Combination of a Normal D-Dimer Concentration and a Non-High Pretest Clinical Probability Score Is a Safe Strategy to Exclude Deep Venous Thrombosis

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**Background**—Serial ultrasonography is reliable for the diagnosis of deep venous thrombosis in symptomatic patients, but the low prevalence of thrombosis in this group renders the approach costly and inconvenient to patients. We studied the clinical validity of the combination of a pretest clinical probability score and a D-dimer test in the initial evaluation of patients suspected of deep venous thrombosis.

**Methods and Results**—Patients with a normal D-dimer concentration (<500 fibrin equivalent units [FEU] µg/L) and a non-high probability score (<3) had no further testing. Patients with a normal D-dimer concentration and a high probability score (≥3) underwent one ultrasonogram. Serial ultrasonography was performed in patients with an abnormal D-dimer concentration. Patients were followed for 3 months. A total of 812 patients were evaluable for efficacy. Only 1 of 176 patients (0.6%; 95% CI, 0.02% to 3.1%) with a normal D-dimer concentration and a non-high probability score developed thrombosis during follow-up. A normal D-dimer concentration and a non-high probability score developed thrombosis during follow-up. A normal D-dimer concentration and a high probability score were found in 39 patients; 3 of them (7.7%; 95% CI, 1.6% to 20.9%) had thrombosis at presentation, and one (2.8%; 95% CI, 0.07% to 14.5%) developed pulmonary embolism during follow-up. In 306 of 597 patients (51.3%) with an abnormal D-dimer concentration, thrombosis was detected by serial ultrasonography. Six patients (2.1%; 95% CI, 0.8% to 4.4%) developed thrombosis during follow-up. No deaths due to thromboembolism occurred during follow-up. The total need for ultrasonography was reduced by 29%.
**Conclusion**—The combination of a non-high pretest clinical probability score and a normal D-dimer concentration is a safe strategy to rule out deep venous thrombosis and to withhold anticoagulation.

**Key Words:** thrombosis • tests • fibrin fragment D • fibrin fibrinogen degradation products • ultrasonics

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