

Commentary on Current Literature

Richard A. Johnson, MD

Preventing Venous Thromboembolism in Medical Patients

Leizorovicz A, Mismetti P.

Circulation. 2004;110(Suppl IV):IV-13-IV-19.

Given the increased number of patients hospitalized for acute medical illnesses and the associated risk of venous thromboembolism (VTE), the use of prophylaxis has become a public health matter. Thromboprophylaxis is not widely practiced in acutely ill medical patients, due in part to the heterogeneity of this group and the perceived difficulty in assessing those who would most benefit from treatment. Nevertheless, the results of recent well-conducted clinical trials support the evidence-based recommendations for more widespread systematic use of low-dose low-molecular-weight heparin (LMWH) or unfractionated heparin (UFH) in this population. Three large well-controlled studies

(MEDENOX, PREVENT, and ARTEMIS) in acutely ill medical patients confirm previous findings that different at-risk patient populations show a consistent 50% reduction in VTE events with LMWH and fondaparinux. A meta-analysis in nearly 5000 patients in internal medicine comparing UFH and LMWH revealed a trend for reduction of deep vein thrombosis and pulmonary embolism with LMWH. Based on duration of use in clinical trials in acutely ill medical patients, prophylactic treatment with UFH and LMWH is recommended for 2 weeks.

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COMMENTARY

This paper by Leizorovicz and Mismetti provides a comprehensive review of recent clinical trials and evidence-based recommendations regarding the use of VTE prophylaxis for patients with acute illnesses. Of the approximately 300,000 cases of VTE now estimated to develop each year in the United States, about 75% of these VTE cases occur in acutely ill nonsurgical patients. However, despite an ever-growing population of patients with acute medical illness who have an associated risk of VTE, the widespread use of VTE prophylaxis does not yet occur in various groups of at-risk patients. Reasons for this limited use of VTE prophylaxis include lack of awareness of the risk of VTE in certain groups of patients; concern about bleeding; uncertain cost-to-benefit ratio, and lack of convenient risk-stratification tools for identifying those patients who can benefit from VTE prophylaxis. The findings of 3 large, placebo-controlled studies—MEDENOX, PREVENT, and ARTEMIS—found a reduction of VTE in the range of 50% with the use of LMWH and fondaparinux for a maximum of 14 days, with a minimal risk of major bleeding. More widespread and systematic use of VTE prophylaxis can greatly reduce the risk of VTE in patients with acute medical illnesses.

Commentary on Current Literature

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Retrospective Database Analysis of the Prevention of Venous Thromboembolism with Low-Molecular-Weight Heparin in Acutely Ill Medical Inpatients in Community Practice

McGarry LJ, Thompson D.

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BACKGROUND: Clinical trials have demonstrated that prophylaxis with low-molecular-weight heparin reduces the occurrence of venous thromboembolism (VTE) among acutely ill medical inpatients in the experimental setting.

OBJECTIVE: The goal of this retrospective database analysis was to examine the outcomes of low-molecular-weight heparin thromboprophylaxis among acutely ill medical inpatients in community practice.

METHODS: Using a large, geographically diverse, multihospital US database, we identified persons aged ≥ 40 years who had a hospital stay ≥ 6 days for an acute medical condition (including selected circulatory disorders, respiratory disorders, infectious diseases, or neoplasms) during calendar-year 2000. From these patients, those who received either enoxaparin thromboprophylaxis or no thromboprophylaxis were identified. Surgical patients, patients with nonthrombotic conditions requiring anticoagulant therapy, those transferred from or discharged to another acute care facility, and those medically ineligible for anticoagulation therapy were excluded. We compared the incidence of deep-vein thrombosis

(DVT), pulmonary embolism (PE), all VTE (ie, DVT and/or PE), and death during the hospital stay in the 2 cohorts.

RESULTS: A total of 162 patients receiving enoxaparin thromboprophylaxis and 3557 receiving no thromboprophylaxis were identified. The risk of VTE over the course of hospitalization was 1.9% with enoxaparin thromboprophylaxis versus 6.2% with no thromboprophylaxis (relative risk = 0.30; $P = 0.023$); mortality was similar in the 2 groups (8.0% vs 7.3; $P = \text{NS}$).

CONCLUSIONS: Using hospital administrative data, we observed a 70% lower risk of VTE for hospitalized acutely ill medical patients receiving low-molecular-weight heparin thromboprophylaxis versus those receiving no thromboprophylaxis; these results are consistent with findings from clinical trials of low-molecular-weight heparin versus placebo. We conclude that the low-molecular-weight heparin enoxaparin is effective in reducing the risk of VTE in acutely ill medical inpatients in community practice.

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COMMENTARY

This analysis by McGarry and Thompson highlights the need to focus more attention on VTE prophylaxis among acutely ill medical patients in community practice. In addition to surgical patients at elevated risk for VTE, nonsurgical patients who are hospitalized for various conditions (including congestive heart failure, chronic obstructive pulmonary disease, acute infections, or cancer) often have prolonged lengths of stay with periods of immobility, placing them at increased risk of VTE. This analysis of administrative data from 23 acute care institutions throughout the United States for calendar-year 2000 examined the outcomes of 2 groups of patients (1 group of 162 patients who received enoxaparin thromboprophylaxis and 1 group of 3557 patients who received no thromboprophylaxis). Researchers observed a 70% lower risk of VTE among patients receiving enoxaparin thromboprophylaxis as compared with patients who received no thromboprophylaxis. In community practice, many patients with acute illnesses who can potentially benefit from thromboprophylaxis are not receiving this care. Health care professionals are encouraged to identify risk factors for VTE (including a history of VTE, advanced age, obesity, varicose veins, and estrogen use) in all patients and adopt a more proactive approach to help prevent VTE.