

Specialized ambulance increases thrombolysis for stroke patients in 'golden hour'

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A specialized ambulance staffed with a neurologist and equipped with a computed tomographic scanner helped increase the percentage of patients with stroke who received thrombolysis to break down blood clots within the so-called 'golden hour,' the 60 minutes from time of symptom onset to treatment when treatment may be most effective, according to a study published online by *JAMA Neurology*.

The time to treatment with [tissue plasminogen activator](#) (tPA) to break down [blood clots](#) is crucial to how [patients](#) fare after [acute ischemic stroke](#). But when prehospital times are added to hospital delays the onset to treatment (OTT) within 60 minutes seems out of reach for most patients. An approach to shorten the OTT is prehospital [thrombolysis](#) in a specialized ambulance, according to background information in the study.

Martin Ebinger, M.D., of the Charité-Universitätsmedizin Berlin, Germany, and co-authors examined the achievable rate of [golden hour](#) thrombolysis in prehospital care and the effect it had on how patients fared. The authors used data from a study conducted in Berlin where weeks were randomized according to the availability of a stroke emergency mobile unit (STEMO) from May 2011 through January 2013.

Study results indicate there were 3,213 emergency calls for suspected stroke during weeks when STEMO was available and 2,969 calls during control weeks when STEMO was not available. Overall, 200 of 614 patients with stroke (32.6 percent) received thrombolysis when the STEMO was deployed and 330 of 1,497 patients (22 percent) received thrombolysis in conventional care. Median OTT was 24.5 minutes shorter after STEMO deployment compared with conventional care. In all ischemic strokes, the rate of golden

hour thrombolysis increased from 16 of 1,497 patients (1.1 percent) during conventional care to 62 of 614 (10.1 percent) after STEMO deployment. The median OTT was 50 minutes in golden hour thrombolysis vs. 105 minutes in all other thrombolysis. Patients with golden hour thrombolysis had no higher risks for seven- or 90-day mortality compared with patients with longer OTT and were more likely to be discharged home.

"The use of STEMO increases the percentage of patients receiving thrombolysis within the golden hour. Golden hour thrombolysis entails no risk to the patients' safety and is associated with better short-term outcomes," study notes.

In a related editorial, Steven Warach, M.D., Ph.D., of the University of Texas Southwestern Medical Center, Austin, writes: "There is no doubt that, in Berlin, STEMO significantly shortened the time to thrombolytic treatment, which may translate to clinical benefits. Let there also be no doubt that the mobile stroke unit is here to stay and is starting to disseminate into prehospital [stroke](#) care. Many questions need to be answered in order to determine the appropriate niche where the benefit justifies the intensive use of resources that this approach requires. It is the duty of the early adopters to resist the temptation to uncritically embrace this approach as a certain good and to address these issues through rigorous clinical investigations."

More information: *JAMA Neurol.* Published online November 10, 2014. [DOI: 10.1001/jamaneurol.2014.3188](https://doi.org/10.1001/jamaneurol.2014.3188)
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