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The full report is titled "Meta-Analysis: The Value of Clinical Assessment in the Diagnosis of Deep Venous Thrombosis." It is in the 19 July 2005 issue of *Annals of Internal Medicine* (volume 143, pages 129-139). The authors are S. Goodacre, A.J. Sutton, and F.C. Sampson.

Clinical Diagnosis of Deep Venous Thrombosis

What is the problem and what is known about it so far?

Deep venous thrombosis (DVT) occurs when blood clots form in the large veins of the legs. Pieces of the clots can break off and travel through the bloodstream to the lungs. The clots can cause serious symptoms and even death if they are not diagnosed and treated quickly. Because people with DVT are treated with blood-thinning medicines that can cause serious bleeding, accurate diagnosis is very important.

Doctors use several strategies to diagnose DVT, including blood tests (D-dimer tests) that help measure whether a clot has formed and is breaking down, a scan that looks at blood flow in the veins (ultrasonography), and an x-ray taken after injecting dye into a vein (venography). To decide when to do any of the tests, doctors usually assess a patient's medical background, symptoms, and physical examination. We do not always know, however, which clinical findings are most useful for deciding when to do the tests.

Why did the researchers do this particular study?

To see which clinical findings are most useful to assess in patients with possible DVT.

What was studied?

51 studies that assessed the ability of clinical findings to sort participants into groups with different likelihoods of DVT; the studies involved 54 groups of patients.

How was the study done?

The authors searched the medical literature up to January 2005 and selected studies that recorded physicians' judgments or clinical findings before patients had diagnostic tests for DVT. In some instances, the physicians used a score, called the Wells rule, to sum the presence or absence of multiple clinical findings. The authors then combined the studies to see how well the clinical findings helped sort patients into groups with different probabilities of DVT.

What did the researchers find?

Several findings increased the probability of DVT, including a history of DVT, malignant disease, recent immobilization, a difference in calf diameter, and recent surgery. The absence of calf swelling and having no difference in calf diameter decreased the probability of DVT. Scoring the presence and absence of 9 items with the Wells rule correctly sorted the probability of DVT much better than did individual findings, particularly in younger patients and in patients without previous DVT.

What were the limitations of the study?

The authors found that the study samples, types and numbers of physicians, follow-up methods, tests to diagnose DVT, and findings varied among studies. It was difficult for the authors to summarize and explain all of the findings because the studies varied in many different aspects.

What are the implications of the study?

Scoring the presence and absence of multiple clinical findings, such as history of DVT, malignant disease, calf swelling, and recent surgery or immobilization, better estimates the probability of DVT than does relying on individual findings.

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