Prophylactic use of LMWH plus intermittent pneumatic compression prevented DVT in hip or knee arthroplasty


Clinical impact ratings IM/Ambulatory care ★★★★★ ★★★★★★★★ Internal medicine ★★★★★★★★ Surgery ★★★★★★★★

Haematology ★★★★★★★★

Q In patients receiving primary unilateral total hip or total knee replacement surgery, is prophylactic use of low molecular weight heparin (LMWH) plus intermittent pneumatic compression more effective than LMWH plus graduated compression stockings for reducing deep venous thrombosis (DVT)?

MAIN RESULTS

The table shows the results. (5 of the 18 patients with DVT were symptomatic.)*

CONCLUSION

In patients who have total hip or total knee replacement, prophylactic use of low molecular weight heparin (LMWH) plus intermittent pneumatic compression was more effective than LMWH plus graduated compression stockings for preventing deep venous thrombosis.

*Information provided by author.

**Commentary**

Combining mechanical with pharmacological methods of thromboprophylaxis in patients who have total hip or knee replacement is attractive because these patients have a 1–3% incidence of in-hospital symptomatic DVT and a 15–30% prevalence of asymptomatic DVT at hospital discharge despite routine LMWH or warfarin.1 Few studies have evaluated the effectiveness of combined thromboprophylaxis or compared the effectiveness of different mechanical methods in major orthopaedic surgery.2 3

The study by Silbersack et al showed a 100% (95% CI 81% to 100%) relative risk reduction of DVT in high risk patients who received LMWH plus intermittent pneumatic compression compared with those who received LMWH plus graduated compression stockings. DVT did not occur in any of the 70 patients randomised to intermittent pneumatic compression despite premature discontinuation of treatment in almost 26% of patients (18/70) in this group. These promising results suggest a wider role for combined intermittent pneumatic compression and LMWH in patients who have total hip or knee replacement.

However, important issues remain unresolved. Firstly, all but 2 of the 18 outcome events in this trial were distal thrombi. Prevention of these events is of limited clinical relevance because most resolve spontaneously and only about one sixth extend to involve the proximal veins.4 Secondly, a significant reduction in proximal or symptomatic thrombi (which are clinically most important) was not shown; the study was not powered for these outcomes. Thirdly, outside of a clinical trial setting, compliance with IPC is likely to be even lower than observed in this study. This drawback may reduce the effectiveness of IPC in routine clinical practice. Future studies should address these issues.

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