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1. Heikkilä I, Kuusisto H, Holmberg M, et al. Fast protocol for treating acute ischemic stroke by emergency physicians. *Ann Emerg Med.* 2019;73:105-112.
2. Brown MD, Burton JH, Nazarian DJ, et al. Clinical policy: use of intravenous tissue plasminogen activator for the management of acute ischemic stroke in the emergency department. *Ann Emerg Med.* 2015;66:322-333.

*In Reply:*



In our article titled “Fast Protocol for Treating Acute Ischemic Stroke by Emergency Physicians,”<sup>1</sup> we showed that emergency physician-directed acute care safely decreased both door-to-needle time and onset-to-treatment time of acute ischemic stroke patients treated with tissue plasminogen activator (tPA).

We appreciate the letter by Zwank<sup>2</sup> and fully agree that providing information about the risks and benefits of tPA treatment is essential. Furthermore, consent from the patient or close relative should be on the patient record when the treatment decision is made. This matter was not highlighted in our article<sup>1</sup> because our scope was to describe methods of how to shorten door-to-needle time.

In our hospital, lack of consent given by the patient or relative is considered a contraindication to tPA treatment. During our study period, all patients consented to tPA treatment.

Zwank raised a concern about whether it is possible to properly discuss the pros and cons of tPA treatment in such a limited time. Basically, there are 3 factors affecting possible extra delay resulting from shared decisionmaking during acute ischemic stroke protocol: general awareness of stroke in the society, the patient’s individual understanding, and physicians’ knowledge concerning the time dependence of acute ischemic stroke therapy.

In Finland, there was wide public discussion of tPA treatment for acute ischemic stroke after the landmark results from Helsinki University Hospital were published.<sup>3</sup> Capacity of individual patients and relatives certainly varies, depending on the individual and the acute situation. When emergency physicians are thoroughly stroke educated and understand the importance of the timing of tPA treatment

(together with inclusion and exclusion criteria), it is quite easy to discuss with the patient whether the stroke itself affects his or her capabilities. In their large meta-analysis, Emberson et al<sup>4</sup> found that irrespective of age or stroke severity, tPA increased the odds of a good stroke outcome time dependently, with odds ratios of 1.15, 1.26, and 1.75 in patients with an onset-to-treatment time of more than 4.5 hours, 3.0 to 4.5 hours, and less than 3.0 hours, respectively.

We urge emergency physicians to take an active role for the best outcome for acute ischemic stroke patients.

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1. Heikkilä I, Kuusisto H, Holmberg M, et al. Fast protocol for treating acute ischemic stroke by emergency physicians. *Ann Emerg Med.* 2019;73:105-112.
2. Zwank MD. Fast protocol for treating acute ischemic stroke by emergency physicians. *Ann Emerg Med.* 2019;74:315-316.
3. Meretoja A, Strbian D, Mustanoja S, et al. Reducing in-hospital delay to 20 minutes in stroke thrombolysis. *Neurology.* 2012;79:306-313.
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