

New Approach to Identifying VTE Patients at Risk for Recurrence

Measuring thrombin generation could accurately predict risk for recurrent VTE.

Some patients with venous thromboembolism (VTE) eventually develop recurrent VTE. Because long-term anticoagulation to prevent recurrent VTE carries substantial risk for bleeding, a simple test to identify patients who are likely to experience recurrent VTE would be useful. Austrian researchers explored the value of a single measurement, thrombin generation, in 914 patients who recently had completed anticoagulant therapy for a first episode of VTE. Patients with lupus anticoagulant or coagulation factor deficiencies such as protein C or S were excluded. One of the authors is chief scientific officer of the company that makes the assay kit for thrombin generation.

Patients were followed closely for a mean of 47 months; recurrent VTE occurred in 100 patients. Peak thrombin generation was measured at a mean of 13 months after cessation of anticoagulant therapy. Risk for recurrence was 6.5% among those who had peak thrombin generation of <400 nM, compared with 20% in those who had measurements \geq 400 nM. In an analysis adjusted for many potentially confounding variables, relative risk for VTE was 0.42 with peak thrombin generation of <400 nM compared with levels \geq 400 nM. Two thirds of patients had peak thrombin generation of <400 nM.

Comment: In this study, a single measurement of thrombin generation — a key step in thrombosis — helped to distinguish patients who did or did not develop recurrent VTE. These data are sufficiently encouraging to warrant additional prospective studies in which this test is used to select patients for long-term anticoagulation. The assay used in this study is not yet available for routine clinical use.

— *Thomas L. Schwenk, MD*

Citation(s):

Hron G et al. Identification of patients at low risk for recurrent venous thromboembolism by measuring thrombin generation. *JAMA* 2006 Jul 26; 296:397-402.