



EAST/AAST/AAST-AMC: SCC Review Series - Hematology I - #6

03/28/2025

Join Dr. Lauren Craugh with expert guests Dr. Brian Yorkgitis and Dr. Linda Schutzman. This is the sixth episode of the Surgical Critical Care Review Series. This is a unique collaborative initiative between EAST, AAST, and AAST-AMC. During this episode Massive Transfusion and ABC Score, Thromboelastography, and Thromboembolic Prophylaxis will be discussed.

Link to Podcast

<https://www.east.org/education-resources/traumacasts/detail/2300/eastaastaastamc-scc-review-series-hematology-i>

Supplemental Material:

- ACS TQIP Massive Transfusion in Trauma Guidelines, October 2014
- Holcomb JB, del Junco DJ, Fox EE, Wade CE, Cohen MJ, Schreiber MA, Alarcon LH, Bai Y, Brasel KJ, Bulger EM, Cotton BA, Matijevic N, Muskat P, Myers JG, Phelan HA, White CE, Zhang J, Rahbar MH; PROMMTT Study Group. The prospective, observational, multicenter, major trauma transfusion (PROMMTT) study: comparative effectiveness of a time-varying treatment with competing risks. *JAMA Surg.* 2013 Feb;148(2):127-36. doi: 10.1001/2013.jamasurg.387. PMID: 23560283; PMCID: PMC3740072. PROMMTT 2013
- Holcomb JB, Tilley BC, Baraniuk S, et al. Transfusion of Plasma, Platelets, and Red Blood Cells in a 1:1:1 vs a 1:1:2 Ratio and Mortality in Patients With Severe Trauma: The PROPPR Randomized Clinical Trial. *JAMA.* 2015;313(5):471-482. doi:10.1001/jama.2015.12PROPPR Randomized Clinical Trial 2015
- Meizoso JP, Cotton BA, Lawless RA, et al. Whole blood resuscitation for injured patients requiring transfusion: A systematic review, meta-analysis, and practice management guideline from the Eastern Association for the Surgery of Trauma. *J Trauma Acute Care Surg.* 2024;97(3):460-470. doi:10.1097/TA.0000000000004327
- Byrne JP, Geerts W, Mason SA, et al. Effectiveness of low-molecular-weight heparin versus unfractionated heparin to prevent pulmonary embolism following major trauma: a propensity-matched analysis. *J Trauma Acute Care Surg.* 2017;82(2):252-262. doi:10.1097/TA.0000000000001321
- Barrera LM, Perel P, Ker K, Cirocchi R, Farinella E, Morales Uribe CH. Thromboprophylaxis for trauma patients. *Cochrane Database Syst Rev.* 2013;(3):CD008303. doi:10.1002/14651858.CD008303.pub2
- Major Extremity Trauma Research Consortium (METRC), O'Toole RV, Stein DM, et al. Aspirin or lowmolecular-weight heparin for thromboprophylaxis after a fracture. *N Engl J Med.* 2023;388(3):203-213. doi:10.1056/NEJMoa2205973
- Olson EJ, Bandle J, Calvo RY, et al. Heparin versus enoxaparin for prevention of venous thromboembolism after trauma: a randomized noninferiority trial. *J Trauma Acute Care Surg.* 2015;79(6):961-969. doi:10.1097/TA.0000000000000750
- Pokrzywa CJ, Biesboer EA, Figueroa J, et al. Anti-Factor Xa Monitoring of enoxaparin thromboembolism prophylaxis in emergency general surgery patients. *J Am Coll Surg.* 2023;237(2):195- 203. doi:10.1097/XCS.0000000000000709
- Stevens SM, Woller SC, Kreuziger LB, et al. Antithrombotic therapy for VTE disease: second update of the CHEST guideline and expert panel report. *Chest.* 2021;160(6):e545-e608. doi:10.1016/j.chest.2021.07.055
- Verhoeff K, Raffael K, Connell M, et al. Relationship between anti-Xa level achieved with prophylactic low-molecular weight heparin and venous thromboembolism in trauma patients: a systematic review and meta-analysis. *J Trauma Acute Care Surg.* 2022;93(2):e61-e70. doi:10.1097/TA.0000000000003580
- Pannucci CJ, Fleming KI, Varghese TK Jr, et al. Low anti-factor xa level predicts 90- day symptomatic venous thromboembolism in surgical patients receiving enoxaparin prophylaxis: a pooled analysis of eight clinical trials. *Ann Surg.* 2022;276(6):e682-e690. doi:10.1097/SLA.0000000000004589 [PMID: 33086312]
- Yorkgitis BK, Berndtson AE, Cross A, et al. American Association for the Surgery of Trauma/American College of Surgeons-Committee on Trauma Clinical Protocol for inpatient venous thromboembolism prophylaxis after trauma. *J Trauma Acute Care Surg.* 2022;92(3):597-604. doi:10.1097/TA.0000000000003475 [PMID: 34797813]
- Abdelfattah K, Cripps MW. Thromboelastography and rotational thromboelastometry use in trauma. *Int J Surg.* 2016;33(Pt B):196-201. doi:10.1016/j.ijisu.2015.09.036 [PMID: 26384835]
- Da Luz LT, Nascimento B, Shankarakutty AK, Rizoli S, Adhikari NK. Effect of thromboelastography (TEG®) and rotational thromboelastometry (ROTEM®) on diagnosis of coagulopathy, transfusion guidance and mortality in trauma: descriptive systematic review. *Crit Care.* 2014;18(5):518. doi:10.1186/s13054-014-0518-9 [PMID: 25261079]