Citations in Patient Blood Management

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Preface

Patient blood management (PBM), defined as an evidence-based, multi-disciplinary approach to optimizing the care of patients who might need transfusion, has continued to gain attention during the years since the publication of the previous list of Citations. The current compendium, including English articles listed in PubMed from January, 2010 through June, 2014, is indicative of the development of additional experience and knowledge in this important field of transfusion medicine. These are presented here to facilitate further dissemination of knowledge about the appropriate use of blood components and measures that can be implemented to avoid or delay the need for transfusion.

The articles have been grouped according to the topics they explore. Many articles have been listed in two categories to facilitate their being found in a manual search. For example, an article on the use of tranxemic acid in arthroplasty would be listed in Pharmacologic Interventions: Measures to Reduce Blood Loss, Including Anticoagulation Reversal, as well as Issues Pertinent to Particular Disciplines: Orthopedics and Neurosurgery. However, the approach used by the compiler may not match the reader’s, and the use of electronic searching tools for keywords is encouraged to expand the number of citations identified.

The compendium focuses on trials or reports of interventions to reduce the need for transfusion. Not all of the articles report decreased usage of transfusion, however, and careful reading of all papers of interest is advised. Not included are reports of the outcomes of transfusion per se, such as associating transfusion with poorer outcomes, or analyses of the effect of storage of blood components. Single case reports have also not been included.

The compendium is intended to serve as a companion to the many educational publications, seminars and web-based sessions offered by AABB on the topic of PBM. Given the ongoing evolution of medical knowledge and scientific understanding, all readers are advised to search the most recently published literature to ensure application of the most current concepts.

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Compiler
Overview


41. Mathias JM. Blood management: Reducing blood use reduces risks and lowers costs. OR Manager 2012;28:1, 8-12.


52. Roubinian NH, Murphy EL, Swain BE, et al for the NHLBI Recipient Epidemiology and Donor Evaluation Study-III (REDS-III) and the Northern California Kaiser Permanente DOR Systems Research Initiative. Predicting red blood cell transfusion in hospitalized patients: Role of hemoglobin level, comorbidities, and illness severity. BMC Health Serv Res 2014;14:213.


69. Wallis JP. Disentangling anemia and transfusion. Transfusion 2011;51:8-10.


**Program Management, Financial Implications, Cost-Effectiveness Analyses**


22. Farmer SL, Towler SC, Leahy MF, Hofmann A. Drivers for change: Western Australia Patient Blood Management Program (WA PBMP), World Health Assembly (WHA) and Advisory

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52. Lin YC, Chang CS, Yeh CJ, Wu YC. The appropriateness and physician compliance of platelet usage by a computerized transfusion decision support system in a medical center. Transfusion 2010;50:2565-70.


Anemia – Recognition and Management


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**Use of Iron**


### Use of Erythropoietin


Utilization of Coagulation and Platelet Function Testing


Indications, Utilizations, and Guidelines


Red Blood Cells


83. Roubinian NH, Murphy EL, Swain BE, et al. NHLBI Recipient Epidemiology and Donor Evaluation Study-III (REDS-III) and the Northern California Kaiser Permanente DOR Systems Research Initiative. Predicting red blood cell transfusion in hospitalized patients: Role of hemoglobin level, comorbidities, and illness severity. BMC Health Serv Res 2014;14:213.


Frozen Plasma and Cryoprecipitate


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37. Keir AK, Stanworth S. Fresh-frozen plasma should not be given to nonbleeding premature infants with “abnormal” coagulation tests. Transfusion 2014;54:1681.


74. Zielinski MD, Park MS, Jenkins D. Appropriate evidence-based practice guidelines for plasma transfusion would include a high ratio of plasma to red blood cells based on the available data. Transfusion 2010;50:2762-4.


Platelets


42. Petricevic M, Biocina B. Letter by Petricevic and Biocina regarding article, “Platelet function measurement-based strategy to reduce bleeding and waiting time in clopidogrel-treated patients undergoing coronary artery bypass graft surgery: The timing based on platelet function strategy to reduce clopidogrel-associated bleeding related to CABG (TARGET-CABG) Study”. Circ Cardiovasc Interv 2012;5:e47; author reply e48.


Peri-Surgical Interventions

General Surgical Issues


**Preoperative Blood Collection and Acute Normovolemic Hemodilution**


**Intra- and Postoperative Red Cell Recovery**


Issues Pertinent to Particular Disciplines

Cardiology, Cardiac Surgery, Thoracic Surgery, and Vascular Surgery


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218. Schill DM. Plasma sequestration: A good therapy to prevent the deleterious effect of clopidogrel when clopidogrel is used within one to four days of coronary bypass surgery. Perfusion 2010;25:91-5.


Critical Care


Gastroenterology


**General Surgery**


Gynecology


10. Ikechebelu JI, Ezeama CO, Obiechina NJ. The use of torniquet to reduce blood loss at myo-
case-control study evaluating risk factors for conversion. Gynecol Oncol 2014 (in press). doi: 
10.1016/j.ygyno.2014.06.008.
12. Lundin ES, Johansson T, Zachrisson H, et al. Single-dose tranexamic acid in advanced ovar-
ian cancer surgery reduces blood loss and transfusions: Double-blind placebo-controlled 
15. Shokeir T, Shalaby H, Nabil H, Barakat R. Reducing blood loss at abdominal myomectomy 
with preoperative use of dinoprostone intravaginal suppository: A randomized placebo-con-
A review and update of blood conservation management schemes. World J Surg Oncol 
2011;9:142.

Hematology and Oncology

1. Adegite EA, Goyal RK, Murray PJ, et al. The management of menstrual suppression and uter-
ine bleeding: A survey of current practices in the Pediatric Blood and Marrow Transplant 
3. Alfred A, Vora AJ. What is the minimum level of donor chimerism necessary to sustain trans-
fusion independence in thalassaemia? Bone Marrow Transplant 2011;46:769-70.
4. Bercovitz RS, Quinones RR. A survey of transfusion practices in pediatric hematopoietic stem 
5. Berger MD, Gerber B, Arn K, et al. Significant reduction of red blood cell transfusion require-
ments by changing from a double-unit to a single-unit transfusion policy in patients receiving 
intensive chemotherapy or stem cell transplantation. Haematologica 2012;97:116-22.
6. Boone JD, Kim KH, Marques M, Straughn JM. Compliance rates and outcomes associated 
with a restrictive transfusion policy in gynecologic oncology patients. Gynecol Oncol 2014; 
7. Buhrkuhl DC, Karlsson MK, Carter JM. An audit of platelet transfusion within the Wellington 
8. Dangsuwan P, Manchanas T. Blood transfusion reduction with intravenous iron in gynecolo-


**Nephrology**


Obstetrics


Orthopedics and Neurosurgery


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blood salvage as transfusion alternative using a restrictive transfusion policy in patients with a preoperative hemoglobin above 13 g/dl. Anesthesiology 2014;120:852-60.


**Oral/Facial Surgery and Otorhinolaryngology**


Pediatrics


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63. Keir AK, Stanworth S. Fresh-frozen plasma should not be given to nonbleeding premature infants with “abnormal” coagulation tests. Transfusion 2014;54:1681.


Transplantation


Trauma and Massive Transfusion


111. Zielinski MD, Park MS, Jenkins D. Appropriate evidence-based practice guidelines for plasma transfusion would include a high ratio of plasma to red blood cells based on the available data. Transfusion 2010;50:2764.

Urology


Pharmacologic Interventions

Measures to Reduce Blood Loss, Including Anticoagulation Reversal


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PMID: 24880346.
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70. Hong I, Stachnik J. Unlabeled uses of factor VIIa (recombinant) in pediatric patients. Am J 
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73. Hvas AM, Andreasen JB, Christiansen K, Ravn HB. Ex-vivo response to blood products and 
haemostatic agents after paediatric cardiac surgery. Blood Coagul Fibrinolysis 2013;24:587- 
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trates enables reversal of coagulopathy and decreases transfusion rates in patients with major 
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cent idiopathic scoliosis treated with pedicle screws and Ponte osteotomies? Surg Technol Int 
77. Irisson E, Hémon Y, Pauly V, et al. Tranexamic acid reduces blood loss and financial cost in 
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83.
78. Iwai T, Tsuji S, Tomita T, et al. Repeat-dose intravenous tranexamic acid further decreases 
plasma for reversal of coagulopathy of trauma: Is there a difference? World J Surg 2014;38: 
1875-81.
81. Kaewpradub P, Apiban P, Rummasak D. Does tranexamic acid in an irrigating fluid reduce 
 intraoperative blood loss in orthognathic surgery? A double-blind, randomized clinical trial. 

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Effects of Antiplatelet Agents, Anticoagulation, and Hemodilution


43. Schill DM. Plasma sequestration: A good therapy to prevent the deleterious effect of clopidogrel when clopidogrel is used within one to four days of coronary bypass surgery. Perfusion 2010;25:91-5.


