

COMMENTARY

## Intravenous tPA for Stroke: Putting the Controversy to Rest

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Hello. My name is Dr Mark Alberts, head of neurology at Hartford Hospital and physician-in-chief of the Ayer Neuroscience Institute for Hartford Healthcare System. Thank you for joining me.

I am at the 2018 American Academy of Neurology Meeting in Los Angeles, and I would like to update you on some recent controversies related to acute stroke care, specifically regarding the use of intravenous (IV) tissue plasminogen activator (tPA) for acute ischemic stroke.

First, let me provide some context. In 1996, the US Food and Drug Administration approved IV tPA for the treatment of acute ischemic stroke. Amazingly, even though IV tPA is still the only medical therapy shown to improve outcomes in patients with acute ischemic stroke, only a very small percentage of stroke patients actually receive tPA.

The reason most stroke patients do not receive IV tPA is due to its very narrow time window. Intravenous tPA must be administered within 4.5 hours of stroke onset—[a narrow treatment window because] patients first need to identify their symptoms, present to a hospital, undergo examination, and have a head CT scan before they can receive this therapy.

We know from National Institutes of Health studies, as well as studies in Europe, that IV tPA is a safe and effective treatment for reducing disability after a stroke when it is given within 4.5 hours from onset.<sup>[1,2]</sup> Because IV tPA is a powerful medication, it must only be given to carefully selected patients and in a closely monitored environment.

Recently, for reasons that are not clear to me, some of our cardiology colleagues have expressed major concerns about the safety and efficacy of IV tPA.<sup>[3]</sup> They have attempted to reanalyze decades-old studies on IV tPA, and are questioning the methodology, outcomes, and significance of study results.

Let me be clear: We [neurologists] have decades of experience using IV tPA in this patient population; it is a safe and effective medication in properly screened and affected patients. However, some of our colleagues in cardiology and emergency medicine are trying to turn back the clock, saying IV tPA should not be used, that it is not a safe or effective treatment.<sup>[3,4]</sup> These statements go against essentially every major medical and neurology guideline published throughout the world.

From a public health point of view, it is important to remember that there are many people in the world who do not have access to high-level technologies, such as thrombectomy devices and advanced brain imaging modalities. For many of these patients, IV tPA is the only medical treatment that can potentially improve stroke outcomes. Therefore, we need to make sure IV tPA is given safely and effectively to patients who are candidates for treatment.

For some of our colleagues, especially cardiologists, to say that IV tPA has no use is disingenuous. In fact, IV tPA was first studied in patients with acute myocardial infarction, and was found to be a safe and effective treatment for carefully selected patients in that population when it was given within a certain timeframe.<sup>[5,6]</sup> The same is true for acute ischemic stroke: IV tPA is a safe and effective treatment for stroke in a selected population when given within the 4.5-hour treatment window.

I hope this helps put to rest some of the controversy surrounding the use of IV tPA. We should not be looking for reasons to reduce the administration of tPA, but rather we should be looking for reasons to expand its use to those patients who are carefully selected, screened, and monitored.

Thank you very much for tuning in and listening to my update. Have a good day.

### References

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