

## Outpatient Treatment of Deep-Vein Thrombosis with Low-Molecular-Weight Heparin

Harrison L, McGinnis J, Crowther M, Ginsberg J, Hirsh J. Assessment of outpatient treatment of deep-vein thrombosis with low-molecular-weight heparin. *Arch Intern Med* 1998;158:2001-3.

### Study Overview

**Objective.** To determine the safety, efficacy, and feasibility of outpatient, home-based treatment of acute deep-vein thrombosis (DVT) with low-molecular-weight (LMW) heparin, and to assess patient compliance and satisfaction with this treatment.

**Design.** Prospective cohort study.

**Setting and participants.** Consecutive outpatients with a suspected diagnosis of DVT presenting to two thrombosis clinics in Hamilton, Ontario, between 1 June 1996 and 1 June 1997.

**Methods.** Diagnosis was confirmed by results of compression ultrasonography or venography. Patients were confirmed as eligible if they did not have a high risk of bleeding, did not require hospital admission for other medical comorbidities, and were capable of self-treatment at home. Eligible patients were treated with subcutaneous LMW heparin and with long-term warfarin sodium after receiving the first dose, usually self-administered or administered by a family member in the thrombosis unit. LMW heparin treatment was continued for a minimum of 5 days and until the international normalized ratio was within therapeutic range (ie, 2.0 to 3.0) for 2 consecutive days.

**Main outcome measures.** Incidence of bleeding (considered a major complication if hospitalization or transfusion is required), recurrence of thromboembolic disease (ie, DVT and pulmonary embolism), and patient satisfaction with treatment.

**Main results.** Of 113 patients with objectively confirmed DVT, 89 were deemed eligible for outpatient home treatment with LMW heparin. During the study, one patient died of a combination of pulmonary embolism and major bleeding, a second patient was admitted to the hospital for bleeding, and five patients with active malignant disease had recurrent DVT. Rates of adverse events were similar to those reported in other recent studies.

Of the patients who completed the satisfaction questionnaire, 75 of 82 (91%) were "very pleased" with home treatment; 44 of 63 (70%) were "very satisfied" self-injecting the LMW heparin; and 71 of 77 (92%) were "very satisfied" with the support and instruction they received on an ongoing basis from thrombosis clinic personnel by telephone or at office visits.

### Conclusion

Outpatient, home-based treatment with LMW heparin is safe and effective and results in a high rate of patient satisfaction in carefully selected patients with DVT.

### Commentary

Evaluations of various LMW heparins in patients with venous thromboembolic disease have demonstrated no significant differences between home and hospital treatments in rates of recurrent venous thromboembolic disease, bleeding, or mortality [1-3]. Harrison and colleagues have confirmed that a fairly large proportion of patients with DVT potentially are eligible for and will benefit from an outpatient program with LMW heparin, as long as the program employs competent staff trained in educating and monitoring patients at home.

### Applications for Clinical Practice

With more than 500,000 cases occurring annually in the United States, venous thromboembolic disease is a significant cause of morbidity and mortality [4]. The development of LMW heparin is leading to a reevaluation of the usual care for venous thromboembolic disease. At this time, however, it is approved only for prevention of DVT and is not approved for treatment in either the hospital or home setting.

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"Outcomes Research in Review" is edited by Chris L. Pashos, PhD, Executive Director of Pharmacoeconomics and Outcomes Research, Abt Associates Clinical Trials, Cambridge, MA, and Associate Editor, *Health Policy, Journal of Clinical Outcomes Management*. Dr. Pashos selects, summarizes, and provides the commentary on the studies that appear in this section.

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