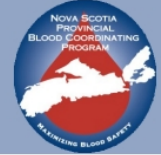


Blood Counts



Volume 9, Issue 1, January 2012

Blood Matters - An Educational Event

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The Nova Scotia Provincial Blood Coordinating Program (NSPBCP), Canadian Blood Services (CBS) and the QEII's Perioperative Blood Management Program (PBMP) collaborated to host its 2nd annual Blood Matters education day on November 4, 2011. Medical Laboratory Technologists, RNs and LPNs, and physicians from Nova Scotia and Prince Edward Island totaled 94 in attendance. Attendees received 5.50 CMEs from Dalhousie Continuing Medical Education.

Ten speakers presented topics related to transfusion medicine which covered a range of topics such as the importance of warming blood in massive transfusion, patient notification and disclosure of adverse events, IVIG hemolytic reactions, transfusing appropriately, and patient alternatives to blood transfusion. Canadian Blood Services informed participants of the plans to establish

a National Public Cord Blood Bank in Canada which segued into the role of HLA testing in bone marrow transplantation, requests for HLA and Rare Phenotypes and some interesting antibody identification cases.

Attendees also learned that in Asian countries blood types are viewed as predictive of a person's personality, temperament and compatibility with others similar to how astrological signs are used in Western culture. While there is no supporting scientific evidence, it was entertaining. (See page 2 and 3)

Based on the evaluations we consider the day a great success and look forward to our 3rd annual collaborative session in the fall of 2012. If there are any topics that would be of interest please let us know by emailing us at nspbc@cdha.nshealth.ca.

Peggy Wilson
Transfusion Practice Coordinator/Surveillance



Dosing Intravenous Immune Globulin (IVIG) Based on Adjusted Body Weight

Type O

You are the social butterflies. Often popular and self-confident, you are very creative and always seem to be the center of attention. You make a good impression on people and you're often quite attractive.

Organized and determined, your stubbornness will help you reach your goals. You make good leaders. Love wise, O is most compatible with O and AB. Common career choices: banker, politician, gambler, minister, investment broker and pro athlete.

Type A

Type A's may seem calm on the outside, but inside, you're filled with anxiety and worry. You're perfectionists and often shy and sensitive. Usually introverted, you're stable and thoughtful.

You make good listeners and are sensitive to color and your surroundings. You like to be fashionable and are up on the latest trends, but never flashy or gaudy. You like romantic settings and often shun reality for fantasy worlds. A is most compatible with A and AB in the love department. Common career choices: accountant, librarian, economist, writer, computer programmer and gossip columnist.

The Nova Scotia Provincial Blood Coordinating Program (NSPBCP) leads a collaborative initiative for optimizing the utilization of blood and blood products in the Atlantic Provinces. Since its inception in January 2003, IVIG has been a product of focus. Utilization management is based on assessing whether the appropriate product most beneficial to the patients' condition is being used according to evidence-based recommendations and has been proven cost-effective.

Adverse reactions like haemolysis due to IVIG are substantially more likely to happen when a high dose of the product is infused (Zohra, 2008). Most of the disease indications using IVIG are treated with an arbitrary dose of 2g/kg body weight (Kuitwaard, 2009). Actual body weight needs to be used for calculating the dose of drugs that are fat soluble. Ideal body weight is recommended for the dose calculations of drugs with low lipid solubility. The dose of IVIG administered depends on the weight of the patient, but since immunoglobulin is not lipid soluble the ideal body weight needs to be taken into account instead of actual body weight (Siegel, 2009). In obese patients there is an increase in the volume of distribution, due to the increased volume of body fluids; therefore an adjusted body weight is recommended to be used to account for the increased volume of distribution into the extra body fluids of obese patients with out accounting for the increase in fat (Siegel, 2009).

Australia and some hospitals in Ontario, British Columbia and Prince Edward Island are dosing IVIG based on adjusted body weight instead of actual weight. In consultation with clinical experts in Nova Scotia and the Blood Transfusion Services Management team implementation of a pilot project is soon to be underway at Capital District Health Authority (CDHA). IVIG will be dosed based on adjusted body weight for adult patients with Neurological, Haematological and Immunological conditions.

A pre-printed physician's order form for IVIG has been revised to include the patient's gender, height and actual weight. An online calculator is available at www.gov.ns.ca/health/nspbcg.

This calculator calculates IVIG dose based on adjusted body weight when patients actual weight, height and prescribed dose are typed into it. The dose is to be calculated by the physicians using the online calculator. This total dose IVIG in grams based on adjusted body weight along with the dosing details are marked on the pre-printed order forms. The height, gender and actual weight of the patient need to be reported in addition to all the previously required reporting. The Catabolism of the Immunoglobulin is variable depending on the disease activity in every individual (Kuitwaard, 2009) therefore if the dose is repeated as a response to the lack of expected clinical outcome then this information needs to be included on the order form. The results of the pilot will be reviewed and shared at the end of the pilot period.

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- Kuitwaard K, de Gelder J, Gilleen AP, Hop WC, Van Gelder T, van Toorenbergen AW, van Doom PA, Jacobs BC. Ann Neurology 200;66(5);569-70
- Siegel J. 2009. Intravenous immune globulins: therapeutic, pharmaceutical, administration, and cost consideration. Pharmacy Practice News Special edition. 20-27
- Zohra Daw, Ruth Padmore, Doris Neurath, Nancy Cober, Melanie Tokessy, Diane Desjardins, Bernhard Olberg, Alan Tinmouth, Antonio Giulivi. Hemolytic transfusion reactions after administration of intravenous immune (gamma) globulin: a case series analysis. Transfusion August 2008, Volume 48, Issue 8, pages 1598-1601,

Tabassum Ata Quraishi
Utilization Management Coordinator

Construction of New Dartmouth Blood Production And Distribution Centre Well Underway!

Later this year, Canadian Blood Services will open a newly constructed production and distribution centre located in Dartmouth. Blood collections from donor clinics held in the Maritime Provinces will be shipped to this facility for processing into blood components (red cells, platelets, plasma, and cryoprecipitate). The finished products will then be shipped to hospitals in New Brunswick, Nova Scotia and Prince Edward Island.

With the exterior finishes in place and paving and landscaping done, this new Dartmouth Production and Distribution Centre—located on John Savage Drive in the Burnside Industrial Park, Dartmouth—has taken on a near-completed look. Work on the interior finishes is well underway, and the walk-

in refrigerators and freezers that will hold the blood products are installed.

An information package about the new facility is being prepared for all Maritime hospitals. In addition, we are currently developing order and delivery guidelines and schedules for hospitals served by the Dartmouth Production and Distribution Centre. We will continue to keep you updated with our move plans and hospital delivery-related details as this information becomes available, and will be holding individual meetings with hospitals as well as regional meetings.

Need more information? If you have any questions on the new production and distribution site in Dartmouth, or any other topics relating to Canadian Blood Services, please contact:

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Type B

You can be very goal-oriented and often complete the ambitious tasks set before you.

Outgoing and very charming, you're good at reading people and providing support.

Though critical of appearance (but not your own), you are not picky and are unlikely to sweat over the little things. Type B's are impulsive individualists who often create their own path in life. You are very strong and optimistic. B is most compatible with B and AB lovers. Common career choices: cook, hairdresser, military leader, talk show host and journalist.

Type AB

Not surprisingly, AB's can be quite dualistic, possessing both A and B traits. You may be shy and outgoing, and hesitant and confident. You often stand out from others, don't like labels, and are nice and easy going. You are logical and determined to do things correctly. Usually trustworthy, you like to help others. You often speak in a serious manner. Your patience, concentration and intelligence are admirable. AB can find a soul mate with any other blood type.

Common career choices: bartender, lawyer, teacher, sales representative and social worker.

When Is It Appropriate to Use Washed Red Blood Cells?

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 regarding the use of washed red blood cells, it was determined that Nova Scotia had a high rate per capita with the main indication being a history of allergic reactions. In an effort to support the appropriate use of washed red blood cells, a literature review was conducted. The evidence was presented to the Transfusion Medicine Advisory Group (TMAG) and the recommendations for appropriate use were established and are outlined below:

Washed red blood cells may be recommended for the following patients:

- Neonates undergoing exchange/massive transfusion (BCPBCO, 2007) (CBS, 2007, p. 151)
- Intrauterine transfusions (Klein, Spahn, & 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, 2007, p. 151)
- Patients with a history of severe reactions to blood components (unresponsive to premedication) (CBS, 2007, p. 90)

IgA Deficiency is defined as total IgA deficiency is defined as an undetectable IgA level at a value of less than 0.05 mg/dl (0.0005 g/l).

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

The complete guideline may be viewed on our website at www.gov.ns.ca/health/nspbcsp.

Sue Cairns

Utilization Transfusion Practice Coordinator

References:

1. BC Provincial Blood Coordinating Office. Transfusion Medicine Medical Policy Manual. 2007
2. Canadian Blood Services (CBS) (2007). *Clinical Guide to Transfusion* - Fourth Edition
3. Canadian Standards Association. C.S.A Standard Z902-10 Blood and blood components. (2010) Mississauga, Ontario
4. Klein, H. G., Spahn, D. R., Carson, J. L. Red blood cell transfusion in clinical practice. *The Lancet*. Vol 370, August 4, 2007

Nova Scotia's Tissue and Organ Surveillance System (TOSS)

At the start of the New Year, it's always so rewarding to be able to reflect on the accomplishments of the past twelve months. There is a lot to tell you about the activities of the Tissue and Organ Surveillance System (TOSS) Program, so without further ado, here are the highlights from 2011!

- Implementation of Regional Tissue Bank reporting of adverse events to tissues to the NSPBCP effective April 1, 2011. To date, there have been no transplantation adverse events reported for the first and second quarters of 2011. Further roll out of the reporting form is planned for 2012 and 2013.
- Led the development of an excel reporting tool for reporting transplantation adverse event data to the Public Health Agency of Canada (PHAC). This tool was developed in collaboration with the NSPBCP's Data Analyst and other members of the National TOSS Data Working Group which went live on April 21, 2011.
- Development of a patient education pamphlet for patients having surgery that involves receiving a human allograft tissue product. The pamphlet is in draft and implementation strategies are under development.
- Liaised with DHAs/IWK to identify all human allograft tissues imported into Nova Scotia for surgical use in order to ensure Health Canada's *Safety of Human Cells, Tissues, and Organs for Transplantation Regulations* are supported in Nova Scotia. Six of the ten jurisdictions import human allograft tissues for surgical use and all tissues are imported from Health Canada registered establishments.

We are looking forward to another busy year at the TOSS Program, with many projects in the works for the next twelve months.

Catherine Hiltz

TOSS Coordinator

Upcoming Events

AATB 16th Annual Spring Meeting San Juan, PR March 23, 2012

Canadian Society for Transfusion Medicine (CSTM) Conference Halifax, NS May 24 - 27, 2012

AATB 36th Annual Meeting Keystone, CO September 9, 2012

AABB Annual Meeting & CTTXPO 2012 Boston, MA October 6 - 9, 2012