

Study finds paramedics skilled in identifying strokes

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(Medical Xpress) -- If a paramedic suspects a patient is having a stroke, the paramedic is probably right, a Loyola University Medical Center study has found.

Researchers examined the records of 5,300 patients who were brought to Loyola's [emergency room](#) by emergency medical services (EMS). [Paramedics](#) were able to identify [stroke](#) patients with a 99.3 percent specificity. (In diagnosing disease, a high specificity rate indicates there's a high probability the patient actually has the disease.)

"If a paramedic thinks a patient is having a stroke, that should be a reliable indicator that the hospital's stroke team should be activated," said Dr. Michael Schneck, a co-author of the study, which will be presented at the 64th annual meeting of the American Academy of Neurology in New Orleans.

Dr. Mark Cichon, who heads Loyola's emergency room and is another co-author, said the findings illustrate that paramedics "are very well trained in stroke recognition." He added that stroke is one of many emergency conditions in which paramedics are trained to initiate treatment before the patient arrives at the hospital.

Schneck is a professor in the departments of Neurology and [Neurological Surgery](#) of Loyola University Chicago Stritch School of Medicine and medical director of the Neurosciences [Intensive Care Unit](#). Cichon is a professor in the Department of Surgery and division

director of [Emergency Medical Services](#). Other co-authors are Elizabeth Wild (first author); Yongwoo Kim, MD; Alexander Venizelos, MD; and David Hyman.

Most strokes are caused by blood clots in the brain. If given promptly, the clot-busting drug tPA, in certain cases, can dissolve the clot and stop the stroke before it causes permanent damage. But before tPA is given, a patient must undergo a CT scan to confirm the stroke is caused by a clot. (About 15 percent of strokes are caused by bleeding in the brain; in such cases, administering tPA could make strokes worse.)

Since every minute counts, hospitals are striving to reduce the "door-to-needle" time -- the length of time it takes from when a stroke patient arrives at the emergency room door until the patient is given intravenous tPA. One way Loyola is cutting times is by having the ambulance radio ahead when it is bringing in an apparent stroke patient. Loyola's stroke team then is activated and ready to go into action as soon as the patient arrives, Cichon said.

In the study, Loyola researchers reviewed the records of 5,300 patients who were transported by EMS to Loyola between Oct. 1, 2010, and June 30, 2011.

While the EMS specificity rate in identifying strokes was 99.3 percent, the sensitivity rate was only 51 percent. In other words, when paramedics suspected patients were having strokes, they were probably correct -- but they also missed many cases. Of the 96 actual strokes, paramedics correctly identified 49 cases, but missed 47. Paramedics were most likely to miss strokes in patients younger than 45.

"Sensitivity of EMS impression of stroke still requires improvement to reduce time to treatment for acute [stroke patients](#)," researchers wrote.

Although the study involved only one center, it nevertheless provides a representative EMS snapshot, Cichon said. He noted that Loyola's EMS system includes a diverse mix of 54 municipalities and private ambulance companies.

Provided by Loyola University Health System

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