



## CARDIOLOGY

### ICD Shocks: Which Comes First, the Shock or the Anxiety?

Shocks from an implanted cardioverter defibrillator (ICD) are a predictor of anxiety, not a consequence, according to researchers from the University of Würzburg, the University of Tübingen, the General Hospital of Freudstadt, the Clinical Center Fulda, and the University of Frankfurt, all in Germany.

As many as 38% of ICD patients have clinically relevant anxiety; subclinical expressions of anxiety have been reported in as many as 87% of cases, declining significantly only 2.5 years after implantation. Anxiety has been suggested as an independent predictor of mortality in heart failure patients. However, the researchers note that other studies have found that ICD patients do not have higher levels of anxiety than do pacemaker patients, patients randomly assigned to standard medical therapy, or patients with coronary artery disease. How to explain that discrepancy? The researchers suggest that an important factor may be that ICD patients who experience ICD shocks are more likely to experience anxiety disorders and are characterized by higher tension, psychological distress, worse mental health and vitality scores, and fatigue.

The study followed 54 patients undergoing first-time ICD implantation. They were assessed for anxiety, frequency of ICD shocks, and antitachycardia pacing (ATP) up to 2 days before implantation (T0) and 12 months later (T1).

Anxiety at T0 did not predict the frequency of ICD shocks at T1, but

ICD shocks significantly predicted increased anxiety at T1. Interestingly, the researchers say, ICD shocks did not increase anxiety above the T0 levels, but rather prevented its reduction.

According to files stored by the ICDs, 22 patients received at least 1 shock from the ICD during the year following implantation; 5 patients received 5 shocks each, and 1 patient received 31 shocks. Log files also showed that 15 patients received  $\geq 1$  ATP within the follow-up period; the maximum was 147 ATPs in 1 patient.

The researchers cite studies that report adverse effects of ICD shock only when the number of shocks per individual exceeds 5; the current study was characterized by an “unusually high” rate of ICD shocks, which could lead to stronger conditioning of the anxiety response. Technologic advances have reduced the number of inappropriate shocks, but memories of preimplantation symptoms and ICD shocks could still cause anxiety. In this study, most patients remembered all ICD shocks long after their occurrence.

Screening for psychosocial issues at the time of implantation may help reduce many complications, such as the effects of depression on medication compliance or the effects of anxiety on mobility, the researchers say. Beyond that, however, their data highlight the importance of keeping shocks to a minimum. And when patients experience ICD shocks—despite all medical effort to avoid them—monitoring the patient’s psychological response and coping resources is key.

Source: Schulz SM, Massa C, Grziela A, Dengler W, Wiedemann G, Pauli P. *Heart Lung*. 2013;42(2):105-111. doi: 10.1016/j.hrtlng.2012.08.006.

## MENTAL HEALTH

### Understanding Self-Harm

Researchers from the Norwegian Institute of Public Health and the University of Oslo, both in Oslo; and the Norwegian University of Science and Technology in Trondheim, all in Norway, analyzed responses to a survey that was part of a large quantitative study relating to self-harm among young Norwegian adults in an attempt to challenge “commonly accepted understandings [of self-harm] in terms of method, outcome, and intentions.” People who had ever self-harmed were asked to describe what they had done. Of 122 participants who said they had harmed themselves, 96 were women, with a mean age of 23 years.

Most respondents seemed to accept that the cultural understanding of self-harm was cutting-type behaviors (eg, cutting, scratching, or poking sharp objects into the skin), which some researchers have called “nonsuicidal self-injury.” The study participants seemed to make a distinction between self-harming behaviors, such as cutting, and other more lethal methods, such as overdosing. Self-harm also took less visible forms, such as the lack of self-care and reckless behavior. Men, for example, may cope with distress by abusing alcohol, which can go unrecognized in societies where binge drinking is considered socially acceptable.

A common reason for nonsuicidal self-harm was emotional coping, which only the women described by saying, for example, “the physical pain drowned out the mental pain.” The researchers note that rather than being unstable and irrational, many people who cut themselves are in control of what they’re doing as a

strategy for dealing with their pain before it becomes overwhelming. Additionally, they say, these actions may even be lifesaving.

The participants did not, unlike clinical literature, talk about psychiatric reasons as a cause for self-harm, although some referred to depression, anxiety, or an eating disorder; more participants may have had a diagnosed mental health problem but did not mention it. Respondents found social and emotional difficulties more important than any potential underlying psychiatric disorder. The researchers note that nonsuicidal self-injury has been proposed as a disorder in the American Psychiatric Association's latest volume, *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition*; they call that "an attempt to pathologize a particular reaction to emotional distress."

The study findings underscore some of the complexities involved in determining intent. Many clinicians working with patients who engage in nonsuicidal self-harm, the researchers caution, may consider them not at risk of suicide, which could lead to inappropriate psychological treatment. But nonsuicidal self-harm, they stress, is predictive of suicidality: Self-harm with and without suicidal intent may just be different degrees of the same behavior.

The participants' descriptions also provided insight into the strategies they use for explaining their self-harm, such as minimizing, distancing, and hiding. Those strategies, adaptive in a society that stigmatizes the behavior, are problematic because they can lead to isolation rather than treatment. For example, some people who self-harm may deal with the wounds in private to avoid judgment by medical staff. One study found that people receiving medical treatment were ashamed of having to expose their feelings of despair. Because

more women than men engage in self-harm, men may face additional challenges in having their problem recognized and getting help. It's important to intervene to reduce shame, denial, and secrecy, the research-

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ers urge, by promoting well-being, help-seeking, and destigmatization of those who self-harm.

Source: Straiton M, Roen K, Dieserud G, Hjelmeland H. *Arch Psychiatr Nurs*. 2013;27(2):78-83. doi: 10.1016/j.apnu.2012.10.008.

## PAIN MANAGEMENT

### The Link Between C-Reactive Protein and Low Back Pain

Could systemic inflammation be a "missing link" between obesity and low back pain (LBP)? Researchers from Ohio State University in Columbus and Creighton University in Omaha, Nebraska, posit the connection in this way: Obesity creates a physiologic environment of chronic, low-level systemic inflammation. Chronic inflammation is linked to osteoarthritis and some musculoskeletal pain. Biomarkers of inflammation, such as C-reactive protein (CRP), may lead to pain, because they inhibit neural transmission through the dorsal root ganglion and reduce pain thresholds.

To test their hypothesis about the

interrelationship of obesity, systemic inflammation, and LBP, the researchers analyzed data on 15,322 participants from the 1999 to 2004 National Health and Nutrition Examination Survey databases. Nearly two-thirds of the participants were overweight or obese based on body mass index (BMI) classifications, and about 40% reported the presence or history of LBP.

Those with lower central adiposity (measured by waist circumference) had the lowest prevalence of reported LBP. Patients with LBP were more likely to be obese, have higher mean BMIs ( $P < .001$ ), and have significantly higher levels of CRP ( $P = .021$ ), compared with those without LBP. Overall, adults with elevated CRP had 1.74 greater odds of reporting LBP than did those without inflammation. Obese adults had 2.87 greater odds of reporting LBP if they had elevated CRP levels than did those without high CRP.

The researchers point to other studies that have shown increased levels of systemic inflammation in conditions associated with LBP, such as sciatica and herniated disks. To their knowledge, however, this is the first study that has shown a significant association between high levels of CRP and LBP.

Their findings support the idea that proinflammatory cytokines may be implicated in the complex pathways leading to musculoskeletal pain, the researchers say. Moreover, CRP concentrations have been shown to drop with exercise. Thus, exercise, which can mitigate both inflammation and obesity, may also help prevent or reduce LBP. ●

Source: Briggs MS, Givens DL, Schmitt LC, Taylor CA. *Arch Phys Med Rehabil*. 2013;94(4):745-752. doi: 10.1016/j.apmr.2012.11.026.



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