17th Symposium on Cardiac Arrhythmias

Catheter Ablation of Ventricular Tachycardia:

Moving Beyond Palliation?

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Catheter ablation of ventricular tachycardia (VT) has been effective in reducing the VT burden in structural heart disease patients. Current guidelines from the American College of Cardiology, the American Heart Association, and the Heart Rhythm Society recommend the consideration of catheter ablation in patients who have recurrent VT despite antiarrhythmic drug therapy.[1] Although major trials have shown success rates of VT ablation ranging from 50% to 70%,[2,3] the long-term prognosis of this patient population remains guarded: it is unknown whether successful ablation actually alters mortality outcomes.

Investigators have begun to confront this question head-on. In 2015, Yokokawa and colleagues[4] published a multicenter experience of 1,064 patients who were undergoing VT ablation. It is of note that the noninducibility of VT after ablation was independently associated with reduced mortality rates. Conversely, age, atrial fibrillation, and diabetes mellitus were associated with higher mortality rates. Also in 2015, Tung and associates[3] published another multicenter experience of patients undergoing VT ablation. A total of 2,061 ischemic and nonischemic cardiomyopathy patients from 12 centers were studied. The one-year freedom from VT recurrence was 70%. Furthermore, that freedom from VT was associated with reduced overall mortality rates, as well as with transplant-free survival. Study of different New York Heart Association (NYHA) classes of patients revealed that freedom from VT was associated with improved survival rates in all NYHA-class patients—particularly in NYHA class III and IV patients.[3] Both of these data sets imply that the "sickest" patients have the most to gain from successful VT ablation.

Finally, a 2016 publication by Sapp and colleagues[5] (Ventricular Tachycardia Ablation versus Escalation of Antiarrhythmic Drug Therapy in Ischemic Heart Disease [VANISH] trial) described the results of a prospective randomization of patients who had a history of recurrent VT despite antiarrhythmic drug administration to either ablation or escalation of drug therapy. Over an average follow-up period of 28 months, there was a significant difference in the overall combined endpoint of death, VT storm, and implantable cardioverter-defibrillator (ICD) shocks.[5] Although there was no statistically significant difference in mortality rates, the ablation arm did show significant reductions in ICD shocks and VT storm, in comparison with the patients on drug therapy alone.

The multicenter observational studies described above suggest improvement in patient mortality rates after successful VT ablation. As with all observational studies, these associations need to be clarified in ideally prospective, randomized trials such as the VANISH trial. In the interim, continued advances in VT treatments can, we hope, alter mortality rates in this challenging patient population.

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