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Fast Protocol for Treating Acute Ischemic Stroke by Emergency Physicians

To the Editor:

Heikkilä et al[1] demonstrated significant improvements in onset-to-treatment and door-to-needle times after a reorganization of the stroke treatment program at their hospital. I applaud them for taking the time to vigorously monitor this and for collecting appropriate data to publish in *Annals*. I suspect that their project reflects similar efforts and outcomes at many hospitals around the world as we all attempt to standardize and expedite the care of patients presenting with symptoms of stroke.

However, I am concerned that these efforts to ultimately decrease the time to tissue plasminogen activator (tPA) administration are causing physicians and institutions to ignore a key component of this therapy: shared decisionmaking, patient consent, or both. The 2015 American College of Emergency Physicians (ACEP) clinical policy on the use of intravenous tPA specifically noted that this medication "should be offered" to patients and that "when feasible, shared decisionmaking" should be included.[2] This policy is an update to a previous version from 2012 and specifically stresses "the importance of having a discussion with the patient or family about the potential benefits and harms of [intravenous] tPA."

In the article by Heikkilä et al, the median door-to-needle time after the intervention was 20 minutes. That is fast, but is it too fast? I suggest that it is challenging to reliably have a meaningful discussion or shared decisionmaking about the benefits and harms of tPA within this period when so much other care is being provided. The early components of patient care include the medic report or family member story, vital signs, intravenous line placement, laboratory testing, clinician evaluation, and computed tomography scan. When written as a single sentence, these steps seem that they can be accomplished very quickly; however, reality is often different. In addition, at institutions with a true team-based approach, there is usually a consultation of a neurologist/stroke specialist.

As an emergency medicine community, we should either collectively decide that intravenous tPA is standard of care and should be given or, alternatively, we should provide an acceptable and reasonable standard door-to-needle time that would allow for appropriate engagement of patient and family in the decision to give this medicine. Although I am doubtful that the former can be achieved, maybe the latter can. Otherwise, I fear that we will continue to be pushed toward a mantra of "as quick as possible," which I think ultimately defeats any realistic chance of including patients in this possibly life-changing decision.

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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,"[1] 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[2] 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[1] 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.[3] 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[4] 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.
4. Emberson J, Lees KR, Lyden P, et al. Effect of treatment delay, age, and stroke severity on the effects of intravenous thrombolysis with alteplase for acute ischaemic stroke: a meta-analysis of individual patient data from randomised trials. *Lancet*. 2014;384:1929-1935.