Nonsustained ventricular tachycardia (NSVT) refers to three or more consecutive ventricular beats with a rate greater than 100 beats per minute (BPM) that does not: cause hemodynamic collapse, require cardioversion, or last more than 30 s. Although it is not life-threatening, NSVT can cause symptoms requiring suppressive, or curative treatment. NSVT can also carry a high risk of sudden death.

Strategies have been proposed to risk-stratify patients with NSVT, and offer high-risk patients therapy that reduces the risk of sudden cardiac death. However, prophylactic therapy is not well-defined in all patient subgroups. Even “definitive” studies provide incomplete guidance. Cogent data from clinical trials now indicate that substantial risk reduction can be achieved in some patients with proper prophylactic treatment. Although earlier clinical trials have focused on pharmacologic prophylaxis, more recent trials have evaluated the implantable cardioverter defibrillator (ICD). Despite the results of these trials, NSVT remains a common clinical problem that can be difficult to evaluate and treat (1,2).
Incidence of NSVT

The actual incidence of NSVT in the general population is unknown (see Fig. 1). In asymptomatic individuals with no apparent heart disease, NSVT is rare (1–4%) (3,4–10). NSVT may occur in the general population at a frequency too small to be detectable during an average 24-h observational period. Treadmill testing can detect NSVT in about 1% of an unselected population (7,8).

A relationship does exist between the extent of structural heart disease and the prevalence of NSVT (11–13). In the CHF STAT trial, 80% of patients with congestive heart failure (CHF) had NSVT on routine 24-h Holter monitoring (14). Other studies of patients with heart failure confirm a high frequency of NSVT with routine monitoring (15,16). In the GESICA trial, the incidence of NSVT was 50.3%. Prolonged monitoring of most patients with cardiomyopathy and CHF will reveal NSVT. NSVT is commonly associated with many forms of heart disease, including ischemic heart disease, cardiomyopathy (dilated, infiltrative, and hypertrophic), congenital heart disease, valvular heart disease, myocarditis, long QT syndrome (LQTS), and right ventricular dysplasia. Approximately 35–50% of patients with acute myocardial infarction (MI) have NSVT during the acute phase of the MI, and 5–10% of those with history of MI will have NSVT in the chronic phase (17–19,20–23).

CLASSIFICATION OF NSVT

NSVT can be categorized by morphology, clinical presentation, underlying substrate, and symptoms.

Morphology

Nonsustained tachycardias may present many appearances. The possibility that a nonsustained wide-complex tachycardia may be caused by supraventricular tachycardia with aberrancy should also be considered (see Fig. 2B). Multiple algorithms have been proposed to aid in diagnosis; from a practical perspective, wide-complex tachycardia is more likely VT than SVT with aberrancy, particularly in patients with structural heart disease. In addition, motion or tremor artifact can occasionally “masquerade” as