

CQI: Continuous Quality Improvement

Prevention of Venous Thromboembolic Events

Pretest:

1. *The recommended duration of antithrombotic therapy following an orthopedic procedure such as THR or TKR is _____*
2. *The risk of VTE in a patient undergoing surgery for hip fracture is _____% for DVT, _____% for proximal DVT, and _____% for PE with a _____% rate of fatal PE*
3. *Recommended agents to prevent VTE after a major orthopedic surgery in an elderly patient include:*
 - a. *ASA*
 - b. *SCDs*
 - c. *LMWH at full treatment dose*
 - d. *Low dose unfractionated heparin (LDUH) - 5000 sq TID*
 - e. *Warfarin to maintain INR 2-3*
 - f. *C, D, or E*
 - g. *A or B*
4. *Indications for IVC filter include*
 - a. *Contraindication to anticoagulation or active bleeding*
 - b. *Continued PEs after adequate anticoagulation*
 - c. *Prevention of future DVT*
 - d. *A or B*
5. *T/F: Anticoagulation is not needed after an IVC filter is placed*

Background: Venous Thromboembolic Events (VTEs) are common and are an important cause of hospital morbidity and mortality. Elderly patient who are acutely ill with other comorbidities are at an even greater risk for thrombotic complications.

The absolute risk for DVT in acutely ill, hospitalized patients (especially those with diagnoses such as pneumonia and CHF) is 10-20% on medical services and as high as 50-60% for patients undergoing a major orthopedic procedure.

Current evidence based guidelines by the ACCP recommend that essentially all acutely ill hospitalized patients and patients undergoing orthopedic procedures receive prophylaxis for VTE with LMWH or low dose unfractionated heparin (LDUH) unless there is a clear contraindication based upon bleeding risk. In addition, it is recommended that patients undergoing major orthopedic procedures, especially those related to emergent hip fractures, receive at least LDUH (5000 TID dosing) and optimally full treatment with LMWH and/or warfarin for at least 5 weeks after the procedure (Geerts et al Chest 2004).

Reading: 1. Buller HR, Agnelli G, Hull RD, Hyers TM, Prins MH, Raskob GE. The Seventh ACCP Conference on Antithrombotic and Thrombolytic Therapy: Evidence Based Guidelines. Chest: 126(3) 2004

2. Geerts WH, Pineo GF, Heit JA, Bergqvist D, Lassen MR, Colwell CW, Ray JG. The Seventh ACCP Conference on Antithrombotic and Thrombolytic Therapy: Evidence Based Guidelines; Prevention of Venous Thromboembolism. Chest 126(3): 2004

Answers to Pretest:

- 1. The recommended duration of antithrombotic therapy following a major orthopedic procedure is 5 weeks*
- 2. The risk of VTE in a patient undergoing surgery for hip fracture is : 50-60% for DVT, 25-30% for proximal DVT, 3-11% for PE, and 2.5-7.5% for fatal PE*
- 3. Recommended agents to prevent VTE after a major orthopedic surgery in an elderly patient include: LMWH at treatment dose, LDUH, or warfarin with a target INR of 2-3. Elderly patients undergoing hip or knee replacements, especially if done for a hip fracture, are at especially high risk for up to 5 weeks after the surgery for acute VTE, and are at a higher risk for fatal PE than younger, healthier patients who more often have asymptomatic DVTs.*
- 4. Indications for IVC filter include: contraindication to anticoagulation or active bleeding is the primary indication for IVC filter placement; IVC filters may decrease the rate of PEs, but have not been shown to alter morbidity or mortality in patients who are anticoagulated. There is less evidence but general consensus that filters may be indicated in patients who continue to have PEs on adequate treatment and in patients who have large PEs, RV strain, and are at risk for a subsequent large PE.*
- 5. Anticoagulation is not recommended after an IVC filter is placed: FALSE; IVC filters are best when used as a temporary means of preventing a PE in a patient with a DVT who cannot be anticoagulated. Some patients will continue to have a contraindication to anticoagulation, and these patients usually have other significant comorbidities and an overall high subsequent mortality. IVC filters themselves are thrombogenic and do not prevent recurrent DVTs or the complications such as post phlebotic syndrome and therefore it is recommended that if at all possible patients be anticoagulated as soon as possible.*