



Specialised Ambulance Increases 'Golden Hour' Thrombolysis



The use of a stroke emergency mobile unit (STEMO) helped increase the percentage of stroke patients who received thrombolysis to break down blood clots within the so-called 'golden hour', the 60 minutes from time of symptom onset to treatment, a window of time when treatment may be most effective, according to researchers in Germany. A STEMO is a specialised ambulance staffed with a neurologist and equipped with a computed tomography scanner.

The time to treatment with tissue plasminogen activator (tPA) to dissolve blood clots is crucial to how patients fare after acute ischaemic stroke, researchers explain. When prehospital times are added to hospital delays, however, the onset to treatment (OTT) within 60 minutes seems not possible for most patients. Prehospital thrombolysis in a specialised ambulance is one method to shorten the OTT.

The new study, published online by *JAMA Neurology*, examined the achievable rate of golden hour thrombolysis in prehospital care and the effect it had on patient outcomes. Martin Ebinger, MD, of the Charité-Universitätsmedizin Berlin, and co-authors used data from a study conducted in Berlin where weeks were randomised according to the availability of STEMO from May 2011 to January 2013.

Study results show that 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. Dr. Ebinger et al. reported these key findings:

- 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 ischaemic 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.

Notably, 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," the authors concluded.

In an accompanying editorial, Steven Warach, MD, PhD, of the University of Texas Southwestern Medical Center, Austin, said: "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."

Source: JAMA

Image Credit: University Hospitals of Morecambe Bay NHS Trust

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