Low Molecular Weight Heparin for Prevention of Venous Thromboembolism in Patients with Lower-limb Immobilization

Reference:

Scientific Literature Review

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Podiatric Relevance:
Lower extremity immobilization has been shown to be a risk factor toward the development of deep vein thrombosis (DVT) and venous thromboembolism (VTE). Risk factors for DVT include obesity, age over 40, immobilization, surgery, and operative time, including a number of other risk factors. The podiatric population is exposed to many of these risk factors. This paper reviews the current guidelines and literature for VTE prevention.

Methods:
Literature search through CENTRAL, MEDLINE, and EMBASE for randomized controlled trials and controlled clinical trials comparing low molecular weight heparin (LMWH) with no prophylaxis or placebo. Six trials fit the criteria, which included 1490 patients. Weight bearing and duration of the lower extremity cast were not considered as part of the inclusion or exclusion criteria.

Results:
1490 patients were included in the 6 studies, with incidence of VTE ranging from 4.3% to 40% in patients with lower extremity injuries immobilized for at least one week who received placebo or no prophylaxis. In total, 740 patients received no prophylaxis or placebo, while 750 patients received a LMWH daily via subcutaneous injection. Events of VTE in the experimental group ranged from 0% to 37%, which were found to be significantly lower than controls. Comparable results were seen in the following subcategories: operated patients, conservatively treated patients, patients with fractures, patients with soft tissue injuries, patients with proximal thrombosis, patients with distal thrombosis and patients with below-knee casts. The incidence of symptomatic VTE was reduced from 2.5% to 0.3% in the LMWH group.

Conclusions:
The use of low molecular weight heparin in outpatients significantly reduces the number of venous thromboembolic events when immobilization is required. Published studies so far have not found any differences between LMWH preparations, but if present must be extremely small. Recommended DVT and VTE prophylaxis with LMWH are for the duration of lower extremity immobilization.