

Fast treatment via mobile stroke unit reduced survivor disability

20 February 2020

Treating stroke patients in specialized ambulances speeds treatment and reduces patients' disability, according to late breaking science presented today at the American Stroke Association's International Stroke Conference 2020.

The Berlin Prehospital Or Usual Delivery (B_PROUD) trial investigated if prehospital treatment in a mobile [stroke](#) unit could improve patient outcomes compared to usual care, which was emergency transportation in a conventional ambulance and in-[hospital treatment](#). Patients (total 749, average age 73, 46% females) were assigned to treatment based on the availability of three mobile stroke units in the metropolitan area of Berlin, Germany, and compared with patients (total 794, average age 74, 48% females) who received conventional care.

Mobile stroke units are ambulances staffed with emergency medicine neurologists and equipped with a CT scanner and a lab designed to enable specific stroke treatment at the scene. Prehospital treatment consisted of administering medications to dissolve the clot blocking blood flow in or to the brain ([ischemic stroke](#)). Timing is key because the clot-busting medication alteplase should be administered within 4.5 hours of stroke symptoms.

Researchers found that:

- 60% of patients assigned to the mobile stroke unit received clot-busting treatment with alteplase if a mobile stroke unit was available, compared to 48% of patients who received conventional treatment in the hospital;
- the time to treatment was shortened by an average of 20 minutes when a mobile stroke unit was dispatched; and
- the use of a mobile stroke unit reduced the likelihood and severity of disability and death at three months by 26%.

"While we had anticipated better outcomes in the patients treated in the mobile stroke units, we are amazed by the magnitude of the effects," said lead study author Heinrich Audebert, M.D., professor in the department of neurology and Center for Stroke Research at Charité Universitätsmedizin in Berlin. "It is obvious that clot-busting treatment is most effective if it is applied in the ultra-early phase of stroke—ideally within the first or 'golden hour' of symptom onset."

Since treatment within the first hour of symptom onset happens rarely in conventional care, Audebert said [health care providers](#) should consider ways to optimize treatment so it can begin while in route to the hospital.

"Stroke treatment is more effective the earlier it starts," he said. "Just waiting until the patient arrives at the hospital is not enough anymore."

Provided by American Heart Association

APA citation: Fast treatment via mobile stroke unit reduced survivor disability (2020, February 20)
retrieved 25 April 2021 from
<https://medicalxpress.com/news/2020-02-fast-treatment-mobile-survivor-disability.html>

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