

S.W.A.T. SURGERY WITHOUT ANEMIA OR TRANSFUSION

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BLOOD IN THE NEWS

▶ thestar.com

Fewer transfusions lowers costs, helps patients

May 05, 2008 "The best transfusion is the transfusion not given," Says Freedman, a professor of hematology at the University of Toronto. "Transfusion medicine.... Is undergoing a paradigm shift, from advocating blood transfusion to advocating transfusionless surgery."



Freedman is head of a program, running in 25 hospitals across Ontario, that has cut down dramatically on the amount of blood being transfused in this province—as much as 50 per cent or more for some procedures at some sites.

See the rest of the article at:
<http://www.thestar.com/News/Ontario/article/421446>

RECENT PUBLICATIONS

"The evidence for the use of recombinant factor VIIa in massive bleeding: development of a transfusion policy framework." Transfusion Med. 2008 Apr;18(2):112-20. Moltzan *et al.*

Duration of red-cell storage and complications after cardiac surgery. N Engl J Med. 2008 Mar 20;35(12):1229-39. Koch *et al.*

"CONCLUSIONS: In patients undergoing cardiac surgery, transfusion of red cells that had been stored for more than 2 weeks was associated with a significantly increased risk of postoperative complications as well as reduced short-term and long-term survival."

Blood conservation strategies to reduce the need for red blood cell transfusion in critically ill patients. CMAJ January 1, 2008 178(1) Tinmouth AT, LA McIntyre & RA Fowler

TRALI—Transfusion Related Acute Lung Injury

Q: My patient developed dyspnea, tachypnea and hypoxemia four hours after a transfusion. There were no signs of volume overload and the JVP was normal. The Chest xray revealed alveolar infiltrates and a normal cardiac silhouette. What could this be?

A: This is a serious transfusion adverse event. This may be TRALI—transfusion related acute lung injury.

Please turn the page and learn some more about the leading cause of transfusion related mortality in North America.

TRALI—Transfusion Related Acute Lung Injury

Respiratory complications can occur with transfusion. TACO (transfusion associated circulatory overload) occurs more commonly and there is clinical evidence of fluid overload. Respiratory complications without evidence of circulatory overload is a possible finding of TRALI or Transfusion Related Acute Lung Injury. The current occurrence rate is estimated to be about one in 5,000 transfusions. TRALI is currently the leading cause of transfusion related mortality in North America. Most cases occur when antibodies in the blood of some donors react with incompatible proteins in some recipients. The result is a reaction that can cause lung damage. These antibodies are most frequently found in multiparous females or from people who have had multiple transfusions. Transfusions with a high volume of plasma are associated with the majority of the TRALI cases. The Canadian Blood Services Consensus Conference on TRALI published in *Transfusion Medicine Reviews* 2005; 19(1): 2-31, "Proceedings of a Consensus Conference: Towards an Understanding on TRALI". The Consensus criteria for TRALI are:

Acute onset	During or within 6 hours of transfusion
Hypoxemia	No evidence of left atrial hypertension (circulatory overload)
No preexisting Acute Lung Injury	No temporal relationship to an alternative risk factor for Acute Lung Injury
Bilateral infiltrates on frontal chest radiograph	

It is imperative that medical personnel and hospitals identify suspected cases of TRALI and report them to the Canadian Blood Services Medical Director Dr Lane at 789-1079 daytimes. On evenings and weekends, page the Transfusion Medicine Physician on call thru HSC locating. Investigations on the patient and the blood donor must be initiated as soon as possible. By identifying cases of TRALI, CBS can take steps to prevent further cases of TRALI by removing companion components of units that may have caused the reaction and by investigating donors involved in these cases and deferring them from further donations if they are found to be implicated. Treatment of TRALI is supportive. Mild forms of TRALI may respond to supplemental oxygen therapy. Severe forms may require mechanical ventilation and ICU support. There is no role for diuretics or corticosteroids. The majority of patients recover within 72 to 96 hours.

It is unlikely that TRALI can ever be entirely prevented, but its frequency may be reduced by the judicious use of blood components only for indications that are justified based on sound medical evidence. Hospitals should have procedures in place (e.g. blood utilization guidelines, blood conservation programs) which minimize unnecessary transfusions. In addition, hospital medical staff must continue to have a high index of suspicion in order to diagnose TRALI appropriately. All cases of TRALI or possible TRALI should be reported to Canadian Blood Services who in turn is required to report all possible TRALI or possible TRALI cases to Health Canada. Changes have been made at the CBS to ensure that the safest products are available (See Customer Service Letter #2008-05). *This information was compiled from "Transfusion-Related Acute Lung Injury (TRALI)" By Tanya Petraszko, MD FRCPC and Heather Hume, MD FRCPC at <http://www.transfusionmedicine.ca/>, and from "Toward an understanding of transfusion related acute lung injury: statement of a consensus panel.", Kleinman, S. et al., *Transfusion*, 2004; 44:1774*

Additional clinical information may be obtained from:

Reaction by Symptom in the [Clinical Guide to Transfusion](#), p 83, and Dyspnea in the [Clinical Guide to Transfusion](#), pp 90-95

Both guides are accessible through <http://www.transfusionmedicine.ca/>

Further Information Regarding Primary TRALI Reduction Measures

Customer Letter—#2008—05

In March, 2008, Canadian Blood Services will start collecting plasma, for the preparation of Fresh Frozen Plasma, and Apheresis plasma (AFFF) from predominantly male donors. Plasma collected by apheresis from female donors will be redirected as Source Plasma (SP) and sent for further manufacture. **PLEASE READ THE ENTIRE CUSTOMER LETTER for additional details at <http://www.transfusionmedicine.ca/>.**

Additional TRALI Articles

What every physician should know about transfusion reactions. *CMAJ* July 17, 2007 177(2)

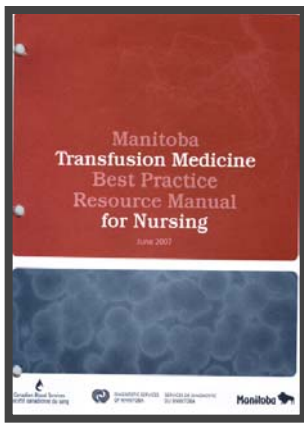
Transfusion-related acute lung injury. *CMAJ* July 17, 2007. 177(2)

Transfusion-related acute lung injury: a literature review *Anaesthesia* 2006 61(8):777-85

Transfusion-related acute lung injury. *J Intensive Care Med* 2008 23(2)-109

Transfusion-related acute lung injury (TRALI) – the preventable danger in intensive care? *Intensive care med* 2007 33; suppl 1

TRALI. A new Case Definition, a New Epidemic? *American Journal of Respiratory and Critical Care Medicine* 2007 176:839



Best Practice Manuals for Nursing and Blood Banks

A foundation for quality assurance within a transfusion medicine service is concise, accurate and up to date documentation and performance of “best practice”. As far as possible such practices should be consistent through out the province. Manitoba Health’s Provincial Blood Programs Office has facilitated the development of the Manitoba Transfusion Quality Manual for Blood Banks (June 2007, version 2) and the Manitoba Transfusion Medicine Best Practice Resource Manual for Nursing (June 2007, version 1) in collaboration with Canadian Blood Services, Regional Health Authorities and Diagnostic Services of Manitoba.

The manuals contain best practice guidelines and procedures for blood banks and nursing and are a resource for blood bank technologists and transfusion medicine nurses responsible for bedside care.

The guidelines and procedures, based on British Columbia’s Provincial Blood Office Technical Resource Manual for Hospital Transfusion Services (2000) and Clinical Transfusion Resource Manual (2002), were revised and edited by the Manitoba Transfusion Medicine Quality Improvement working group and the Manitoba Nursing working group.

The expert working groups were comprised of blood bank technologists, registered nurses, educators, professional licensing bodies and physician experts. Care was taken to ensure that both manuals are consistent with and complement each other.

In February 2008, the manuals were distributed to Diagnostic Services of Manitoba and Regional Health Authorities via identified contacts for implementation and orientation.

The development of both manuals were possible due the dedication and the expertise of our transfusion medicine colleagues. Financial assistance from the Public Health Agency of Canada is also gratefully acknowledged.

We hope these resources are useful to professionals in the provision of quality care to Manitobans.

Contact Information

Provincial Blood Programs Office, Manitoba Health, 300 Carlton St., Winnipeg, Manitoba R3B 3M9
Phone: 204-788-6353 E-mail: BloodPrograms@gov.mb.ca

Patients Who Decline Blood Transfusions in Major Surgery

Patients have the right to accept or decline medical & surgical treatments in an informed setting. Blood transfusions are a treatment that patients may decline. During the 1990’s many patients preferred not to receive blood because of the ‘Tainted Blood Scandal’ in Canada. Some ethnic and religious groups decline blood treatments as an expression of their beliefs.

We discuss the management of a patient who underwent an anterior resection of a carcinoma of the colon who declined blood transfusions.

Mr. X, a 61 year old, morbidly obese, hypertensive man, was first seen in the PAC by the WRHA blood conservation team in early December 2007. His surgery was scheduled in February. His regular medications included irbesartan, amlodipine and metformin. Physical examination was unremarkable. Laboratory work revealed hypochromic, microcytic anemia (hb 94 g/l, mcv 69.3). The patient refused any blood transfusion but consented with the treatment plan to optimize hemoglobin prior to surgery. Oral iron therapy (Ferrous sulphate 300 mg thrice daily) was initiated which he tolerated well with favorable response. Further he received Erythropoietin 40,000 units (albumin free) which increased his hemoglobin to 131 g/l (hct .44, mcv 75.7).

The patient subsequently underwent his surgery under general anesthesia with a thoracic epidural catheter for postoperative analgesia. Intraoperative fluid management included 2.5 L of crystalloids and 1L of synthetic colloid. Mr. X also received a single dose (30mg/Kg) of

Tranexamic Acid, an anti-fibrinolytic agent. All fluids were given through a standard fluid warmer and in addition his temperature was maintained with a forced convective air warming device. Intra-operative blood gas measurements provided serial measures of his hemoglobin as well as his acid base status. Surgery was completed with a blood loss of approximately 650 mL and the patient remained hemodynamically stable. Further postoperative course was uneventful and patient was discharged with a hemoglobin of 106 g/L.

The case highlights the need for reviewing and discussing blood management with patients early in their course of surgical management to allow time to formulate various treatment options, optimize the hemoglobin and prepare for surgery



Submitted by Dr. Hema Bagry

Hypochromic/Microcytic Anemia
Iron Deficiency



BloodyEasy 2 - The 10 Commandments

Adapted from the WHO 1998 recommendations for the clinical use of blood:

1. Transfusion is only one part of patient management.
2. Prescribing decisions should be based on national guidelines on the clinical use of blood, taking into account the needs of each individual patient.
3. Blood loss should be minimized (and blood conservation strategies considered*) to reduce a patient's need for transfusion.
4. A patient with acute blood loss should receive effective resuscitation (IV replacement fluids, oxygen, etc.) while assessing the need for transfusion.
5. A patient's hemoglobin value, although important, should not be the sole deciding factor in starting transfusion. The decision to transfuse should be supported by the need to relieve clinical signs and symptoms and to prevent morbidity and mortality.
6. The clinician should be aware of the risks of transfusion-transmissible infection (and non-infectious risks*) in the blood and blood products that are available for each individual patient.
7. Transfusion should be prescribed for a patient ONLY when the benefits outweigh the risks.
8. The clinician should clearly record the reason for the transfusion.
9. A trained health care professional should monitor the transfused patient and respond immediately if any adverse effects occur.
Informed consent for transfusion should be obtained prior to transfusion.*

*additional recommendations by the Blood Products Advisory Panel.

Lisa VanOsch, RN

Lisa joined the WRHA Blood Conservation Service in December 2008. She has 15 years nursing experience in Rehab, Neurosciences, PACU and ICU.

Lisa is a member of SABM and is BloodyEasy 2 Certified.

Lisa has recently joined HSC Toast Masters.

Upcoming Events

September 12-14, 2008

SABM's 7th Annual Meeting

Baltimore, MD

October 4—7, 2008

Joint CSTM AABB Annual Meeting & TXPO 2008

Montreal, Canada

November 3—7, 2008

Blood Management Awareness Week

Events are being planned for all WRHA Hospitals

Stay tuned for more information.

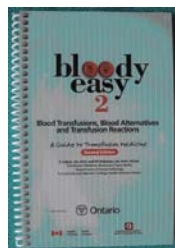
SWAT is going GREEN

We will not be making printed copies. Instead our newsletters will be available online in a PDF format for you to download and print.

<http://www.hsc.mb.ca/perioperative/professionals.htm>

Congratulations on BloodyEasy 2 Certification:

No certifications reported.



If you wish to be recognized for the completion of BloodyEasy 2

Please contact Esther Mark at 787-1277

www.sunnybrookandwomens.on.ca

We are on the web at :

www.hsc.mb.ca/perioperative

www.anemiainstitute.org

www.hc-sc.gc.ca/ahc-asc/activit/com/krever

www.transfusionontario.org

www.sabm.org

<http://www.cmaj.ca/cgi/content/full/156/11/DC1>



Winnipeg Regional
Health Authority

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santé de Winnipeg

Caring for Health
À l'écoute de notre santé

WRHA Blood Conservation Service

AE504-671 William Ave, Wpg MB R3A 1R9 - Phone: 204-787-1277 Fax: 204-787-4529

Dr. Brian Muirhead—Medical Manager

Susan Kenny— Service Manager

Glenda Klein—Nurse Coordinator Lisa VanOsch—Nurse Coordinator

Esther Mark— Secretary

Blood Conservation Service is a service of the Winnipeg Regional Health Authority