



## Issues and controversies in venous thromboembolism

(FEBRUARY 1999)

**TO THE EDITOR:** In their helpful review of diagnostic and therapeutic issues regarding venous thromboembolism,<sup>1</sup> Drs. Carman and Fernandez recommend thrombolysis as first-line therapy for upper-extremity deep venous thrombosis (DVT), but do not mention the important risk of "breakaway" embolism associated with such intervention.

In a comprehensive review of 329 patients with axillary and subclavian venous thrombosis, Becker et al<sup>2</sup> noted that only three patients developed pulmonary embolic complications during therapy with anticoagulants, thrombolytics, or surgery, but all three had been treated with thrombolytics. Pulmonary embolism was confirmed in two of these cases by ventilation-perfusion (V/Q) scan.<sup>3,4</sup> These three cases, among a total of 41 patients receiving thrombolytic therapy, represent a 7% incidence of potentially life-threatening embolic sequelae.

As Drs. Carman and Fernandez note, an uncontrolled case series that used a combination of anticoagulation, thrombolysis, and surgery<sup>5</sup> did not provide an effective comparison of these treatments. While we agree that a stronger rationale exists for thrombolytic therapy in selected high-risk patients with upper-extremity DVT, widespread use of thrombolytics in this clinical setting will remain controversial until controlled prospective trials comparing thrombolysis with anticoagulation alone are done.

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**IN REPLY:** Drs. Brodtkin and Brodtkin raise a valid concern. However, we believe the risk is overstated. If one were to perform a V/Q study on all patients with upper-extremity DVT, one would likely find pulmonary embolisms in equal numbers of patients regardless of whether they had received thrombolysis. For instance, Hingorani et al<sup>1</sup> recently documented the incidence of pulmonary embolism to be 7% in patients not treated with thrombolytic drugs—the same percentage that Becker et al found in patients who did receive thrombolysis.

The data appear equally reassuring in patients with lower-extremity DVT. Lower-extremity DVT, particularly iliofemoral DVT, carries a much greater risk of pulmonary embolism than does upper-extremity DVT: one study<sup>2</sup> found an incidence of 46% when all patients with iliofemoral DVT were screened with a V/Q scan, and most of these patients had no symptoms. Nevertheless, a recent study<sup>3</sup> of 77 patients with iliofemoral DVT treated with thrombolytic therapy (primary urokinase) documented pulmonary embolism in only 1 patient—1.3%. This figure may be low, because these patients did not have a V/Q scan unless symptoms or clinical suspicion raised the concern for pulmonary embolism. However, the extra cases that might be found by screening all DVT patients may not be clinically significant.

We agree that only a prospective controlled trial can settle this issue.

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