Hypertrophic Cardiomyopathy and the Implantable Cardioverter-Defibrillator

To the Editor:

We have read the article by Marín et al[1] with interest and would like to describe the results of a similar study conducted at our hospital.

We studied 20 patients with hypertrophic cardiomyopathy (HCM) and implantable cardioverter defibrillator (ICD) between January 1993 and April 2005. The ICD was implanted for both secondary prevention (SP) and primary prevention (PP), with the latter considered to be the presence of 1 or more risk factors recognized as predictors of sudden death.[2] The ICD was indicated for SP in 14 patients (70%), (7 with sudden death and 7 with sustained ventricular tachycardia), and PP in 6 (30%); among the PP group, 33% had a single risk factor. During a median follow-up of 6.5 years (PP 3 years vs SP 7 years; *P*=.016), 2 patients died, 1 in each prevention group (overall survival, 94% [5]). The percentage of patients free of appropriate shocks was 55% (12%) (PP 66% [19] vs SP 52% [14]; *P*=.87), with most patients receiving initial therapy in the first year of follow-up. Four (44%) of the patients with appropriate shocks had only 1 risk factor. There were no significant differences in appropriate shocks among those who had 1 or more risk factors (hazard ratio [HR], 1.25; 95% confidence interval [CI], 0.47-3.33), and no factors were significantly associated with a greater percentage of appropriate shocks. Inappropriate shocks were observed in 40%: 1 (16%) during PP and 7 (50%) during SP (*P*=.4). The main causes were sinus tachycardia, followed by atrial fibrillation, with 1 case due to oversensing; 50% of these also had appropriate shocks during follow-up.

We would like to make several comments about the use of the ICD to prevent sudden death in HCM and to compare our findings with the recent study published in this journal by Marín et al.[1] First, our patients presented a high percentage of appropriate shocks (45%), higher than the values reported up to now and probably attributable to the longer follow-up time. The indication of an ICD for PP in these patients is increasingly accepted in light of recently published studies[3-5]; however, whether or not the presence of a single risk factor justifies implantation is still controversial and the major difference among the various research groups. Our group reflects a less restrictive indication. A third of our patients received an implant for a single risk factor, versus 4.4% in Marín's study.[1] In the latter, the significantly lower percentage of appropriate shocks in the PP group makes the predictive value of a single risk factor alone questionable for justifying implantation of an ICD. Unlike the published series, we found a high percentage of appropriate shocks (33%) in this prevention group, but no differences in the percentage of appropriate therapies between the 2 groups, probably because of the smaller number of patients in PP. The low number of patients is an important limitation and, as mentioned by the authors of the cited article,[1] more studies and research on new risk markers are needed to assess the efficacy of the ICD in PP. Multicenter studies such as the study underway[6] will make a significant contribution in this regard.

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Response

To the Editor:

We appreciate the interest in our article[1] shown by Manovel-Sánchez et al.[2] Certainly, the results of our series are not

much different from those presented now. The high risk of recurrence in patients who have experienced resuscitated sudden death or sustained ventricular tachycardia is well recognized. There is agreement about the need to use an implantable cardioverter defibrillator for secondary prevention,[3] but greater controversy about indicating a defibrillator for primary prevention, because it is not clear how many risk factors are needed for the indication.[4] Even at institutions with specialized units for this condition, the percentage of patients who receive a defibrillator for prevention varies considerably and depends not only on differences in the criteria for indicating the implant, but also on the type of population being cared for.[1,5,6]

The possible discrepancies between the series of Manovel-Sánchez et al[1] and ours may lie in the different proportion of patients in the primary and secondary prevention groups. Additionally, both series may have had patient selection bias, making comparison between them difficult. It is particularly difficult to draw conclusions about the usefulness of risk stratification when analyzing patients with a defibrillator implant as secondary prevention. Because these patients often do not undergo a complete risk assessment, which is not essential when deciding on whether a defibrillator is indicated, they may paradoxically have fewer risk factors than primary prevention patients, despite having more appropriate shocks.

Therefore, there are still many questions in terms of stratifying the risk of our patients and indicating whether a defibrillator is needed for primary prevention: How many risk factors are required? Do all factors have equal weight? How do risk factors work in older patients? How important are other factors that may have an impact, such as ischemic heart disease or atrial fibrillation? What role will genetics play? What will be the role of new imaging techniques such as magnetic resonance and tissue Doppler?

We share the belief that multicenter studies should be conducted. From the Hypertrophic Cardiomyopathy Working Group of the Sociedad Española de Cardiología (Spanish Society of Cardiology), we would like to encourage the development of an ambitious national registry of patients with this condition that covers various related diagnostic and therapeutic aspects. Because of its importance, a registry of patients with an implanted defibrillator is the section being developed first.

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