**Supplemental Table 1: Practice Guidelines Evaluated and Summarized with Level of Evidence.**

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| **Guideline****Intervention** | **2011 ACCF/AHA Guideline for Coronary Artery Bypass Graft Surgery45** | **STS/SCA Blood Conservation Clinical Practice Guidelines19,26** | **ASA Practice Guideline for Perioperative Blood Management22** | **ESA Management of Severe Perioperative Bleeding Guidelines20,21** | **AABB Clinical Practice Guidelines for RBC transfusion24** | **AABB Clinical Practice Guideline for Platelets transfusion23**  | **EACTS/EACTA Guidelines on Patient Blood Management for Adult Cardiac Surgery25** |
|  | **PREOPERATIVE** |  |
| **Preoperative hemoglobin optimization**  |  | Erythropoietin and iron in preoperative anemia or those who refuse transfusion (Class IIa, LOE:B)Preoperative erythropoietin after autologous donation (Class IIb, LOE:A) | Supplementation of iron for iron deficiency anemiaErythropoietin with or without iron in non iron deficiency anemia or those who refuse transfusion | Evaluation for anemia several weeks prior to elective surgery (Class I, LOE:C)Iron supplementation in iron deficiency anemia (Class I, LOE:B)Erythropoiesis stimulating agents (with or without iron) for non iron deficiency anemia (Class II, LOE:B)Iron and/or erythropoiesis stimulating agent after preoperative autologous donation (Class II, LOE:C) |  |  | Iron supplementation in anemia prior to cardiac surgery (Class IIb, LOE:C)Erythropoietin with iron in non iron deficiency anemia (Class IIa, LOE:B)RBC transfusion to correct preoperativeanemia is not recommended (Class III, LOE:C) |
| **Transfusion algorithms / protocols** | A multimodal approach with transfusion algorithms, and a focused blood conservation strategy (Class I, LOE:A) | A multimodality approach involving multiple stakeholders, institutional support and enforceable transfusion algorithms (Class I, LOE:A) | Multimodal protocols including transfusion algorithms and POC testing  | Algorithms with pre-defined transfusion triggers based on viscoelastic assays (Class I, LOE:C) |  |  | Transfusion protocols for bleeding patients (Class I, LOE:C) |
| **Platelet assessment** |  | Preoperative platelet count(Class I, LOE:A)Platelet function tests with preoperative anti-platelet medications (Class IIb, LOE:C)  | Platelet function tests with preoperative anti-platelet medications  | Platelet function tests with preoperative anti-platelet medications (Class II, LOE:B) |  |  | Platelet function tests with preoperative anti-platelet medications  (Class IIb, LOE:B)Routine platelet function testing is not recommended in the absence of preoperativeanti-platelet therapy (Class III, LOE:C) |
|  | **INTRAOPERATIVE/POSTOPERATIVE** |  |
| **Antifibrinolytics** | Lysine analogues (Class I, LOE: A) | Lysine analogues (Class I, LOE:A)Use of aprotinin is not recommended (Class III, LOA:A) | Antifibrinolytics for CPB | Prophylactic administration of tranexamic acid for CPB(Class I, LOE:A) |  |  | Antifibrinolytic therapy (Class I, LOE:A) |
| **Heparin resistance and antithrombin\* administration**\*Antithrombin administration for heparin resistance may be considered off-label in some countries.  |  | Antithrombin for Antithrombin-mediated heparin resistance prior to CPB (Class I, LOE:A) |  |  |  |  | Antithrombin to improve heparin sensitivity (Class I, LOE:B)Antithrombin to reduce post-CPB bleeding is not recommended (Class III, LOE:C) |
| **Minimizing hemodilution**  | Aggressive attempts to limit hemodilution (Class I, LOE:B) | Minicircuits to reduce hemodilution(Class I, LOE:A)Modified ultrafiltration (Class I, LOE:A)Retrograde autologous priming (Class IIb, LOE:B)Acute normovolemic hemodilution (Class IIb, LOE:B) | Acute normovolemic hemodilution may be considered  | Acute normovolemic hemodilution (Class II, LOE:C) |  |  | Limitation of hemodilution (Class I, LOE:B)Minimized CPB circuits (Class IIa, LOE:B)Retrograde autologous priming (Class IIa, LOE A)Modified ultrafiltration (Class IIb, LOE: B)Acute normovolemic hemodilution (Class IIb, LOE:B) |
| **Coagulation and platelet monitoring**  | Point of care testing (Class I, LOE:A) | Point-of-care testing (Class I, LOE:A) | Viscoelastic-guided algorithms and a platelet count ORConventional assays–guided algorithms | Viscoelastic-guided algorithms (Class I, LOE:B)ORConventional assays –guided algorithms(Class I, LOE:C) |  |  | Viscoelastic-guided algorithms(Class IIa, LOE:B)  |
| **RBC transfusion triggers** |  | Hb < 7g/dl (Class IIa, LOE:C)Hb ≤ 6 g/dl on CPB with moderate hypothermia. (Class IIa, LOE:C)Hb ≤ 7 g/dl on CPB if risk for critical end-organ ischemia.(Class IIb, LOE:C)Transfusion is not recommended for Hb ≥ 10 g/dl. (Class III, LOE:C).  | Restrictive transfusion strategy  | Restrictive transfusion strategy (Class I, LOE:A)Target Hb of 7-9 g/dl in bleeding patients(Class I, LOE:C) | Restrictive transfusion strategy withHb ≤ 8 g/dL if clinically stable  |  | Based on clinical condition rather than a pre-defined Hb level (Class I, LOE:B)Target HCT of 21-24% when oxygen delivery is adequate(Class IIb, LOE:B) |
| **Cell salvage** |  | Routine use (Class I, LOE:A) | Cell-salvage as a blood-sparing intervention  | Routine use(Class I, LOE:B) |  |  | Routine use (Class IIa, LOE: B)   |
| **Platelets (PLT) transfusion triggers** |  | Bleeding with supporting POC tests (Class IIa, LOE:C) | Bleeding with lower than 50,000/μl or with PLT dysfunction  | Bleeding with lower than 50,000/μl, with PLT dysfunction or with preoperative anti-platelet therapy(Class II, LOE:C) |  | Prophylaxis before major surgery when lower than50,000/μl with lower than 50,000/μl, and/or PLT dysfunction. | Bleeding with lower than 50,000/μl, with PLT dysfunction or with preoperative anti-platelet therapy(Class IIa, LOE:C) |
| **Fibrinogen supplementation (cryoprecipitate/ fibrinogen concentrate\*)**\*Administration of fibrinogen concentrate for acquired hypo-fibrinogenemia may be considered off-label in some countries**.** |  | Bleeding with supporting POC tests(Class IIa, LOE:C) | Bleeding with fibrinogen level below 100 mg/dlRarely indicated if fibrinogen greater than 150 mg/dl. | Bleeding with fibrinogen level below 150-200 mg/dl(Class I, LOE:C) |  |  | Bleeding with fibrinogen level below 1.5 g/l (Class IIb, LOE:B)Prophylactic fibrinogensupplementation not recommended(Class III, LOE:B) |
| **Coagulation factors supplementation (Plasma/PCC\*)****\***PCC in bleeding patients with coagulation factor deficiency that is not warfarin-related may be considered off- label in some countries. |  | Part of massive transfusion algorithm (Class IIb, LOE:B)Bleeding with coagulation factor/s deficiency (Class IIa, LOE:B)For urgent warfarin reversal PCC\* is preferred, but plasma is reasonable when PCC\* does not contain factor VII (Class IIa, LOE:B)Prophylactic use in the absence of bleeding is not recommended(Class III, LOE:A) | Bleeding with increased INR.Obtain coagulation tests before transfusion PCC\* or plasma (and vitamin K) for warfarin reversal | Bleeding with coagulation factor/s deficiency (Class I, LOE:B)PCC\* and vitamin K for warfarin reversal(Class I, LOE:B).PCC\* may be preferred over plasma for better risk profile(Class II, LOE:C) |  |  | Bleeding with coagulation factor/s deficiency (Class IIa, LOE:B)PCC\* or plasma for warfarin reversal(Class IIb, LOE:B)PCC\* may be preferred over plasma for better risk profileProphylactic use in the absence of bleeding is not recommended (Class III, LOE:B) |
| **Recombinant factor VIIa\* (rFVIIa)**\*Recombinant factor VIIa for severe refractory bleeding after CPB may be considered off-label in some countries. |  | Excessive non-surgical bleeding refractory to routine therapies (Class IIb, LOE:B) | Excessive non-surgical bleeding refractory to routine therapies  | Excessive non-surgical bleeding refractory to routine therapies (Class II, LOE:C)Prophylactic use is not recommended.  |  |  | Excessive non-surgical bleeding refractory to routine therapies (Class IIb, LOE:B)Prophylactic use is not recommended (Class III, LOE:B)  |
| **Use of Desmopressin (DDAVP)** |  | Bleeding with PLT dysfunction known to respond to this agent (uremia, CPB-induced, type I von Willebrand’s disease) (Class II, LOE:B) | Bleeding with PLT dysfunction  | In acquired von-Willebrand factor deficiency (Class II, LOE: C) |  |  | Bleeding with PLT dysfunction (Class IIa, LOE:C) |

Table 1: Summary of recommendations for common daily practices of blood management and conservation in cardiac surgical patients from currently published guidelines.

AABB = American Association of Blood Banks, ACCF = American College of Cardiology Foundation, AHA = American Heart Association, ASA – American Society of Anesthesiologists, CPB = Cardiopulmonary Bypass, DDAVP = Desmopressin, EACTA = European Association of Cardiothoracic Anesthesiology, EACTS = European Association of Cardio-Thoracic Surgery, ESA = European Society of Aneasthesiology, HCT = Hematocrit, INR = International Normalized Ratio, PCC = Prothrombin Complex Concentrate, POC = Point Of Care, PLT = Platelets, RBC = Red Blood Cells, rFVIIa = Recombinant Activated Factor VII, ROTEM = Rotational Thromboelastometry, SCA = Society of Cardiovascular Anesthesiologists, STS = Society of Thoracic Surgeons, TEG = Thromboelastography.