Letter by McEvoy Regarding Article, “Pathogenesis of Sudden Unexpected Death in a Clinical Trial of Patients With Myocardial Infarction and Left Ventricular Dysfunction, Heart Failure, or Both”

To the Editor:

In an effort to explore the negative results of implantable cardioverter-defibrillator (ICD) trials early after acute myocardial infarction (MI), Pouleur et al present the findings of a thought-provoking analysis from the VALsartan In Acute myocardial infarction Trial (VALIANT). Within this nonrandomized autopsy series of 398 patients, rates of recurrent MI/myocardial rupture were highest in the early post-MI period and declined with time among the 105 patients who were clinically adjudicated to have “circumstances of sudden unexpected death.” In contrast, the rates of presumed arrhythmic death increased in this group over time. The authors conclude that this may “explain the lack of benefit of early ICD therapy.”

The authors are to be applauded for expertly demonstrating how clinical adjudication of sudden unexpected death (and, thus, similar adjudication in the above ICD trials) as equivalent to arrhythmic death may be inaccurate on the basis of their autopsy data. In Figure 2, we see that this clinical adjudication was inaccurate in approximately 15% of the total 398 autopsied patients, mainly on the basis of previously unrecognized recurrent MI/rupture in patients who died suddenly. Thus, of the 105 patients (26% of the whole autopsy group) initially subgrouped by the lone clinical adjudicator as sudden unexpected deaths, only 54 (14%) were accurate (in that they had a presumed arrhythmic death).

However, these findings may actually confuse the issue further, not explain it. The issue with the aforementioned ICD trials is that ICDs increase nonsudden cardiac deaths in post-MI patients. That they have been consistently shown to decrease sudden (unexpected) cardiac death is all the more surprising, given the present study’s findings. Thus, the findings of this study do not help clarify how early ICD implantation increases nonsudden cardiac death. Other mechanisms may be to blame, including unorthodox effects of defibrillator shocks and antitachycardia pacing. Prior correspondence suggested that it may be worthwhile to compare the follow-up ICD interrogation data on patients who have undergone ICD implantation and had nonsudden cardiac death in the above trials with patients who did not.

One could also challenge the authors claim that, “patients who underwent autopsy were very similar to those who did not with respect to baseline characteristics.” Most notable is the increased fatal MIs seen in the autopsy group as opposed to all other VALIANT deaths (41% versus 17% [Table 2]). There are also differences in time from initial MI to death in the autopsy group, and differences in comorbidities between the groups as well (Table 1). Therefore, the external validity of the findings in the autopsy group is questionable, even within the VALIANT population.

Finally, further clarification of the discrepancy between Figures 3 and 4 is warranted. In Figure 3, the probability of presumed arrhythmic death does not equal that of MI/rupture until approximately 11 months, whereas in Figure 4, the percentage of presumed arrhythmic death surpasses that of MI/rupture by 1 to 3 months in the same group of 98 patients.

Disclosures

None.

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References

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