Graduated compression stockings for the prevention of deep-vein thrombosis in postoperative surgical patients: a systematic review and economic model with a value of information analysis

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Plain English summary

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Deep-vein thrombosis (DVT) is a condition in which a blood clot forms in a vein and causes a blockage. Patients who have had surgery are at greater risk of DVT. Medication, such as heparin, and wearing graduated compression stockings (GCSs) decrease the risk of DVT. GCSs are available as knee-length or thigh-length stockings.

The aim of this project was to assess the need for further research into which length of GCSs is best when used in addition to heparin for prevention of DVT in surgical patients.

Studies of thigh- or knee-length GCSs in surgical patients were systematically reviewed, and systematic reviews and guidelines were assessed to estimate surgical patients’ baseline risk of DVT and the clinical consequences of DVT. The findings were incorporated into an analysis to establish the value of further research.

Twenty-three randomised controlled trials were included in the systematic review. The results suggest that thigh-length stockings (used alongside medication) are the most effective method of preventing DVT, although this result was not conclusive. Patients preferred knee-length stockings and were more likely to wear them correctly.

Cost-effectiveness analyses suggested that using thigh-length GCSs as well as heparin was the cost-effective option for patients at a higher risk of DVT, although differences were relatively small.

Further research around the relative effect of thigh- versus knee-length GCSs may be most valuable in high-risk patients. However, whether or not further research is worthwhile depends on GCSs price, expected treatment adherence and trial design.
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This report

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