Pathology Checklist for RBC Exchange

Document created by VUMC Blood Bank Faculty 2017

Target Audience: Pathology house staff

Background: Emergent RBC exchange procedures can occur 24/7. This checklist is designed to enable pathology residents to ensure adequate documentation and assessment for RBC exchange procedures.

Who?

1. RBC exchange procedure requests can occur in all patient categories. For patients with low blood volume (≤20 kg) the risk of elevated extracorporeal volumes exceeding a safe threshold can necessitate discussion of alternative practices (automated RBC exchange versus manual exchange versus simple transfusion).

2. Although RBC exchange is most frequently identified as a therapeutic option for patients with sickle cell disease complications, the use of RBC exchange has clinical utility in other non-sickle cell disease entities.
   a. Erythropoietic Protoporphyria
   b. Methemoglobinemia
   c. Tacrolimus toxicity

What?

1. Performing an automated RBC exchange on any patient will require adequate documentation. This includes:
   a. A formal consult request from the treating team. This needs to be ordered by them. This will trigger a page to the on-call pager. This order is visible in the electronic medical record.
   b. A consent for blood product administration. This should be obtained by the primary team. It needs to be documented.
   c. A consent for the procedure. This should be obtained by the transfusion medicine team. The consent for an apheresis procedure can be obtained on the 7 South Dialysis floor, or alternatively on the VUMC blood bank website.
   d. After hour procedures will require notification of the on-call dialysis RN. This can be accomplished by contacting the VUMC page operator (615)322-5000.
   e. Calculating the number of RBC units needed for a procedure. A free iPhone App (RBC exchange) can help you identify the volume needed for a procedure. This will require knowing:
      i. Height/weight/gender/current HCT/goal HCT/current hemoglobin S level/goal hemoglobin S level
1. Hemoglobin S levels may not be available 24/7. When consulted afterhours immediately inquire if this laboratory value has been ordered, pending, performed. Contact esoteric chemistry (615-343-9067)

2. If the Hemoglobin S levels is not known/pending, then discuss with your attending to determine if historical data can be used or if a technician needs to be called into perform the test.

f. A valid type and screen is required for issuance of RBC products used in a RBC exchange. A type and screen is valid for 72 hours.
   i. The number of units needed should be communicated to the VUMC blood bank ASAP (615-322-2233). Units can be screened for in the current internal inventory or requested from an outside blood provider. Notifying the attending on call which process is taking place will help to ascertain when the procedure will likely commence.

g. Vascular access. Typical emergent procedures will require ICU/IR placement of a vascular catheter. Providers placing lines for this procedure will independently obtain consent for line placement. Radiographic confirmation of line placement prior to initiating the procedure should be obtained. Images can be discussed directly with a radiologist if there is a concern. The radiology reading room is located on the 1st floor of the main hospital.

h. Documentation: must include complete HPI, minimum of 2 ROS, PMHx, minimum 5 physical exam findings, and plan.

When?

These procedures are available 24/7. However, the time from consultation to procedure start can vary depending on individual circumstances. Multiple limitations can exist, and these should be communicated to the treating team when appropriate. Any procedure performed in the ICU should commence only after the ICU clinical team has been notified that an extracorporeal procedure is beginning. It is appropriate to discuss with TM attending and consulting team whether the procedure is truly emergent or can wait until normal business hours.

Where?

Emergent / urgent RBC apheresis procedures should take place in the age appropriate ICU setting.

Why?

Review of current evidence based medical practices should be considered for any invasive medical procedure. Apheresis guidelines for RBC exchange in sickle cell disease can be identified at Journal of Clinical Apheresis 2016;31:149-338. It is on page 305-307

Do I need to be present for the entirety of the procedure?
This depends on the acuity of the patient and is something you should discuss with TM attending. It is important to directly assess the patient before procedure. Your contact information should be provided to the clinical team and the apheresis RN for all cases.

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<thead>
<tr>
<th>Disease name</th>
<th>TA Modality</th>
<th>Indication</th>
<th>Category</th>
<th>Grade</th>
<th>Page</th>
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<tbody>
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<td>RBC Exchange</td>
<td>Acute stroke</td>
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<td>1C</td>
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