

Letters

TO THE EDITOR

Systemic Thrombolysis is Still the First-Line Treatment for Unstable Pulmonary Embolism



We read Dr Rozenbaum's viewpoint on systemic thrombolysis (ST) for acute pulmonary embolism (PE) with interest.¹ We agree with Dr Rozenbaum that catheter-directed treatments have an expanding role in the treatment of PE. However, for unstable PE, ST is still the first-line treatment. Dr Rozenbaum cites a meta-analysis to question the efficacy of ST for unstable PE, citing a number needed to treat of 59. On a precise reading of Chatterjee's meta-analysis, the number needed to treat of 59 was calculated based on all patients with PE, both unstable and stable.² Of 2,115 patients, only 31 (1.5%) had unstable PE, and the meta-analysis did not perform a subgroup analysis on this small cohort, preventing any meaningful conclusions on patients with unstable PE.

Currently, the role of alternative treatments is limited for patients with unstable PE, and ST remains an integral part of management for these patients. The most recent randomized control trial on ST in patients with unstable PE is 29 years old. It was stopped after enrolling 8 patients with unstable PE. Four patients in the treatment arm survived, while the four patients who did not receive ST died.³ Consensus guidelines still maintain that ST is the first-line treatment for unstable PE based on this randomized controlled trial and other studies. These same guidelines assert that the evidence supporting catheter-directed therapies has only low certainty and recommend using them only in specific scenarios. Additionally, an increasing trend of PE mortality cannot be attributed to the failure of ST, as only a minority of patients with unstable PE receive ST when indicated.⁴ As such, Dr Rozenbaum's statement that "for many, the use of ST is becoming unethical" may be an overstatement, even in the minority of facilities able to rapidly institute procedural interventions in hemodynamically unstable patients.

ST should be employed for patients with unstable PE who have no contraindications to ST.⁵ This principle is especially true in centers with no access to catheter-directed therapies.

PE is a complicated, dynamic condition. Despite the potential benefits of ST, the inherent risks necessitate the development of other therapeutic strategies. As the field continues to explore catheter-directed therapies, ST should also be further studied with close attention to novel dosing regimens (eg, reduced-dose thrombolytics) that could maintain the therapeutic benefit of ST, limit the risk of hemorrhage, and prevent patients from undergoing surgery or catheter-directed therapies, which carry a separate set of risks.

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The authors attest they are in compliance with human studies committees and animal welfare regulations of the authors' institutions and Food and Drug Administration guidelines, including patient consent where appropriate. For more information, visit the [Author Center](#).

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