

Venous Thromboembolism Prophylaxis for Pediatric Trauma Patients

Objectives

- To assess the risk of venous thromboembolism (VTE) in pediatric trauma patients.
- To identify pediatric trauma patients who should receive VTE prophylaxis.

Pediatric Venous Thromboembolism

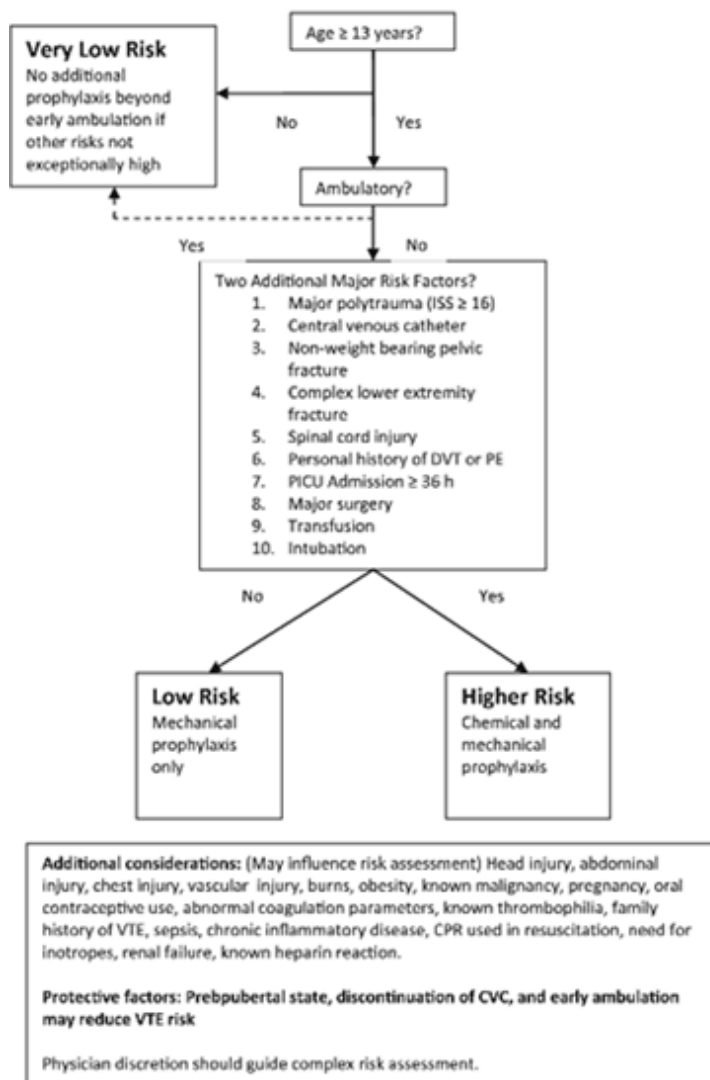
- VTE events are rare in pediatric trauma. The incidence of VTE is less than 1% in the general pediatric trauma population.
- Although rare, VTEs are potentially serious events.
- Pharmacologic prophylaxis against VTE is a reasonable strategy in critically injured adolescent trauma patients.
- The effectiveness of prophylaxis compared to its potential harms has not been proven in this population.
- Attending physician discretion should always guide complex risk assessment.

VTE Prophylaxis

- Begin chemical prophylaxis if following criteria met:
 - Age \geq 13 years
 - Non-weight bearing pelvic fracture, femur fracture, or bilateral lower extremity fractures
- Consider VTE prophylaxis if:
 - Major polytrauma
 - Spinal cord injury
 - PICU admission \geq 36 hours
 - Morbid obesity
 - Personal history of DVT or PE
- Preferred medication is low-molecular-weight heparin (LMWH, enoxaparin).
 - Start LMWH at 0.5 mg/kg Q 12H (up to 30mg SQ Q 12H)
 - If weight > 60 kg and BMI > 40, start LMWH 40mg SQ Q12H
- Continue LMWH until orthopedic follow-up (no US needed).

Exclusions for Pharmacologic Prophylaxis:

- Active bleeding
- Intracranial hemorrhage acutely (36-48h) and per neurosurgery.
- Spinal cord injury acutely and per spine service.
- Perioperative:
 - General surgery – day of operation
 - Neurosurgery – day of and 3 days after
 - Orthopedic surgery – day of operation
- Use SCDs if patient has contra-indication to LMWH.



Selected References

1. Hanson SJ, Faustion VS, Mahajerin A, et al. Recommendations for venous thromboembolism prophylaxis in pediatric trauma patients: A national, multidisciplinary consensus study. *J Trauma Acute Care Surg* 2016; 80: 695-701. PMID: 26881487
2. Mahajerin A, Petty JK, Hanson SJ, et al. Prophylaxis against venous thromboembolism in pediatric trauma - Joint collaboration between EAST and the Pediatric Trauma Society. *J Trauma Acute Care Surg* 2017; 82: 627-36. PMID: 28030503
3. Petty JK. Venous thromboembolism prophylaxis in the pediatric trauma patient. *Semin Pediatr Surg* 2017; 26:14-20. PMID: 28302279