

The Reply



To the Editor:

The likelihood of performing a randomized controlled trial of unstable patients with pulmonary embolism, particularly elderly patients, in whom vena cava filters appear to reduce mortality,¹ is remote. Assuming 3.4%-4.5% of patients with pulmonary embolism are unstable,^{2,3} 59% are aged >60 years,⁴ and 33% would consent, it would be necessary to screen 22,500 patients with pulmonary embolism to recruit 100 elderly unstable patients in each arm. Support for such a large randomized controlled trial is not readily obtained. Death in unstable patients with pulmonary embolism occurred on the day of admission or day 1 in 39%-47% and within 2 days of admission in 50%-61%.⁵ Recruitment and filter insertion would be unlikely in such patients, so we would still be left with selection bias, as defined by Girard et al.

We evaluated unstable patients with a primary diagnosis of pulmonary embolism who did not have any of the comorbid conditions listed in the Charlson Index.^{5,6} Among such patients who received thrombolytic therapy (74% without filters), death from pulmonary embolism was 8.4%, versus 2.7% with a filter.⁵ Among such patients who did not receive thrombolytic therapy (77% without filters), death from pulmonary embolism was 42%, versus 27% with a filter.⁵ In order to respond more completely to Girard et al, we further analyzed the data from this investigation. Among unstable patients with a primary diagnosis of pulmonary embolism who had none of the comorbid conditions listed in the Charlson Index, death attributable to pulmonary embolism among those who received thrombolytic therapy was

730 of 7070 (10%) without a vena cava filter, compared with 80 of 2640 (3.0%) with a filter ($P < .0001$) (unpublished data from Stein and Matta).⁵ Among such patients who did not receive thrombolytic therapy, death attributable to pulmonary embolism was 830 of 1740 (48%) without a vena cava filter, compared with 170 of 680 (25%) with a filter ($P < .0001$).

In conclusion, unstable patients with a primary diagnosis of pulmonary embolism and no comorbid conditions showed fewer deaths attributable to pulmonary embolism with vena cava filters, just as all unstable patients with pulmonary embolism showed a lower all-cause case fatality rate with vena cava filters.

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<http://dx.doi.org/10.1016/j.amjmed.2014.02.043>

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Funding: None.

Conflict of Interest: None.

Authorship: Both authors had access to the data and a role in writing the manuscript.