

narrative review. *J Cardiothorac Vasc Anesth*. 2021;35:281–297.

19. Koster AA, Pappalardo F, Silvestri S, et al. Cesarean section in a patient with non-compaction cardiomyopathy managed with ECMO. *Heart Lung Vessel*. 2013;5:183–186.

20. Chestovich PJ, Kwon MH, Cryer HG, et al. Surgical procedures for patients receiving mechanical cardiac support. *Am Surg*. 2011;77:1314–1317.

21. Eckhauser AE, Melvin WV, Sharp KW. Management of general surgical problems in patients with left ventricular assist devices. *Am Surg*. 2006;72:158–161.

22. Feldman D, Pamboukian SV, Teuteberg JJ, et al. The 2013 International Society for Heart and Lung Transplantation guidelines for mechanical circulatory support: executive summary. *J Heart Lung Transplant*. 2013;32:157–187.

23. Schmid C, Wilhelm M, Dietl KH, et al. Noncardiac surgery in patients with left ventricular assist devices. *Surgery*. 2001;129:440–444.

24. Stehlik J, Nelson DM, Kfoury AG, et al. Outcome of noncardiac surgery in patients with ventricular assist devices. *Am J Cardiol*. 2009;103:709–712.

25. Goldstein DJ, Mullis SL, Delphin ES, et al. Noncardiac surgery in long-term implantable left ventricular assist-device recipients. *Ann Surg*. 1995;222:203–207.

26. Kirklin JK, Pagani FD, Goldstein DJ, et al. American Association for Thoracic Surgery/International Society for Heart and Lung Transplantation guidelines on selected topics in mechanical circulatory support. *J Thorac Cardiovasc Surg*. 2020;159:865–896.

8.3.4. Pulmonary Artery Catheters

1. Friese RS, Shafi S, Gentilello LM. Pulmonary artery catheter use is associated with reduced mortality in severely injured patients: a National Trauma Data Bank analysis of 53,312 patients. *Crit Care Med*. 2006;34:1597–1601.

2. Sotomi Y, Sato N, Kajimoto K, et al. Impact of pulmonary artery catheter on outcome in patients with acute heart failure syndromes with hypotension or receiving inotropes: from the ATTEND Registry. *Int J Cardiol*. 2014;172:165–172.

3. Rajaram SS, Desai NK, Kalra A, et al. Pulmonary artery catheters for adult patients in intensive care. *Cochrane Database Syst Rev*. 2013;CD003408.

4. Senoner T, Velik-Salchner C, Tauber H. The pulmonary artery catheter in the perioperative setting: should it still be used? *Diagnostics (Basel)*. 2022;12:177.

5. De Backer D. Hemodynamic assessment: the technique or the physician at fault? *Intensive Care Med*. 2003;29:1865–1867.

6. Sandham JD, Hull RD, Brant RF, et al. A randomized, controlled trial of the use of pulmonary-artery catheters in high-risk surgical patients. *N Engl J Med*. 2003;348:5–14.

7. Bender JS, Smith-Meek MA, Jones CE. Routine pulmonary artery catheterization does not reduce morbidity and mortality of elective vascular surgery: results of a prospective, randomized trial. *Ann Surg*. 1997;226:229–236. discussion 236–237.

8. Berlaak JF, Abrams JH, Gilmour IJ, et al. Preoperative optimization of cardiovascular hemodynamics

improves outcome in peripheral vascular surgery. A prospective, randomized clinical trial. *Ann Surg*. 1991;214:289–297. discussion 298–299.

9. Valentine RJ, Duke ML, Inman MH, et al. Effectiveness of pulmonary artery catheters in aortic surgery: a randomized trial. *J Vasc Surg*. 1998;27:203–211. discussion 211–212.

10. Shoemaker WC, Appel PL, Kram HB, et al. Prospective trial of supranormal values of survivors as therapeutic goals in high-risk surgical patients. *Chest*. 1988;94:1176–1186.

11. Isaacson IJ, Lowdon JD, Berry AJ, et al. The value of pulmonary artery and central venous monitoring in patients undergoing abdominal aortic reconstructive surgery: a comparative study of two selected, randomized groups. *J Vasc Surg*. 1990;12:754–760.

8.4. Perioperative Anemia Management

1. Devereaux PJ, Marcucci M, Painter TW, et al. Tranexamic acid in patients undergoing noncardiac surgery. *N Engl J Med*. 2022;386:1986–1997.

2. Poeran J, Chan JJ, Zubizarreta N, et al. Safety of tranexamic acid in hip and knee arthroplasty in high-risk patients. *Anesthesiology*. 2021;135:57–68.

3. WOMAN Trial Collaborators. Effect of early tranexamic acid administration on mortality, hysterectomy, and other morbidities in women with postpartum haemorrhage (WOMAN): an international, randomised, double-blind, placebo-controlled trial. *Lancet*. 2017;389:2105–2116.

4. Munoz M, Gomez-Ramirez S, Cuenca J, et al. Very-short-term perioperative intravenous iron administration and postoperative outcome in major orthopedic surgery: a pooled analysis of observational data from 2547 patients. *Transfusion*. 2014;54:289–299.

5. Munoz M, Gomez-Ramirez S, Martin-Montanez E, et al. Cost of post-operative intravenous iron therapy in total lower limb arthroplasty: a retrospective, matched cohort study. *Blood Transfus*. 2014;12:40–49.

6. Kleineruschkamp A, Meybohm P, Straub N, et al. A model-based cost-effectiveness analysis of patient blood management. *Blood Transfus*. 2019;17:16–26.

7. Carson JL, Stanworth SJ, Guyatt G, et al. Red blood cell transfusion: 2023 AABB International Guidelines. *JAMA*. 2023;330(19):1892–1902.

8. Lin DM, Lin ES, Tran MH. Efficacy and safety of erythropoietin and intravenous iron in perioperative blood management: a systematic review. *Transfus Med Rev*. 2013;27:221–234.

9. Althoff FC, Neb H, Herrmann E, et al. Multimodal patient blood management program based on a three-pillar strategy: a systematic review and meta-analysis. *Ann Surg*. 2019;269:794–804.

10. Musallam KM, Tamim HM, Richards T, et al. Preoperative anaemia and postoperative outcomes in non-cardiac surgery: a retrospective cohort study. *Lancet*. 2011;378:1396–1407.

11. Drexler C, Macher S, Lindenau I, et al. High-dose intravenous versus oral iron in blood donors with iron deficiency: the IronWoMan randomized, controlled clinical trial. *Clin Nutr*. 2020;39:737–745.

12. Richards T, Baikady RR, Clevenger B, et al. Preoperative intravenous iron to treat anaemia before major abdominal surgery (PREVENTT): a randomised,

double-blind, controlled trial. *Lancet*. 2020;396:1353–1361.

13. Leahy MF, Hofmann A, Towler S, et al. Improved outcomes and reduced costs associated with a health-system-wide patient blood management program: a retrospective observational study in four major adult tertiary-care hospitals. *Transfusion*. 2017;57:1347–1358.

14. Schack A, Berkfors AA, Ekeloef S, et al. The effect of perioperative iron therapy in acute major non-cardiac surgery on allogenic blood transfusion and postoperative haemoglobin levels: a systematic review and meta-analysis. *World J Surg*. 2019;43:1677–1691.

15. Triphaus C, Judd L, Glaser P, et al. Effectiveness of preoperative iron supplementation in major surgical patients with iron deficiency: a prospective observational study. *Ann Surg*. 2021;274:e212–e219.

16. Khalafallah AA, Yan C, Al-Badri R, et al. Intravenous ferric carboxymaltose versus standard care in the management of postoperative anaemia: a prospective, open-label, randomised controlled trial. *Lancet Haematol*. 2016;3:e415–e425.

17. Froessler B, Palm P, Weber I, et al. The important role for intravenous iron in perioperative patient blood management in major abdominal surgery: a randomized controlled trial. *Ann Surg*. 2018;267:e39–e40.

18. Calleja JL, Delgado S, del Val A, et al. Ferric carboxymaltose reduces transfusions and hospital stay in patients with colon cancer and anemia. *Int J Colorectal Dis*. 2016;31:543–551.

19. Fowler AJ, Ahmad T, Abbott TEF, et al. Association of preoperative anaemia with postoperative morbidity and mortality: an observational cohort study in low-, middle-, and high-income countries. *Br J Anaesth*. 2018;121:1227–1235.

20. Turan A, Rivas E, Devereaux PJ, et al. Association between postoperative haemoglobin concentrations and composite of non-fatal myocardial infarction and all-cause mortality in noncardiac surgical patients: post hoc analysis of the POISE-2 trial. *Br J Anaesth*. 2021;126:87–93.

21. Ducrocq G, Gonzalez-Juanatey JR, Puymirat E, et al. Effect of a restrictive vs liberal blood transfusion strategy on major cardiovascular events among patients with acute myocardial infarction and anemia: the REALITY randomized clinical trial. *JAMA*. 2021;325:552–560.

22. Nasir U, Waheed TA, Ahuja KR, et al. Transfusion strategies in patients with acute coronary syndrome and anemia: a meta-analysis. *Egypt Heart J*. 2022;74:17.

23. Roth GA, Johnson C, Abajobir A, et al. Global, regional, and national burden of cardiovascular diseases for 10 causes, 1990 to 2015. *J Am Coll Cardiol*. 2017;70:1–25.

24. Klip IT, Comin-Colet J, Voors AA, et al. Iron deficiency in chronic heart failure: an international pooled analysis. *Am Heart J*. 2013;165:575–582.e3.

25. AlDallal SM, Jena N. Prevalence of anemia in type 2 diabetic patients. *J Hematol*. 2018;7:57–61.

26. GBD 2017 Disease and Injury Incidence and Prevalence Collaborators. Global, regional, and national incidence, prevalence, and years lived with disability for 354 diseases and injuries for 195 countries and territories, 1990–2017: a systematic analysis for the