

Weekend strokes may receive more aggressive treatment

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Stroke patients admitted to the hospital on the weekend appear more likely to receive the clot-dissolving medication tissue plasminogen activator than patients admitted during the week, according to a report in the January issue of *Archives of Neurology*. However, stroke death rates appear similar among weekend and weekday admissions.

"Although hospitals operate around the clock every day of the year, there are inevitable staffing differences during shifts, and there may be differences in the availability of diagnostic modalities or treatment options for care," the authors write as background information in the article. Some investigators have speculated that a combination of factors—including shortages in resources, expertise and providers—lead to less aggressive and lower quality care on the weekends vs. weekdays.

Because it is unexpected, potentially serious and requires [emergency care](#), stroke offers an opportunity to study rates of aggressive treatment and death, the authors note. Tissue plasminogen activator has been shown to decrease disability among patients experiencing an [acute ischemic stroke](#), which occurs when a blood clot or other substance blocks [blood flow](#) to the brain. However, the drug must be administered within three hours from the onset of symptoms. "Because of this short treatment window for the administration of tissue plasminogen activator, patients need around-the-clock access to high-quality and aggressive care," the authors write.

Abby S. Kazley, Ph.D., and colleagues at Medical University of South

Carolina, Charleston, studied rates of tissue plasminogen activator administration, along with death rates, among 78,657 patients admitted to Virginia hospitals with acute ischemic strokes between 1998 and 2006. Of these, 20,279 were admitted on weekends and 58,378 during the week.

Patients admitted on the weekends were 20 percent more likely to receive tissue plasminogen activator, which was administered to 229 weekend patients and 543 weekday patients. No statistically significant difference was observed in death rate between the two groups (3,993 patients admitted on weekdays died, compared with 1,420 admitted on weekends).

The similarity in death rate indicates that patients who receive tissue plasminogen activator are more likely to die in the hospital than those who do not, the authors note. This may be because physicians tend to use the medication to treat more severe strokes, or because factors such as sex and race/ethnicity influence death risk more than the receipt of tissue plasminogen activator.

The differences in the aggressiveness of care may be explained by differences in access to equipment or clinicians, who might be busier with other patient care responsibilities during the week, the authors note. "Elective surgical procedures on weekends are rare, and this may contribute to decreased traffic and waiting time for diagnostic equipment, and result in quicker and more efficient diagnosis and determination of treatment," they write. "Reduced road traffic and job obligations on weekends may contribute to the possibility that patients with acute ischemic stroke arrive sooner at the hospital."

"Further study on care variations that may improve patient outcomes is needed," they conclude.

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