

Arrhythmias may run the gamut from benign to malignant, life-threatening etiologies. Therefore, an important aspect of the evaluation of suspected arrhythmia is to discern patient prognosis, which then informs treatment. Arrhythmias that result in more significant hemodynamic compromise, and therefore more profound symptoms, tend to correlate with more malignant disease. In turn, the higher the suspicion for a malignant arrhythmia, the more aggressive the evaluation will likely be. Loss of consciousness, which may be the result of cardiac arrhythmia but also other etiologies that may be more benign, presents a particularly challenging yet common diagnostic dilemma. Therefore, careful thought into the appropriate evaluation for a patient with syncope is critical. In general, the presence of underlying structural abnormality of ventricular myocardium favors more malignant arrhythmias, both due to the increased risk of lethal ventricular arrhythmias, as well as potential inability to hemodynamically tolerate any particular arrhythmia.

The ECG is the cornerstone and most important diagnostic test that should be performed on every patient with suspected arrhythmia. A 12-lead resting ECG may offer clues to the diagnosis. Most simply, if active arrhythmia is captured on the ECG, a definitive diagnosis can be made. In addition, evidence suggesting underlying cardiac disease, such as prior myocardial infarction, LVH and possible hypertrophic cardiomyopathy, atrial disease, or baseline conduction system disease may suggest a diagnosis. A subset of conditions that predispose to arrhythmia, both inherited or acquired, may be discerned as well, including ventricular preexcitation, prolonged or shortened QT interval, or ECG findings suggestive of specific inherited conditions such as Brugada syndrome or right ventricular cardiomyopathy.

However, the ECG typically records only 6 s of cardiac electrical activity, and therefore more intermittent and transient arrhythmias, particularly those not typically associated with abnormalities on the resting ECG, may not be seen. Many arrhythmias, including forms of both SVT and VT, can only be diagnosed definitively if an ECG is performed during active arrhythmia and/or symptoms from arrhythmia, or alternatively provoked in the electrophysiology