

Extracts

Rise In Heart Arrhythmias Linked To 9/11 Attacks

In the month after the Sept. 11, 2001 attack on the World Trade Center, millions grappled with the emotional heartache of a national tragedy.

Scientists now have discovered new evidence of physical consequences for the heart as well among patients living hundreds of miles from Ground Zero who rely on a pacemaker-like device that corrects dangerously rapid arrhythmias with electric shock.

University of Florida researchers found that patients who saw a doctor for routine monitoring of the device, known as an implantable cardioverter defibrillator, or ICD, had a nearly three-fold increase in the number of shocks they received in the four weeks after Sept. 11. The scientists presented their findings in March at the annual scientific meeting of the American College of Cardiology in New Orleans.

An estimated 400,000 people die from unstable heart rhythms each year. Experts say an additional 80,000 receive an ICD, which works by constantly monitoring the heartbeat and halting dangerously rapid rhythms by delivering a small electrical jolt to the heart. It also can correct abnormally slow heart rhythms by pacing the heartbeat with electrical pulses.

UF experts collaborated with researchers at St. Luke's-Roosevelt Hospital in New York, who previously noted an increase in the incidence of arrhythmias and the frequency of ICD shocks among patients living in the New York metropolitan area in the month after the attack. The current study was the first to show a similar effect in patients living at a distance. The findings prompt speculation that terrorism, major life stress and mass disasters might trigger adverse effects among heart patients nationwide, even

if they live in an area not directly touched by these events.

"This is the first time after a tragedy has occurred in our country that anybody has looked to see whether it affects patients all across the country," said Dr. Omer Shedd, a postdoctoral fellow in cardiovascular medicine at UF's College of Medicine. "Because the World Trade Center attacks were so heavily publicized — virtually everybody in the country was exposed to that tragedy — we thought we may find an increase in morbidity and possibly mortality in our area. The implications are that the event had a much more widespread effect than previously recognized."

Physicians increasingly acknowledge that emotional stress is a powerful stimulus for cardiovascular events. Previous research has directly linked cardiovascular and psychological reactions in people experiencing sudden and severe life stress, such as the aftermath of a natural disaster or the terror of war.

"There are some data to suggest that a lot of arrhythmias are anxiety-driven," Shedd said. "When people become anxious, the levels of certain hormones in the body increase, and that can trigger rhythm problems and heart problems."

If doctors could better characterize or identify patients prone to experiencing high levels of anxiety, whether it's related to a national event or an event at home such as the loss of a family member, then perhaps they could help prevent arrhythmias and other cardiovascular complications, Shedd said.

For the current study, UF scientists reviewed the medical records of 132 Floridians, mostly men, who were seen for routine checkups at UF or at

Gainesville's Malcolm Randall Veterans Affairs Medical Center, both in the month before and the month after the Sept. 11

attack. The average age of those enrolled in the study was about 63. The frequency of heart arrhythmias requiring ICD treatment increased by more than 68 percent among the study participants shortly after the attack. Patients with arrhythmias in the month before also experienced twice as many in the month afterward.

In all, 11 percent of study participants had abnormal heart rhythms in the month afterward, compared with 3.5 percent in the month before.

"These data provide real-world evidence that stress affects both the mind and the heart," said UF psychologist Sam Sears Jr. of the College of Public Health and Health Professions "Even witnessing a national tragedy has a similar effect as experiencing a tragedy. It doesn't have to be a death in your family for it to affect the heart."

In coming months, researchers will continue to assess the effects of patient anxiety, depression and other psychological problems on arrhythmias, and on the incidence and frequency of shocks in patients with ICDs.

"One of the things we'd like to do is find better ways to identify those patients before these kinds of events happen," Shedd said.

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