We thank Drs Roston and Sanatani for their interest in our paper published recently in the Journal.1

As pointed out in the letter, in catecholaminergic polymorphic ventricular tachycardia (CPVT) patients with cardiac ryanodine receptor (RyR2) mutation, probands have been reported to have higher risk than the relatives.2,3 We agree that our cohort mainly consisted of probands, who had generally worse prognosis. The aim of the study, however, was to investigate the prognosis of symptomatic RyR2-positive CPVT patients, many of whom were probands. Thus, it is natural that the cohort had worse prognosis than in previous reports.

The definition of high risk arrhythmia is not unified.4,5 We categorized bigeminy and couplets of premature ventricular complex as high risk according to the Hayashi et al study.6 In that report, the result of exercise stress test (EST) was considered positive if bigeminy, couplets, or VT were induced. In our cohort some patients had direct transitions from bigeminy to VT during EST. This suggests that bigeminy is a prelude to fatal arrhythmia in CPVT, consistent with the classification used in the Hayashi et al study.7 Thus, we consider patients with bigeminy during EST as high risk and believe that this stratification is useful for further management.

In our cohort, high risk ventricular arrhythmias (VA; couplets PVC, bigeminy, or VT) were induced during EST in 13 out of 14 patients (92.9%) with flecainide. And 3 out of those 13 patients (23.1%) developed cardiac arrest (n=2) or ventricular fibrillation (n=1), which should be taken into account.

In the real world, the prognosis of CPVT largely depends on medication compliance and exercise restriction, but it is very difficult to confirm patient compliance. In addition, generally we do not investigate patient compliance until he or she develops cardiac event, and non-compliance is probably underestimated. The fact that most patients developed high-risk VA during EST, even under optimal medical therapy, suggests that medical therapy is not sufficient to improve prognosis, and that compliance is essential for successful treatment.

We had 2 young female patients who took flecainide without β-blocker. These 2 patients could not tolerate β-blocker, mainly due to hypotension. Although β-blocker is the first line of therapy for patients with CPVT, we believe it is reasonable to try flecainide monotherapy in these patients.

We agree with Drs Roston and Sanatani’s opinion that sympathetic denervation is likely to have a more favorable prognosis, but none of our patients underwent sympathetic denervation, therefore we could not investigate the impact of this procedure in our cohort. Further work is needed to determine long-term outcome of sympathetic denervation for CPVT.

References


Hiro Kawata, MD, PhD
Division of Arrhythmia and Electrophysiology, Department of Cardiovascular Medicine, National Cerebral and Cardiovascular Center, Suita, Japan

Wataru Shimizu, MD, PhD
Department of Cardiovascular Medicine, Nippon Medical School, Tokyo, Japan

(Released online November 11, 2016)