


Fast Tip 16.3 Do Not Miss Dysrhythmias

Be sure you accurately check a patient's pulse for 1 full minute so you do not miss a dysrhythmia that would prevent the patient from benefiting from medication therapy.

Drugs used to treat dysrhythmias are classified by how they act to improve the heart rhythm.

- Sodium channel blockers (Class I antiarrhythmics)
- Beta-adrenergic blockers (Class II antiarrhythmics)
- Potassium channel blockers (Class III antiarrhythmics)
- Calcium channel blockers (Class IV antiarrhythmics)

Each class of medications is described here.

Sodium Channel Blockers (Class I)

Sodium channel blockers slow the rate of electrical conduction by inhibiting sodium. Sodium is necessary to facilitate nerve impulses and muscular contraction. Blocking sodium transfer therefore inhibits irregular rhythms. Sodium also is the main contributor to osmotic pressure and hydration. Class I antiarrhythmic medications are used to treat those irregular heartbeats that originate above the ventricles; these are also called supraventricular rhythms. Some medications in Class I include flecainide (Tambocor™), propafenone (Rythmol), and quinidine (Cardioquin, Quinaglute Dura-Tabs, Quinidex). All these medications are taken orally. In the case of emergencies with a life-threatening ventricular arrhythmia, lidocaine (Xylocaine) may be administered via the IV route to decrease the sensitivity of the heart muscle.

Beta-Adrenergic Blockers (Class II)

Beta-adrenergic blockers slow electrical conduction in the heart and return the heart rhythm to normal. They can also be used to decrease oxygen demands for the heart by decreasing the fight-or-flight response. This is the same class of medications discussed earlier under medications that lower blood pressure. Some Class II medications include atenolol (Tenormin), esmolol, and propranolol (Inderal).

Potassium Channel Blockers (Class III)

Potassium channel blockers are very successful in treating both ventricular and supraventricular arrhythmias. Patients with internal defibrillators are prescribed this class of medications if they are at high risk for sudden cardiac arrest because these medications will reduce the occurrence and severity of arrhythmias. Potassium channel blockers change the heart rhythm by affecting potassium, a necessary element for contraction of cardiac muscle. If too much potassium is lost through the use of diuretics or a poor diet, the patient may need to take potassium supplements or eat foods high in potassium, such as oranges, sweet potatoes, and bananas. Examples of Class III antiarrhythmics include amiodarone (Cordarone), bepridil, bretylium tosylate, dofetilide (Tikosyn), ibutilide (Corvert), and sotalol (Betapace).

Calcium Channel Blockers (Class IV)

As discussed earlier, calcium channel blockers block calcium ions, dilate heart vessels, and thus decrease the workload of the heart. This class of antiarrhythmics is generally used for patients with very rapid arrhythmias. The specific calcium channel blocker medications used for arrhythmias include diltiazem (Cardizem, Tiazac) and verapamil (Covera, Isoptin, Calan).

Medications for Shock

Shock is the collapse of the cardiovascular system, and it can be of cardiogenic origin (heart stops pumping), hypovolemic origin (loss of blood volume), neurogenic origin (central nervous system fails leading to vasodilation), or septic origin (invasion of a microorganism). Treatment of shock primarily