Letter by Lin et al Regarding Article, “Heart Rate Predicts Outcomes in an Implantable Cardioverter-Defibrillator Population”

To the Editor:

We read with interest the work by Ahmadi-Kashani et al,1 which reported that in an implantable cardioverter-defibrillator (ICD) population, intrinsic heart rate was strongly associated with the composite end point of heart failure hospitalization and total mortality independently of other clinical characteristics. The authors declared the adverse effects mainly on the part of faster heart rates even in the normal range. In our opinion, a J-shaped relationship between heart rate and event rates should be evaluated in patients with asymptomatic and mild heart failure (New York Heart Association class I/II) instead of a positive linear relationship in those with advanced heart failure (New York Heart Association class III/IV).

Although the authors did not point out what ratio of patients relied on what indications for ICD implantation in the Inhibition of Unnecessary Right Ventricle Pacing With Atrioventricular Search Hysteresis in ICDs (INTRINSIC RV) trial,2 we believe that most patients had characteristics of low left ventricular ejection fraction and sinus rhythm according to the high percentage of dilated cardiomyopathy (70%) and myocardial infarction (66%) at baseline. As we know, a number of clinical trials have proved the effect of rapid heart rate in proportion to cardiac death and hospitalization for heart failure in patients with ischemic and nonischemic cardiomyopathy.3,4 Accordingly, the reverse results of slower heart rate associated with higher event rates in mild heart failure have to be interpreted carefully. Because the patients underwent ICD implantation with functionally right ventricular pacing, those with slow intrinsic heart rate (<65 bpm) would have received more right ventricular pacing, which has been recognized as an independent predictor of death and hospitalization in the literature and some clinical trials. As a result, the benefit of slower intrinsic heart rate should be weighed against the hazard of right ventricular pacing for patients with heart failure. Apparently, more protection was obtained from slower intrinsic heart rate in relation to the severity of heart failure, which also explained the phenomenon of Olshansky et al,5 who previously described that patients with ICDs with some right ventricular pacing (10% to 19%) exhibited lower event rates compared with those with very low levels (0% to 9%). Finally, we could realize a J-shaped relationship between heart rate and the event rates in mild heart failure instead of a positive linear relationship in advanced heart failure.

References


Disclosures

None.

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