

Development of a VTE screening tool and prophylaxis protocol for the pediatric population: An interdisciplinary collaboration.

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PICO QUESTION

In pediatric patients, how does VTE prophylaxis based upon physician preference compare to use of a standard prophylaxis algorithm for effectively preventing the development of VTEs?

PROBLEM

- Historically VTE has been considered an adult problem
- Routine screening and prophylaxis of the pediatric population was not current practice.
- There was a lack of standardization related to VTE screening and prophylaxis at our institution.

FINANCIAL IMPLICATIONS

Estimated healthcare costs directly attributable to a pediatric VTE episode are around \$20,000

Akron Children's Hospital

Patient Order

Pediatric Venous Thromboembolism (VTE) Prevention Worksheet (Ages 12 - up to their 18th birthday) (If age < 12 years, then STOP)		Score (Add and Subtract)
Date:		
Altered Mobility/Activity (spends majority of their time in bed, regardless of activity level orders)		0 1
Chronic Medical Conditions (4 if any present, regardless of number of conditions)		0 1
Acquired/Inherited Thrombophilia		
Antithrombotic antibodies	Protein C deficiency	
Antithrombin deficiency	Protein S deficiency	
Prothrombin gene mutation (G20210A)		
Factor V Leiden	Sickle cell disease	
Hypertrombinemia	Polycythemia (hematocrit > 50%)	
Infectious Etiologies		
Inflammatory Bowel Disease (IBD)		
Concomitant Heart Disease		
Family History of Clotting (1st degree relative with DVT or PE or easy bruise before age 50 M or CVA)		
Acute Medical Conditions (4 if any present, regardless of number of conditions)		0 1
Skin		
Active wounds / dermatologic disease		
Spinal		
Trauma		
Orthopedic - Major lower extremity trauma or surgery		
Burn		
Spinal Cord Injury/Infect - paraplegic or quadriplegic		
Pelvic Fracture requiring surgery or pelvic fracture without early ambulation (> 72 hours non weight bearing)		
History of a blood clot/thrombophilia		
Medications (4 for any)		
Drugs containing coumatin		
Parenteral nutrition (PN or PPN - > 7 days)		
Aspirin/platelet within last 30 days		
Lower extremity central venous access present		0 1
Strenuous Activity - 50th percentile for age		0 1
Other (one patient) checked in the last 30 days*		0 1
Fragment		0 1
Total Score		

Prophylaxis Guidelines

Score 0-1: Minimal risk
Encourage ambulation

Score 2: Intermittent Pneumatic Compression (IPC) device (preferred)
Compression Stockings

Score 3-3: Higher risk
Pharmacologic prophylaxis
(If none included, immobilize)
Mechanical and Pharmacologic prophylaxis

Pharmacologic Guidelines

PATIENTS LESS THAN 2 MONTHS
Enoxaparin (Lovenox)
0.75 mg/kg/once SQ q12 hrs

PATIENTS GREATER THAN 2 MONTHS
Enoxaparin (Lovenox)
0.3 mg/kg/once SQ q12 hrs

PATIENTS WEIGHT > 40 KG/ADULTS
Enoxaparin (Lovenox)
40 mg SQ q12hrs

Contraindications to pharmacologic prophylaxis:

Already receiving anticoagulation
Active bleeding
Acute Stroke
Intracranial hemorrhage
Coagulopathy
History of heparin-induced thrombocytopenia (HIT)
Spinal Fusion Refract

Strongly consider hematology consult for patients with:
Platelet count < 50,000
Hepatic or renal insufficiency
Recent illness/inefficiency

Before initiating therapy, approval from all surgical attending consults involved with the patient MUST be obtained.

VTE Prevention Action Initiated: Pharmacologic Mechanical Ambulation

VTE Prophylaxis Contraindicated, Reason: _____

Resident/NP/PA Name (print): _____
Resident/NP/PA Name (signature): _____

Discussed with Dr. _____ Time _____ Physician Agrees with Plan of Care

IMPLEMENTATION TIMELINE

June- September 2013

- Formation of workgroup
- Selected targeted age group
- Screening tool finalized and approved
- Prophylaxis algorithm finalized and approved

October- December 2013

- Decided upon metrics to evaluate effectiveness

Developed plan for implementation January 2014- Present

- Pilot in PICU, TCU and 5600

August-September 2014

- EPIC Build, Order Sets and Reports
- House-wide Education

October 2014

- Roll out house-wide

OUTCOMES

Pilot Studies- 98% Compliance with screening and prophylaxis