

PREVENTION AND TREATMENT OF VENOUS THROMBOEMBOLISM

International Consensus Statement 2013 Guidelines According to Scientific Evidence

Developed under the auspices of the:

Cardiovascular Disease Educational and Research Trust (UK)

European Venous Forum

North American Thrombosis Forum

International Union of Angiology and

Union Internationale du Phlebologie

Critical Care Patients

Chapter 10

Risk of VTE in Critical Care Patients

- **Incidence of DVT in ICU patients ranges from 25%-32%**
- **Approximately 5% of the ICU patients develop DVT prior to admission³⁻⁶**
- **ICU patients have several risk factors^{1,2}**
 - ▶ ICU patients typically have multisystem disease which make routine methods of prophylaxis problematic^{5,7,8}
 - ▶ e.g. thrombocytopenia, renal insufficiency or active bleeding (often gastrointestinal) may preclude the use of pharmacologic prophylaxis. Thus, it is paradoxical that this group of patients one may not be able to safely or effectively use some of the standard prophylaxis measures.

1. Geerts W, et al. J Crit Care 2002; 17:95-104.

2. Cook D, et al. J Crit Care 2000; 15:127-32.

3. Schonhofer B and Kohler D Respiration 1998; 65:173-7.

4. Harris LM, et al. J Vasc Surg 1997; 26:764-9.

5. Cook D, et al. Crit Care 2001; 5:336-42.

6. Ibrahim EH, et al. Crit Care Med 2002; 30:771-4.

7. Hirsch DR, et al. Jama 1995; 274:335-7.

8. Marik PE, et al. Chest 1997; 111:661-4

Review of Evidence

LDUH vs. No Prophylaxis

- **A randomized double blind placebo controlled study in critically ill high risk patients demonstrated that LDUH compared with no prophylaxis is effective in reducing asymptomatic DVT¹**
 - ▶ 13% vs. 29% (RR 0.37; 95% CI 0.28 to 0.5)

Review of Evidence

LMWH vs. No Prophylaxis

- **A RCT of 223 patients with mechanical ventilation for acute COPD demonstrated that LMWH compared to no prophylaxis reduced the incidence of DVT¹**
 - ▶ 15.5% vs. 28% (RR 0.55; 95% CI 0.3 to 0.99)
- **No differences in side effects**

Review of Evidence

LMWH vs. IPC

- **A meta-analysis of 2 RCT in a total of 562 trauma patients^{1,2} has not shown any significant difference in VTE between LMWH and IPC³**

1. Ginzburg E, et al. Br J Surg 2003; 90:1338-44.

2. Kurtoglu M, et al. World J Surg 2004; 28:807-11.

3. Limpus A, et al. Am J Crit Care 2006; 15:402-10; quiz/discussion, 411-2.

Review of Evidence

Dalteparin vs. LDUH

- **Multicenter RCT with 3,746 critically ill medical and surgical patients for the duration of stay in the ICU¹ compared dalteparin (5000 IU plus a 2nd placebo injection daily) with LDUH (5000 IU twice daily)**
 - ▶ No significant difference in the rate of proximal DVT detected by ultrasound (5.1% vs. 5.8%)
 - ▶ Lower incidence of PE in the dalteparin group: 1.3% vs. 2.3% (RR 0.28; 95% CI 0.17 to 0.47)
- **No significant difference in the rate of bleeding between the groups**

VTE Prophylaxis Recommendations

Critical Care Medical Patients

- **LMWH (dalteparin as per label) is recommended**
 - ▶ Level of evidence: High
- **For patients with contraindications to pharmacologic prophylaxis, the use of GEC stockings with IPC is an alternative**
 - ▶ Level of evidence: Low
- **In the absence of contraindications, combined mechanical plus pharmacologic prophylaxis is suggested**
 - ▶ Level of evidence: Low
- **For patients with contraindications to prophylaxis, surveillance with duplex scanning is indicated**
 - ▶ Level of evidence: Low