Title **Prevention, Diagnosis, and Treatment of Venous Thromboembolism – A Systematic Review**

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Reference SBU Report 158, 2002. ISBN 91-87890-76-3, Available at http://www.sbu.se

Aim

This report systematically reviews the literature on prevention, diagnosis, and treatment of venous thromboembolism (VTE), focusing mainly on patient benefits and risks, but also on the costs to the healthcare system and society.

Conclusions and results

The scientific evidence strongly suggests that low molecular weight heparin can replace unfractionated heparin in preventing and treating venous thrombosis and pulmonary embolism. The treatment effects of a single injection per day of low molecular weight heparin are equally favorable as the effects achieved from two injections per day. The risk for hemorrhage is lower with low molecular weight heparin, and management is simpler, which facilitates outpatient treatment. Longer-term secondary prophylaxis with warfarin reduces the risk for relapse, but treatment lasting several years also increases the risk for severe hemorrhage.

In outpatients, the presence of treatment-demanding VTE can be ruled out by using a combination of D-dimer measurement and clinical probability assessment (based on clinical decision rules). Thorough ultrasonic examination of the leg and a CT scan of the pulmonary vessels usually achieve sufficient diagnostic reliability, strongly supporting the use of these methods in clinical practice.

It is not meaningful to conduct extensive investigations of patients with venous thrombosis to detect possible underlying cancer. It is essential to develop more cost-effective methods to investigate genetic predisposition for thrombosis.

Methods

A literature search was conducted using MEDLINE and the Cochrane Library (up to July 2001), reference lists, and personal communications. Only randomized controlled studies were included. To assess diagnostic methods, we included only studies that used an independent comparison with a known reference method. Approximately 1300 scientific studies met the requirements for high scientific quality. Current clinical practice was surveyed, and national data on in-hospital care and costs were also analyzed.

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