

Date: November 14, 2013

To: South Zone
Neurologists, Hematologists, Nurse Managers, Educators and Practitioners, Laboratory Directors and Managers

From: AHS Laboratory Services - South Zone

Re: Reminder: Hemolysis - A Side Effect of Intravenous Immune Globulin Administration

PLEASE POST OR DISTRIBUTE AS WIDELY AS APPROPRIATE

Key Messages:

- South Zone Transfusion Medicine Service is reminding those clinicians who regularly order Intravenous Immune Globulin (IVIG) for their patients of its potential side effect of hemolysis.
- There is no way of predicting which patients will suffer hemolysis complications but there is higher risk when the patient has Type A or AB red cells and IVIG dosing is greater than 2 g/kg.
- This reminder is not meant to be a comprehensive coverage of the indications and side effects of this Blood Product.
- An IVIG-associated hemolytic reaction is one in which there is evidence of a new hemolytic process within 10 days of IVIG administration. The following laboratory signs must be present:
 1. A fall of at least 10 g/L in hemoglobin (Hb) **and**
 2. A positive Direct Antiglobulin Test (DAT) **and**
 3. At least two of the following:
 - Increased reticulocyte count
 - increased lactate dehydrogenase
 - low haptoglobin
 - unconjugated hyperbilirubinemia
 - hemoglobinemia
 - hemoglobinuria
 - presence of significant spherocytosis

Why this is important:

- In October 2009, Health Canada issued an adverse reaction newsletter describing hemolytic reactions associated with the administration of intravenous immune globulin.
http://www.hc-sc.gc.ca/dhp-mps/alt_formats/pdf/medeff/bulletin/carn-bcei_v19n4-eng.pdf
- This was shortly followed by the first customer letter from Canadian Blood Services describing this undesirable side effect:
[https://www.blood.ca/CentreApps/Internet/UW_V502_MainEngine.nsf/resources/CustomerLetters09/\\$file/CL_2009-02.pdf](https://www.blood.ca/CentreApps/Internet/UW_V502_MainEngine.nsf/resources/CustomerLetters09/$file/CL_2009-02.pdf)
- After further study of the issue, Canadian Blood Services (CBS) issued another Customer letter in 2011
[https://www.blood.ca/CentreApps/Internet/UW_V502_MainEngine.nsf/resources/CustomerLetters2011/\\$file/CL2011-34.pdf](https://www.blood.ca/CentreApps/Internet/UW_V502_MainEngine.nsf/resources/CustomerLetters2011/$file/CL2011-34.pdf)
- IVIG associated hemolysis has more recently been cited in a 2012 issue of New England Journal of Medicine: <http://www.nejm.org/doi/full/10.1056/NEJMc1205644>
- Canadian Blood Services definition of IVIG hemolysis is based on the International Society of Blood Transfusion (ISBT) 2006 definition of hemolytic transfusion reaction, with some modifications.

Action Required:

- Monitoring for hemolysis by ordering Hemoglobin (Hb) and Direct Antiglobulin Test (DAT) during or after IVIG administration in higher risk settings is suggested for its detection.

Inquiries and feedback may be directed to:

- Dr. David Lyon, Pathologist, Chinook Regional Hospital Laboratory at: 403-388-6151

This bulletin has been reviewed and approved by:

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