



PROFESSION

New "weekend effect" seen in cardiac care

Patients hospitalized on weekends with atrial fibrillation have higher death rates. A national initiative helped eliminate the weekend gap in heart attack care.

By KEVIN B. O'REILLY, amednews staff. Posted July 30, 2012.

Research into many kinds of hospital care has found disparities in the morbidity and mortality outcomes for patients who seek treatment during the week compared with those unfortunate enough to get sick on weekends. This "weekend effect" has been demonstrated in hospital treatment of pulmonary embolism, gastrointestinal bleeding, diverticulitis and more.

Now a study of nearly 90,000 U.S. hospitalizations for atrial fibrillation has found another gap in weekend care. About 20% of the irregular heart-rhythm patients studied were hospitalized over the weekend, and 1.1% of these patients died. That is compared with 0.9% of the patients admitted during the week. After adjusting for hospital and patient characteristics and patient comorbidities, the weekend patients had a 24% higher chance of dying compared with weekday patients.

The weekend patients were about half as likely to receive electrical cardioversion, a procedure that uses electric shock to restore a patient's normal heart rhythm. When weekend patients did receive cardioversion, they waited longer for the treatment, said the study of nationwide data from 2008, published July 15 in *The American Journal of Cardiology*.

"I see many patients admitted for atrial fibrillation on the weekends," said the study's lead author, Abhishek Deshmukh, MD, a cardiology fellow at the University of Arkansas for Medical Sciences in Little Rock. "I thought, personally, that we are probably missing cardioversion in some of these patients.

"It requires a lot of manpower to do [cardioversion] on an elective basis, and it would be difficult to organize this over the weekend. In my anecdotal experience, we're probably not cardioverting much on the weekends unless the patient is extremely sick."

Cardiologists interviewed for this article said more research needs to be done to verify that the weekend effect is real in hospital treatment of atrial fibrillation. The rate of electrical cardioversion is unlikely to explain the higher weekend death rate, because the procedure has not been shown to be superior to treating atrial fibrillation with heart-rate controlling medications alone, said Stuart Winston, DO, a cardiac electrophysiologist at the Michigan Heart & Vascular Institute of St. Joseph Mercy Health System in Ann Arbor.

More weekday admissions could be elective and thus a less risky population overall, said Dr. Winston, a member of the American College of Cardiology's board of trustees.

"Weekend admits are almost always going to be a sicker group and come through the emergency department," he added.

Harlan M. Krumholz, MD, agreed that the study's limitations create uncertainty about whether a weekend effect is happening in atrial fibrillation. He noted, however, that there are systemic reasons why the weekend effect could be real.

"Systems on the weekend tend to be different than the workweek, and hospitals should reflect on whether there are vulnerabilities in our systems that create opportunities for errors, miscues and oversights that could put patients at greater risk," said Dr. Krumholz, a cardiologist and director of the Yale-New Haven Hospital Center for Outcomes Research and Evaluation in Connecticut.

Eliminating the "door-to-balloon" gap

Improvements are possible. Dr. Krumholz helped formulate a 2006 American College of Cardiology quality initiative on heart-attack care. The project helped hospitals deliver balloon angioplasties within 90 minutes — the "door-to-balloon" time — to patients arriving at the hospital with ST-segment elevation acute myocardial infarction.

"In the door-to-balloon project, we found that hospitals improving their overall systems and putting into place stronger policies and procedures were able to not only improve their times, but to eliminate the disparities between the workweek and the weekend," Dr. Krumholz said.

In 2000, weekend heart-attack patients had a 10% higher death rate than those treated during the workweek, according to an analysis of nationwide data that Dr. Deshmukh presented last year at the Transcatheter Cardiovascular Therapeutics meeting in San Francisco. By 2008, he reported, the gap had disappeared.

The most important message from this kind of research is to encourage physicians and hospitals to improve care regardless of when patients are admitted, said Christopher Granger, MD, a spokesman for the American Heart Assn. and director of the cardiac care unit at the Duke Clinical Research Institute in Durham, N.C.

"There are differences in how we manage people according to the day of the week and the time of day," he said. "This should make us, as health care providers, review our standardized protocols for how we treat patients, to assure that no matter when they

Make us your health care provider, review our standard care protocols for all the great patients, to assure that no matter when they present that they're getting evidence-based, guideline-based care."

ADDITIONAL INFORMATION:

How weekends affect heart patients

Patients with atrial fibrillation hospitalized on weekends fare worse than patients who come to the hospital during the week, according to unadjusted average figures from nearly 90,000 U.S. admissions.

Variable	Weekend admission	Weekday admission
Received cardioversion	7.9%	16.2%
Length of stay in days	3.6	3.5
Mortality rate	1.1%	0.9%
Total charges	\$22,000	\$26,000

Source: "Comparison of outcomes of weekend versus weekday admissions for atrial fibrillation," *American Journal of Cardiology*, July 15 (ncbi.nlm.nih.gov/pubmed/22481013/)

WEBLINK

"Worse Outcomes in Patients Undergoing Urgent Surgery for Left-Sided Diverticulitis Admitted on Weekends vs. Weekdays: A Population-Based Study of 31,832 Patients," *Archives of Surgery*, July 1 (archsurg.jamanetwork.com/article.aspx?doi=10.1001/archsurg.2012.825)

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"Pulmonary Embolism: The Weekend Effect," *Chest*, March 29 (www.ncbi.nlm.nih.gov/pubmed/22459777/)

"A Comparison of Rate Control and Rhythm Control in Patients with Atrial Fibrillation," *The New England Journal of Medicine*, Dec. 5, 2002 (www.nejm.org/doi/full/10.1056/NEJMoa021328)

"Comparison of outcomes of weekend versus weekday admissions for atrial fibrillation," *American Journal of Cardiology*, July 15 (www.ncbi.nlm.nih.gov/pubmed/22481013/)

D2B [Door to Balloon] Alliance for Quality (www.d2balliance.org/)

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