

### Idioventricular Rhythm and Accelerated Ventricular Rhythm

Cells in the ventricle have automaticity at a rate of 20-40 beats/minute and, therefore, can function as an escape pacemaker if all other pacemaker sites fail. When the rate of the ventricular pacemaker is 20-40, the term *idioventricular rhythm* is used; when the rate is  $> 40$  but  $< 100$ , the term *accelerated ventricular rhythm* is used.

*Origin:* ventricular focus.

*Regularity:* usually regular.

*Rate:* 20-40 beats/minute for idioventricular rhythm; 40-100 beats/minute for accelerated ventricular rhythm.

*P waves:* may be present if sinus node is working, but not related to QRS complexes.

*PR interval:* not measured, since P waves are unrelated to QRS.

*QRS complex:* wide and bizarre,  $> .12$  sec.

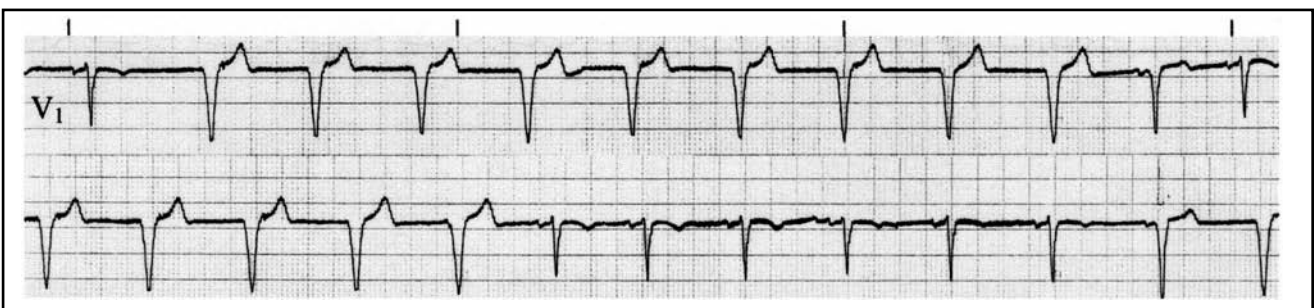
*Conduction:* muscle cell-to-cell within ventricles.

*Significance:* an idioventricular rhythm is slow and usually results in symptoms related to decreased cardiac output (hypotension, cool, clammy skin, dizziness, syncope, chest pain, SOB). If the ventricular rate is within a normal range, the patient may be asymptomatic. Loss of atrial kick can contribute to decreased cardiac output. Idioventricular rhythm is often the last stage before asystole in a very sick heart and may not respond to treatment. Accelerated ventricular rhythm occurs with inferior MI, and is the most common reperfusion arrhythmia in patients receiving fibrinolytic therapy for acute MI.

*Treatment:* idioventricular rhythm usually requires ventricular pacing. Drug therapy with epinephrine, dopamine, or isoproterenol can be used in an attempt to increase the ventricular rate and support blood pressure until a pacemaker can be inserted or external pacing can be instituted. Accelerated ventricular rhythm is often temporary and harmless and does not require treatment unless it results in symptoms. Atropine can be used to speed up an underlying sinus bradycardia and overdrive the ventricular pacemaker. Suppressive therapy with lidocaine or other drugs is not recommended. (See example below.)



Idioventricular rhythm at rate of about 40.



Sinus rhythm with runs of accelerated ventricular rhythm at a rate of about 75.