**Review: a low clinical probability plus a normal D-dimer test result excludes a diagnosis of deep venous thrombosis**


Clinical impact ratings IM/Ambulatory care ★★★★★☆: Internal medicine ★★★★★☆: Emergency Medicine ★★★*****

In patients with suspected deep venous thrombosis (DVT), is a combination of rapid D-dimer testing with estimation of clinical probability accurate for excluding a diagnosis of DVT?

**METHODS**

- **Data sources**: Medline [1993–2003], Database of Abstracts and Reviews, and bibliographies of relevant articles.
- **Study selection and assessment**: prospective studies (published in English) that used a rapid D-dimer assay on at least a subgroup of consecutive outpatients with features of DVT; estimated the risk of DVT using a validated clinical probability tool that categorised patients as having low, intermediate, or high risk of DVT; evaluated outpatient data separately if inpatients were included; evaluated DVT data separately if patients with pulmonary embolism were included; had 100% patient follow up at >3 months; documented DVT using ultrasonography, venography, or impedance plethsmography; and presented sufficient data for calculation of sensitivity and specificity of the D-dimer assay and prevalence of venous thrombosis stratified by clinical probability level. Study quality was assessed based on the recommendations of the Cochrane Methods Group on Systematic Reviews of Screening and Diagnostic tests.
- **Outcome**: incidence of objectively confirmed symptomatic DVT and pulmonary embolism among patients with a normal D-dimer test result, stratified by level of clinical probability.

**MAIN RESULTS**

6 studies each of diagnostic accuracy (n = 2199) and 6 studies of diagnostic management (n = 3232) met the selection criteria. Meta-analysis was done using a random effects logistic meta-regression model. The table contains pooled incidence rates of venous thrombosis among patients with a normal D-dimer test result, stratified by level of clinical probability. Pooled sensitivity for the highly sensitive D-dimer assays was 98% (95% CI 96 to 99) and specificity 46% (CI 28 to 67) resulting in a negative likelihood ratio of 0.5. The pooled sensitivity for the highly sensitive D-dimer assays was 77% (CI 65 to 86) resulting in a negative likelihood ratio of 0.16.

**CONCLUSIONS**

In patients with suspected deep venous thrombosis (DVT), a low clinical probability plus a normal result on the SimpliRED D-dimer test excludes a diagnosis of acute DVT. Furthermore, a normal result on the highly sensitive D-dimer test is effective for ruling out DVT in patients with a low to moderate clinical probability of DVT.

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