Selection of DVT Prophylaxis
What type of prophylaxis for which patients?

Introduction

An impressive array of scientific literature supports the safety and efficacy of a number of prophylactic methods in patients at risk for venous thromboembolism. This evidence is more than sufficient to demonstrate the value of prophylaxis; however, the sheer volume of literature presents a problem for physicians. This challenge is compounded by the fact that most methods of prophylaxis have been shown to have different levels of efficacy in different patient populations. Physicians are already overwhelmed by the increasing number of details that must be managed to provide high quality patient care. How can physicians sift through these data (e.g. sensitivity and specificity of prophylactic methods for each patient population at risk) to make a decision about an individual patient?

One answer is to adopt a system of prevention developed by a panel of experts who have carefully reviewed the literature and simplified innumerable details into practical guidelines for patient care.

The following section (Chapter 2) includes a reprint of the 1995 Consensus on Prevention of Venous Thromboembolism that was written by a panel of experts assembled by the American College of Chest Physicians. Summary recommendations from this paper have been incorporated in a patient care flow chart (Figure 2.1). Specific recommendations are provided for major patient groups at risk for DVT. Recommendations are based on evidence from level-I clinical trials demonstrating the most effective method(s) of prophylaxis at each level of risk (Figures 2.2 & 2.3).
Figure 2.1 - Algorithm for Prevention of DVT

**Assess Risk**

- **Common Risk Factors For DVT/PE**
  - Major operation
  - Previous DVT/PE
  - Major trauma
  - Age > 40 years
  - Obesity
  - Stroke
  - CHF
  - Hematologic Disorder
  - Varicose Veins
  - In-dwelling Catheter (in Femoral Vein)

**Assign Level of Risk**

- **Low Risk:** e.g. minor surgery, under 40 years
- **Moderate Risk:** e.g. major surgery, over 40 years, no other DVT risk factors
- **High Risk:** e.g. major surgery, over 40 years, additional risk factors.
- **Very High Risk:** e.g. hip or knee replacement, major trauma, hip fracture.

**Select Most Effective Type of Prophylaxis**

**Start Prophylaxis**

- Either Before Surgery or within 24 Hours after Surgery

**Continue Prophylaxis for 7 Days or Until the Patient is Fully Ambulatory**

**D/C Prophylaxis**

**Best Practices**

Preventing DVT & PE

Center for Outcomes Research

Page 2.2
**Figure 2.2  Selection of DVT Prophylaxis: Based on the 1995 American College of Chest Physicians Consensus Panel Recommendations**

**Low Risk**
- Uncomplicated surgery in patients <40 years
- No other DVT risk factors
- No specific prophylaxis
- Early ambulation

**Moderate Risk**
- Major surgery in patients >40 years
- No other DVT risk factors
- Elastic stockings
- Low-dose Heparin (q12h)
- Or IPC

**High Risk**
- Major surgery in patients >40 years
- Have additional risk factors for DVT
- Low-dose Heparin (q8h)
- Or IPC
- Or LMWH

**Very High Risk**
- Major surgery in patients >40 years
- Previous DVT or Malignant disease or Hip fracture or Major trauma, Spinal cord injury, Paralytic stroke
- LMWH Or Warfarin
- May add IPC
- And Elastic stockings

LMWH = low-molecular-weight-heparin  IPC = intermittent pneumatic compression
Figure 2.3  Selection of DVT Prophylaxis: Based on the 1995 American College of Chest Physicians Consensus Panel Recommendations

Orthopaedic Surgery

Elective Hip Replacement
  LMWH
  Or
  Warfarin
  Or Adjusted-dose heparin

Elective Knee Replacement
  LMWH
  Or
  IPC

LMWH = low-molecular-weight heparin  IPC = intermittent pneumatic compression
Figure 2.4 Selection of DVT Prophylaxis in Trauma Patients

- **Trauma**
  - Evaluate the risk of DVT*
    - **Low**
      - No prophylaxis needed
    - **Moderate/High**
      - Contraindication to anticoagulants*
    - **No**
      - LMWH ± IPC
    - **Yes**
      - Lower extremity fractures?
        - **No**
          - IPC
            - **No**
              - Bilateral foot compression
            - **Yes**
              - DS surveillance or IVC filter (if prolonged risk)
        - **Yes**
          - Multiple DVT risk factors?
            - **No**
              - IPC
            - **Yes**
              - DS surveillance or IVC filter (if prolonged risk)

*See text

IPC= intermittent pneumatic compression, DS = duplex scanning, LMWH= low-molecular-weight heparin