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## Anti-tachycardia pacing was associated with better survival than shock therapy

By

Patients with implantable cardioverter defibrillators who had ventricular arrhythmias and were treated solely with anti-tachycardia pacing had lower mortality than those treated with shock therapy.

Researchers from several U.S. sites evaluated mortality information from a population of 2,135 patients with ICDs across four clinical trials. They sought to determine whether mortality was influenced by the type of therapy delivered (either anti-tachycardia pacing or shocks). The researchers also used Cox models to evaluate the effects of baseline characteristics, ventricular tachycardia, fast ventricular tachycardia, ventricular fibrillation and therapy type on mortality. Patients were followed for a mean of 10.8 months.

The researchers analyzed 5,376 spontaneous arrhythmic episodes, with 24.3% of patients receiving either appropriate shocks (50.6%) or anti-tachycardia pacing only (49.4%). Of those, 3,934 episodes were treated and 1,339 were fast ventricular tachycardia episodes. Thirty-two percent of the fast ventricular tachycardias were treated with shock therapy and 68% were treated with anti-tachycardia pacing therapy. Both ventricular tachycardia and fast ventricular tachycardia episodes treated with anti-tachycardia pacing only were not associated with an increase in episode mortality risk.

Ventricular tachycardias treated with shock therapy, however, were associated with a 32% increase in episode mortality risk. According to the researchers, patients with no ventricular arrhythmia (93.8%) of anti-tachycardia pacing only (94.7%) had the highest survival rates, whereas patients treated with shock therapy had the lowest survival rates (88.4%). Mortality predictors included age ( $P<.0001$ ), NYHA functional Class III/IV ( $P<.0001$ ), coronary disease ( $P=.01$ ) and cumulative ventricular arrhythmia ( $P<.0001$ ).

“Historically, near-total reliance on shocks for terminating ventricular arrhythmia probably underestimated the survival benefit of ICDs, and we should consider changes in device programming as well as additional treatment strategies to reduce shocked ventricular arrhythmia episode burden,” researcher **Michael O. Sweeney, MD**, of the cardiac arrhythmia service at Brigham and Women’s Hospital in Boston, said in a press release.

[Sweeney MO. \*Heart Rhythm\*. 2010;7:353-360.](#)



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