In patients with acute venous thromboembolism (VTE), is fixed dose subcutaneous low molecular weight heparin (LMWH) more effective than adjusted dose unfractionated heparin (UFH) for reducing symptomatic recurrent VTE?

METHODS

Data sources: Cochrane Peripheral Vascular Diseases Specialized Register (July 2004), the Cochrane Central Register of Controlled Trials (Issue 3, 2004), LIACS, bibliographies of relevant articles, researchers, and pharmaceutical companies.

Study selection and assessment: randomised controlled trials (RCTs) that compared fixed dose subcutaneous LMWH with adjusted dose UFH (intravenous or subcutaneous) for initial treatment (usually the first 3–14 d) in patients with acute VTE. After selection, each study was assessed for adequacy of concealment of allocation before randomisation.

Outcomes: recurrent symptomatic VTE, major haemorrhage, and all cause mortality.

MAIN RESULTS

22 RCTs (n = 8867) met the selection criteria. Categories of VTE included symptomatic deep venous thrombosis (DVT) of the leg without symptoms of pulmonary embolism (PE) (13 RCTs); PE only (2 RCTs); symptomatic DVT of the leg, with or without symptomatic PE; or asymptomatic DVT of the leg with symptomatic PE or symptomatic DVT or PE (7 RCTs). Preparations of LMWH evaluated included nadroparin, tinzaparin, enoxaparin, dalteparin, CY 222, certoparin, ardeparin, and reviparin. The rates of symptomatic recurrent VTE throughout follow up, major haemorrhage during the initial treatment, and all cause mortality at the end of follow up (3–6 mo) were lower in the LMWH group than in the UFH group (table). Subgroup analysis of patients with proximal DVT also showed that rates of symptomatic recurrent VTE at the end of follow up (relative risk reduction [RRR] 44%, 95% CI 24 to 55), major haemorrhage during the initial treatment (RRR 51%, CI 15 to 72), and all cause mortality at the end of follow up (RRR 37%, CI 15 to 53) were lower in the LMWH group than in the UFH group.

CONCLUSION

In patients with acute venous thromboembolism, fixed dose subcutaneous low molecular weight heparin is more effective than adjusted dose unfractionated heparin for reducing the incidence of symptomatic recurrent venous thromboembolism, major haemorrhage, and all cause mortality.