The Management of Ventricular Arrhythmias in Older Patients After CAST

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Summary

Asymptomatic nonsustained ventricular tachycardia and complex ventricular arrhythmias in elderly persons without heart disease should not be treated with antiarrhythmic drugs. Nonsustained ventricular tachycardia and complex ventricular arrhythmias in elderly persons are associated with an increased incidence of coronary events, primary ventricular fibrillation and sudden cardiac death, especially if abnormal left ventricular ejection fraction, left ventricular hypertrophy or silent ischaemia are present.

β-Blockers should be used in the treatment of elderly patients with ventricular tachycardia or complex ventricular arrhythmias associated with ischaemic or non-ischaemic heart disease if there are no contraindications to β-blocker therapy.

I would reserve the use of amiodarone in the treatment of ventricular tachycardia or complex ventricular arrhythmias to life-threatening ventricular tachyarrhythmias in elderly patients who cannot tolerate or who do not respond to β-blockers.
Angiotensin converting enzyme (ACE) inhibitors should be used in treating elderly patients with ventricular tachycardia or complex ventricular arrhythmias associated with congestive heart failure. In patients with ventricular tachycardia or complex ventricular arrhythmias associated with asymptomatic left ventricular systolic dysfunction, I would use β-blockers plus ACE inhibitors. If elderly patients have life-threatening, recurrent ventricular tachycardia or ventricular fibrillation resistant to antiarrhythmic drugs, invasive intervention is indicated.

Until the results of prospective, randomised, clinical trials evaluating the automatic implantable cardioverter-defibrillator are available, I recommend using the automatic implantable cardioverter-defibrillator in elderly patients who have medically refractory sustained ventricular tachycardia or ventricular fibrillation.

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1. Prevalence of Ventricular Arrhythmias

Ventricular tachycardia (VT) is defined as 3 or more consecutive ventricular premature complexes (VPCs). VT lasting 30 seconds or longer is considered sustained VT, whereas if it lasts less than 30 seconds it is considered nonsustained VT. Complex ventricular arrhythmias (VAs) include VT or paired, multiform or frequent VPCs. Frequent VPCs are those that occur on an average of 30 or more per hour on a 24-hour ambulatory electrocardiogram (AECG) or 6 or more per minute on a 1-minute rhythm strip of an electrocardiogram. Simple VAs include infrequent VPCs and no complex forms.

The results of studies assessing the prevalence of VT and complex VA are reported in tables I and II. From these data it can be seen that elderly persons with an abnormal left ventricular (LV) ejection fraction (<50%), with echocardiographic LV hypertrophy or with silent myocardial ischaemia have a higher prevalence of VT and of complex VA than elderly persons with a normal LV ejection fraction, normal LV mass or no silent myocardial ischaemia.

2. Prognosis of Ventricular Arrhythmias

2.1 Presence of Heart Disease

Numerous studies have demonstrated that patients with VT or with complex VA associated with heart disease are at increased risk for developing new cardiac events. Ruberman and coworkers observed, at 2-year follow-up in 1739 men with prior myocardial infarction, that complex VA, detected by 1 hour of electrocardiographic monitoring, increased the risk of sudden coronary death 3-fold and the risk of death from any cause 2-fold. Moss and colleagues demonstrated, at 3-year follow-up in 940 postmyocardial infarction patients, that patients with complex VA detected by 6-hour AECGs had a significantly higher rate of sudden and nonsudden cardiac death. Further evidence for the role of heart disease was obtained in 766 postmyocardial infarction patients from the Multicenter Post-Infarction Program who had 24-hour AECGs at 22-month follow-up. In these patients, VPC frequency, paired VPCs, VPC runs and an abnormal LV ejection fraction were each independently associated with arrhythmia-specific mortality and with total mortality.

Mukharji and colleagues studied 24-hour AECGs from 533 postmyocardial infarction patients from the Multicenter Investigation of the Limitation of Infarct Size. At the 18-month follow-up, frequent VPCs and an abnormal LV ejection fraction were found to be independent risk factors for subsequent sudden cardiac death. The incidence of sudden cardiac death in postinfarction patients was 11 times greater in patients with both LV dysfunction and frequent VPCs than in those with neither LV dysfunction nor frequent VPCs. Kostis and coworkers showed, in 1640 postinfarction patients randomised to placebo in the β-Blocker Heart Attack Trial, who had 24-hour...