

Randomised clinical trial of intermittent pneumatic compression and low molecular weight heparin in trauma

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An independent study undertaken by the Miami Deep Vein Thrombosis Study Group, University of Miami School of Medicine, USA

Abstract

- After trauma, up to 60% of immobilised patients have been reported to develop a silent deep vein thrombosis (DVT).
- A prospective randomised trial was performed on 442 trauma patients who received thromboprophylaxis using either an intermittent pneumatic compression (IPC) device or Low Molecular Weight Heparin (LMWH) (Enoxaparin).
- Duplex imaging was performed on admission and weekly thereafter until discharge or 30 days.
- This study aimed to test the hypothesis that IPC (FLOWTRON® Excel System) could provide thromboprophylaxis of equal efficacy to that of LMWH in trauma patients with moderate to severe injury.
- Patients were randomised to receive either the *FLOWTRON* System or LMWH.
- On admission, all patients had Doppler ultrasound to exclude DVT; this was repeated every week.

Main outcomes

1. Incidence of DVT in the two groups was low. In the group using IPC, six patients developed a DVT and in the LMWH group there was one patient – this represents no statistical difference.
2. The *FLOWTRON* System was significantly less expensive (\$6272) compared to Enoxaparin (\$73,000).
4. *FLOWTRON* Systems can be used safely and effectively for thromboprophylaxis in trauma patients without any other methods such as Graduated Compression Stockings (GCS).
5. There were no significant differences between the DVT rate in the two groups, with 2.7% of patients developing a DVT in the IPC group and 0.5 % in the LMWH group.
6. There were significant cost savings in the IPC group.

Conclusion

IPC is a safe and effective method of thromboembolic prophylaxis in trauma patients.