Should RBCs used for intrauterine transfusion be washed and/or adjusted to a high hematocrit?

A blood banker reports that her transfusion service has begun to provide RBC units for intrauterine transfusion. A perinatologist at the inquiring blood banker's hospital has requested that the RBC units intended for intrauterine transfusion be **leukocyte reduced, irradiated, and CMV-negative with an adjusted hematocrit of 80-85%**. The inquiring blood banker's hospital has asked their regional blood donor center to provide the units per their perinatologist's specification, but have met resistance. Apparently, the regional donor center has been providing blood for intrauterine transfusions to other hospitals in the larger metropolitan area that are neither adjusted for hematocrit nor washed. This resistance presents a problem since the usual CPDA-1 leukocyte reduced unit provided by the regional blood donor center averages about 60-64%, and the units are not washed. The inquiring blood banker is obviously frustrated about this situation and wants to know what other colleagues are providing for intrauterine transfusions.

As the e-network ponders the above conflict, the following links may be of general interest:

- Neonatal Transfusion Practice
- Concerns about potassium toxicity in transfusing low birth weight neonates
- UCLA Transfusion Medicine Manual (currently unavailable while under revision)
- Strauss RG. Data-driven blood banking practices for neonatal RBC transfusions (Transfusion, 2000)
- Pediatric Transfusion Guidelines - a resource

The following replies were submitted in response to the above question

ADDENDA Oct. 28, 2002

1. **A blood banker in the Southern USA** wrote that they recently went through some turbulence after learning that CPDA-1 units supplied to them by their regional blood center had unacceptable hematocrits for their neonates. The hospital has a policy that RBC units used for both intrauterine and neonatal exchange transfusion be less then 3 days old, irradiated, CMV seronegative, Hb-S negative and with a hematocrit of 50% (or as requested by the attending physician). After explaining their policy and reasons behind it to their regional Blood Center, they agreed to the hospital's request. Currently, when units for intrauterine or exchange transfusion are requested, the blood bank technologists inform the blood center. The blood center adjusts the hematocrit of the RBC units to comply with the hospital's request. Upon receiving the RBC unit, the hospital checks the hematocrit in their lab before issuing for transfusion, to assure the hematocrit has been adjusted properly.

2. **A blood banker in New York** was surprised that a regional blood center would question a request for a high hematocrit RBC unit for an intrauterine transfusion (IUT). According to the New Yorker, it is standard practice for IUT (to reduce the volume) to give RBCs of "high" hematocrit, since transfusions with increased volume are far less efficient and lead to increased bradycardia. The New Yorker wondered if there are official recommendations emanating from maternal-fetal medicine or ACOG?

ADDENDA Oct. 30, 2002

3. **A physician in the UK National Blood Service** reports that in England, red cells for IUT are not washed. Red cells are left suspended in plasma (ie not additive medium such as Adsol) and the haematocrit adjusted to 80% to permit the transfusion of as many red cells as possible in the volume which can be tolerated by the fetus.

Please submit comments to the e-Network Forum.

Ira A. Shulman, MD

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CBBS e-Network Forum Editor & Moderator

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