient's RBCs are U negative by molecular testing:

a. The anti-U antibody will be added to the patient's computer record.

b. The UNM (U Negative Molecular) special message will be added under Patient / Edit / Messages.

c. RBCs transfused to the patient must be U negative, as determined by molecular methods.

2. If the patient's RBCs are U variant by molecular testing:

   a. The anti-U variant antibody will be added to the patient's computer record.

   b. The UVM (U Variant Molecular) special message will be added under Patient / Edit / Messages.

   c. RBCs transfused to the patient may be either S-s- by serological methods **or** U negative by molecular testing. Refer to the *Documentation of "U Negative" Donor Units from Blood Suppliers* section of this document.

3. If U molecular testing of the patient's RBCs is incomplete for any reason:

   a. The anti-U antibody will be added to the patient's computer record.

   b. RBCs transfused to the patient must be U negative, as determined by molecular methods.

   c. If the patient's RBCs are later determined to be U variant, then the anti-U antibody will be deleted, the anti-U variant antibody will be added, and RBCs should be transfused as described above.

C. **Documentation of "U Negative" Donor Units from Blood Suppliers**

Blood suppliers may have varying policies for providing RBCs for patients with anti-U and for labeling units on which U testing has been performed. Therefore, the Blood Bank must request documentation from the supplier indicating the method by which the U antigen status was determined. If this information is not received, the Blood Bank should request the information to be faxed and may then handwrite this information on the unit antigen tag.

The Blood Bank must then document the antigen type in the computer based on this information as shown below:

Blood Provider U testing method		**Document Unit's Antigen Status in Blood Bank Computer as:**
Anti-U reagent		UVAR Negative
Molecular U testing	U Negative by molecular	U Negative
	U Variant by molecular	UVAR Negative
S-s- unit based on serologic testing		UVAR Negative

1. When units that are to be documented as U negative are received into inventory, the U antigen negative type will be added as described in the Blood Bank CDM - Add / Delete / Edit / Display Unit Antigens.
   Note: In order to document units as U negative the Blood Bank must receive

documentation from the reference laboratory, either on the unit label or the packing slip, that the unit was U negative by molecular methods.

2. When units that are to be documented as U variant are received into inventory, the U variant antigen (Ss) negative type will be added as described in the Blood Bank CDM - Add/ Delete/ Edit/ Display Unit Antigens. It may seem counterintuitive to document units as U variant negative when the reference laboratory finds them to be U variant, but it is very important to document them this way in order for the computer logic to work correctly. The documentation of a unit as U variant negative means that:
    a. The unit is S-s- (as determined by antigen typing or a reference laboratory), or
    b. The unit is U negative with **unlicensed** antisera, or
    c. The unit is U variant by molecular methods.
    Under no circumstances should units be documented in the computer as U variant positive. If a unit is incorrectly documented as U variant positive, computer warnings will be generated when selecting and issuing the unit.
3. The unit should be labeled to correspond to the computer documentation. For example:
    a. If the computer indicates that the unit is U negative, the unit should be physically labeled as U negative.
    b. If the computer indicates that the unit is U variant negative, the unit should be physically labeled as U variant negative.

D. **Summary of Policies Specific to Patients with Anti-U**

Patient's U Antigen Status (Special Message entered)	Patient Antibody	Acceptable RBCs for Transfusion
UNM - patient's RBCs are U negative by molecular methods	Anti-U	Unit documented in Soft as U negative and proven to be U negative by molecular methods.
UVM - patient's RBCs are U variant by molecular methods	Anti U Variant	Unit documented in Soft as U variant negative, indicating that the unit is S-s-, U negative using unlicensed antisera, or U variant by molecular methods Alternative: Unit documented in Soft as U negative and proven to be U negative by molecular methods. Note that this will generate a computer warning.
No special message - Patient genotyping RBCs not yet tested	Anti-U	Unit documented in Soft as U negative and proven to be U negative by molecular methods.

IV. NOTES:

A. As described in this document, it is acceptable to transfuse a U negative unit to a patient with the anti-U variant antibody. Note, however, that a computer warning will be generated when the unit is selected and issued. This warning is expected, because the patient has the anti-U

variant antibody and the unit is not documented as U variant negative (it is U negative, a perfectly acceptable alternative). This warning message should be answered accordingly.

Attachments

Handling of Patients with Anti-U Job Aid.pdf

Approval Signatures

Step Description	Approver	Date
	Vaishali Pansare: Chief, Pathology	11/17/2022
	Kristina Davis: Staff Physician	11/10/2022
	Muhammad Arshad: Physician	11/9/2022
	Ann Marie Blenc: System Med Dir, Hematopath	11/8/2022
	Jeremy Powers: Chief, Pathology	11/4/2022
	Ryan Johnson: OUWB Clinical Faculty	11/3/2022
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