

rhythm. Powell et al. (1) discussed their results in the context of MADIT-RIT (Multicenter Automatic Defibrillator Implantation Trial Reduce Inappropriate Therapy) (2) data assessing whether the 2 results are contradicting and concluded that “combining the results of the 2 studies, one could conclude that unnecessary ATP [antitachycardia pacing] may increase mortality, while unnecessary shocks for sinus tachycardia, SVT [supraventricular tachycardia], or noise/artifact/oversensing does not appear to affect long-term survival.” Our recently published experience (3)—not available at the time of this publication—confirms the finding reported by Powell et al. (1) that the inappropriate shock itself does not appear to be associated with a worst outcome. With this further confirmation in a real-life population, the question on the possible explanation for the reduced mortality observed in the MADIT-RIT study still remains open.

In the MADIT-RIT control arm, ATP therapy was delivered to treat slow tachycardia, regardless of patients’ previous history of arrhythmia; this, associated with a lost to follow-up rate greater than 11%, may potentially have had an effect on the reported mortality data.

Despite the association of unnecessary ATP therapy with a worse prognosis cannot be excluded for ATP therapies delivered to treat slow rhythms, it would be interesting to have details on the programming zones of patients who died in the ALTITUDE analysis. We believe that inappropriate and unnecessary aggressive ICD programming may represent 1 of the key factors for negative outcome of patients implanted with ICDs.

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REFERENCES

1. Powell BD, Saxon LA, Boehmer JP, et al. Survival after shock therapy in implantable cardioverter-defibrillator and cardiac resynchronization therapy-defibrillator recipients according to rhythm shocked: the ALTITUDE survival by rhythm study. *J Am Coll Cardiol* 2013;62:1674-9.
2. Moss AJ, Schuger C, Beck CA, et al. Reduction in inappropriate therapy and mortality through ICD programming. *N Engl J Med* 2012;367:2275-83.
3. Gasparini M, Proclemer A, Klersy C, et al. Effect of long-detection interval vs standard-detection interval for implantable cardioverter-defibrillators on antitachycardia pacing and shock delivery: the ADVANCE III randomized clinical trial. *JAMA* 2013;309:1903-11.

Reply

Avoiding Unnecessary Aggressive ICD Programming After MADIT-RIT and ADVANCE III Trials

I appreciate the comments by Dr. Gasparini, and I agree with them. Regarding implantable cardioverter-defibrillator (ICD) programming in our study, one-half of the patients in the ALTITUDE Survival by Rhythm Study (1) were taken from the ALTITUDE REDUCES (Real World Evaluation of Dual-Zone ICD and CRT-D Programming Compared to Single-Zone Programming) study (2) population in which patients were retrospectively evaluated for incidence of shocks and mortality based on ICD programming. The annual incidence of shocks and pre-shock mortality were highest in patients programmed with single-zone ventricular fibrillation ≤ 170 beats/min (20.1% of patients received shocks; 2.5% mortality) or dual-zone ventricular tachycardia (VT) ≤ 170 beats/min (12.3% of patients received shocks; 2.0% mortality). The lowest annual incidence of shocks (5.5%) and pre-shock mortality (1.0%) was in the group programmed with dual-zone VT ≥ 200 beats/min. Because it was a retrospective study, we cannot know with certainty if the higher mortality in the groups with a lower programmed VT or ventricular fibrillation zone was related to ICD programming or if these patients were programmed with lower zones because of previous episodes of slower ventricular arrhythmias. Whether or not inappropriate antitachycardia pacing increases mortality is not completely known at this time. However, programming higher detection rates for primary prevention ICDs and/or using ICD discriminators to avoid inappropriate shocks and antitachycardia pacing seems appropriate based on recent studies.

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REFERENCES

1. Powell BD, Saxon LA, Boehmer JP, et al. Survival after shock therapy in implantable cardioverter-defibrillator and cardiac resynchronization therapy-defibrillator recipients according to rhythm shocked: the ALTITUDE survival by rhythm study. *J Am Coll Cardiol* 2013;62:1674-9.
2. Gilliam FR III, Hayes DL, Boehmer JP, et al. Real world evaluation of dual zone ICD and CRT-D programming compared to single-zone programming: the ALTITUDE REDUCES study. *J Cardiovasc Electrophysiol* 2011;22:1023-9.