Commentary: Outside the box

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In this issue, Aragaki and colleagues propose dose titration for endobronchial ultrasound (EBUS)-directed thrombolysis of main pulmonary artery clots in a very meticulously designed set of experiments. Their approach is a very innovative means to potentially treat critically ill patients with massive pulmonary artery embolism (PE).

So, what is next? The authors propose some next steps that could eventually lead to the clinical application of EBUS-directed thrombolysis to treat patients with massive PE. The big-picture answer to this question is that we don’t know, and that is the most stimulating aspect of innovation. Innovation begets more innovation, and we don’t know where it will lead us. Although Aragaki and colleagues set on a path to develop a new method to treat patients with massive PE, they may end up with something even they might have not imagined. This type of research could directly or indirectly contribute to the development of more advanced EBUS scopes, safer thrombolytic agents, new targeted agents with fewer side effects, better methods to monitor the development of deep venous thrombosis and PE, further knowledge of the pathogenesis of massive PE, etc. The ramifications of any of these potential outcomes grow exponentially and can lead to innovation in other types of ultrasound technology, diagnosis, and treatment of other hypercoagulable states and so on. At this point my imagination has limits, the limits set by the box in which we train and practice. When someone thinks outside the box, they can only go so far with their imagination, because no one really knows what could lie outside. The only way for us to progress is to ask the questions for which no one has an answer. The most important contribution of Aragaki and colleagues’ research is thinking outside the box.

Reference