



Clinical Strategies to avoid blood transfusion

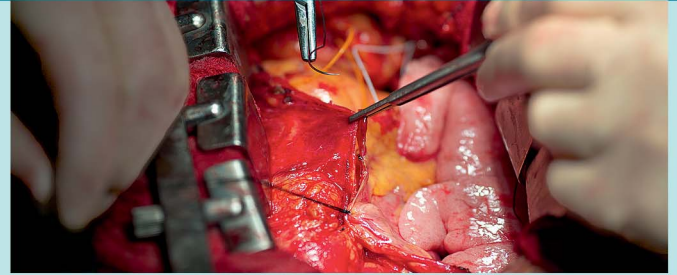
The avoidance of blood transfusion involves the optimized use of strategies **to control blood loss, manage autologous blood, enhance hematopoiesis, and maximize tolerance of anemia.** This is achieved through the timely utilization of appropriate combinations of medical and surgical blood conservation techniques, devices, and pharmaceuticals. The planned and systematic use of multiple transfusion-alternative strategies by interdisciplinary teams can avoid allogeneic blood transfusion in a simple, safe, and effective manner.

“Physicians should strive to minimize blood loss, remembering that avoidance of transfusions may improve their patients’ outcomes.”

—Engoren M. The impact of blood conservation on outcomes in cardiac surgery: Is it safe and effective? *Ann Thorac Surg* 2010;90(2):458-9.

OBJECTIVES

- minimize blood loss
- enhance hematopoiesis
- autologous blood management (intraoperative and postoperative)
- tolerance of anemia



Preoperative assessment and planning

- Accurate history and physical examination
- Early recognition/management or prophylaxis of anemia
- Clinical assessment and optimization of coagulation status
- Judicious management of anticoagulants, antiplatelet agents, and other products that may adversely affect coagulation
- Restricted phlebotomy (quantity and frequency) to decrease iatrogenic blood loss
- Management planning (staging of complex procedures, enlarged surgical team/ minimal time, minimally invasive techniques, prophylactic preoperative or intraoperative angiographic embolization)

Intraoperative management

- Meticulous hemostasis and surgical technique
- Hemostatic surgical devices (e.g., thermal, electro-surgical, ultrasonic)
- Pharmacological agents to enhance hemostasis (e.g., systemic agents such as tranexamic acid, aminocaproic acid, and rFVIIa,* as well as topical hemostatic agents*) and mechanical hemostasis/occlusion
- Autologous blood management* (e.g., cell salvage, hemodilution)
- Other blood conservation techniques (e.g., hypotensive anesthesia, surgical positioning, normothermia)
- Minimally invasive approaches (e.g., laparoscopic, endoscopic, stereotactic radiosurgery)
- Angiographic embolization

* Confirm acceptability with patient.



Postoperative management

Maximize tolerance of anemia

Continuous assessment of coagulation status/monitoring for bleeding and its arrest

Postoperative blood salvage*

Anemia management

Volume management (judicious use of nonblood volume expanders)

Avoidance of hypertension and hypothermia

Restricted phlebotomy

* Confirm acceptability with patient.



Positive outcomes

- Reduced adverse events
- Lower infection rates
- Shorter length of stay in hospital and intensive care unit
- Decreased short- and long-term mortality
- Avoidance of canceled surgery due to blood inventory shortages
- Lower overall hospital and patient-care costs

What medical professionals say

“The strategy of avoiding transfusion often termed ‘bloodless surgery’ should not be limited to JWs [Jehovah’s Witnesses] but should form an integral part of everyday surgical practice as more evidence accumulates on the adverse effects of blood transfusion.”

—Bhaskar B, et al. Comparison of outcome in Jehovah’s Witness patients in cardiac surgery: an Australian experience. *Heart, Lung Circ* 2010;19(11):655-9.

“Blood management makes good economic sense and (consistent with the evidence presented here) good medical sense.”

—Adamson JW. New blood, old blood, or no blood? *N Engl J Med* 2008;358(12):1295-6.

“The most effective blood conservation strategies remain the simplest and likely least costly.”

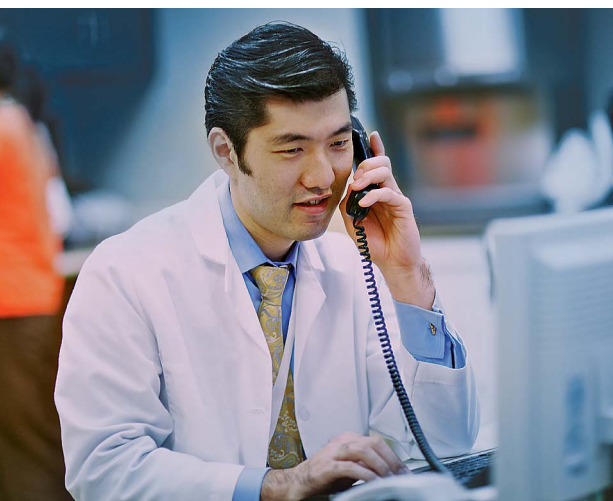
—Tinmouth AT, et al. Blood conservation strategies to reduce the need for red blood cell transfusion in critically ill patients. *CMAJ* 2008;178(1):49-57.

“PBM [patient blood management] is possible today and needs to be implemented in our hospitals. The medical, physiological, ethical, legal and economic evidence cannot be ignored.”

—Thomson A, et al. Patient blood management—a new paradigm for transfusion medicine? *Int Soc Blood Transfus Sci Ser* 2009;4(2):423-35.

“The most effective strategy in decreasing the use of allogeneic blood components is not to focus solely on any particular intervention, but to employ a combination of initiatives in a comprehensive, multidisciplinary, multimodality blood management program.”

—Nalla BP, et al. Update on blood conservation for cardiac surgery. *J Cardiothorac Vasc Anesth* 2012; 26(1):117-33.



For more information

Jehovah’s Witnesses have a worldwide network of more than 1,700 Hospital Liaison Committees (HLC). This network provides authoritative information regarding clinical strategies to avoid blood transfusion and facilitates access to health care for patients who are Jehovah’s Witnesses.

To contact a local HLC representative, go to www.jw.org/en/medical-library and click “Contact Local Representative.”



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