

A prospective study on intermittent pneumatic compression in the prevention of deep vein thrombosis in patients undergoing total hip or total knee replacement

Pidala M et al (1992). *Surgery, Gynecology & Obstetrics*; 175: 47-51

Overview

The effectiveness of intermittent pneumatic compression (IPC) using the FLOWTRON® deep vein thrombosis (DVT) System was prospectively studied in 346 consecutive patients undergoing total knee replacement (TKR) or total hip replacement (THR). Incidence of post-operative deep vein thrombosis (DVT) was 4%.

Design and methodology

One hundred and twelve THR patients and 234 TKR patients were entered into the study consecutively. All patients had the FLOWTRON System with calf garments applied to both legs pre-operatively and post-operatively. The garment was only removed from the operative leg during the surgical procedure. Ultrasound scanning and impedance plethysmography (IPG) were performed to assess for DVT development prior to surgery and also on post-operative days 4 and 7.

All patients were seen by the operating surgeon on post-operative days 30 and 60.

There was no control group (patients having no prophylaxis) as this was considered to be unethical.

Measurements recorded

DVT is often silent and asymptomatic. For this reason in studies such as this, the presence of DVT must be actively assessed rather than a reliance on clinical signs and symptoms. Patients in this study underwent ultrasound scanning and IPG pre and post-operatively to detect DVT.

Results

Eight THR patients developed DVT (7%) and six TKR patients developed DVT (2.5%). This is a total incidence of 4%. In 11 of the 14 patients who developed DVT, this was in the operative leg.

No deaths were recorded and there was no clinical evidence of pulmonary emboli.

Conclusion

The incidence of post-operative DVT was 4%. This figure is significantly lower than the 40-50% rates highlighted in the International Consensus paper (2001) for patients undergoing such surgery without prophylaxis. IPC is effective for DVT prophylaxis in this patient group.