Guideline for Washed Red Blood Cells in Nova Scotia

October 2011
Acknowledgements

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BACKGROUND

The Nova Scotia Provincial Blood Coordinating Program (NSPBCP) was created in January 2003 by the Department of Health. The NSPBCP provides leadership in collaborating with health care providers across the province and Canadian Blood Services (CBS) in order to maximize the safe and appropriate management of blood and blood products for patients in Nova Scotia. The NSPBCP also maintains a surveillance program for adverse events related to transfusion therapy while ensuring appropriate standards for blood-transfusion therapy are being implemented and maintained within Nova Scotia health-care facilities.

Cellular blood components (RBCs) can be washed “to remove substances (antibodies, serum proteins such as IgA, additive solutions, increased levels of electrolytes-in particular potassium, other cellular metabolites or cytokines) which may be harmful for some transfusion recipients”. (CBS, 2007. p. 150)

During a review of national rates for washing of red blood cells, it was determined that Nova Scotia has a high rate of washing red blood cells per capita with the main reason being a history of allergic reactions. Therefore, in an effort to support the appropriate use of washed red blood cells, a literature review was conducted. This information was presented to the Transfusion Medicine Advisory Group (TMAG) for Nova Scotia and the recommendations for appropriate use were determined.

DEFINITIONS

IgA Deficiency - Total IgA deficiency is defined as an undetectable IgA level at a value of less than 0.05 mg/dl (0.0005 g/l). (Palmer et al., p. 1527) (Lilic and Sewell, p. 337)

Supernatant of RBCs – The clear liquid remaining when a precipitate has settled after centrifugation. The supernatant contains anticoagulant, preservative and residual plasma. The product remaining after the removal of the supernatant may be referred to as Plasma Extracted Red Blood Cells or Supernatant-reduced Red Blood Cells.
**RECOMMENDATIONS FOR USE**

_Washed red blood cells may be recommended for the following patients:_

- Neonates undergoing exchange/massive transfusion (BCPBCO, 2007) (CBS Clinical Guide to Transfusion, p. 151)
- Intrauterine transfusions (Klein, Spahn, and Carson, p. 416)
- Patients with anti-IgA or patients with IgA deficiency with a history of severe allergic reaction when RBCs from an IgA deficient donor are unavailable (CSA – Z902-10. p. 35) (CBS Clinical Guide to Transfusion, p. 151)
- Patients with a history of severe reactions to blood components (unresponsive to premedication) (CBS Clinical Guide to Transfusion, p. 90)

The IWK and Cape Breton District Health Authority remove the supernatant in RBCs (anticoagulant, preservative and plasma) for the following situations: (IWK Laboratory - Red Cell Guidelines) (Cape Breton District Health Authority Laboratory SOP)

- intrauterine transfusions
- newborns receiving exchange/massive transfusions
- transfusions to patients less than 1 year of age

**CONTRAINDICATIONS**

_Washed red blood cells are not recommended for the following patients:_

- IgA deficient patients who have never been transfused (RBCs, plasma, platelets)
- IgA deficient patients who have not had an allergic reaction to RBCs, plasma or platelets
- Patients who are not known to have anti-IgA antibodies
- Patients who have not had severe reactions to red blood cells
REFERENCES:

AABB. Circular of information. Dec 2009

AABB. Technical Manual. 16th Edition


Cape Breton District Health Authority (CBDHA) - Laboratory Services - Standard Operating Procedure. Preparation of Red Cells for Preservative Removal. November 2010


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