REPLY: Systemic Thrombolysis and Catheter-Based Therapies in Acute Pulmonary Embolism

I thank Dr Coelho and colleagues for their interest in the viewpoint[1] regarding the management of pulmonary embolism. The group disagrees with the opinion that the use of systemic thrombolysis is becoming unethical as first-line therapy. Nonetheless, their comment noting that part of the control arm ("context arm") in the FLAME (FlowTriever for Acute Massive PE) study received only anticoagulation[2] highlights the major shortcoming of systemic thrombolysis. Treatment with anticoagulation reflects real-world practice, as systemic thrombolysis is immensely underutilized in indicated cases due to the high bleeding risk and despite hemodynamic instability.[3] The comparison of percutaneous aspiration devices to the conservative group as a whole is appropriate because it represents the true standard treatment and the challenges of managing unstable pulmonary embolism. PEITHO-3 (Pulmonary Embolism International THrOmbolysis) (NCT04430569) is mentioned in the reply, but the trial excludes patients who are hemodynamically unstable, and therefore the results will not support the usage of systemic thrombolysis in high-risk pulmonary embolism.

Dr Coelho and colleagues argue that data on the low rates of major complications with percutaneous aspiration devices are difficult to interpret compared to systemic thrombolysis. While it is difficult to draw generalized conclusions on the effectiveness of percutaneous aspiration devices in high-risk pulmonary embolism from the heterogenous FLASH (FlowTriever All-Comer Registry for Patient Safety and Hemodynamics) registry, the high rates of technical success with low rates of device-related complications[4] are reproducible in centers that are utilizing the technology.

Dr Coelho and colleagues rightfully state that percutaneous aspiration devices are not available in all medical centers. Efforts to increase the availability of newer therapies are essential. The option of transferring patients for primary percutaneous coronary intervention is one example of limited resources concentrated to tertiary hospitals. Considering that systemic thrombolysis is, in practice, only used in a minority of patients, widespread adaptation of catheter-based therapies to an updated flowchart of acute pulmonary embolism management[5] is required to bridge this treatment gap.

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The author attests they are in compliance with human studies committees and animal welfare regulations of the author's institution and Food and Drug Administration guidelines, including patient consent where appropriate. For more information, visit the Author Center.

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