ARRHYTHMIA

Patient Information Fact Sheet

What is an arrhythmia?

An arrhythmia is an irregularity in the heartbeat. The heart may seem to skip a beat, beat irregularly or beat very fast or slow. There are many different types of arrhythmias. Those that arise in the upper two chambers of the heart (the atria) are known as atrial or supraventricular arrhythmias. Those arising in the ventricles (the two chambers beneath the atria) are known as ventricular arrhythmias. These are usually the most serious.

Arrhythmias themselves are dangerous in only a small number of people. For most people, the arrhythmia is not caused by heart disease but by other factors, which are often temporary. Arrhythmias occur most often in people of middle age, and increasingly in older people. For most people arrhythmias are not a serious problem and do not require special treatment.

What are the symptoms of arrhythmia?

The heart normally contracts between 60 and 100 times per minute. If there are problems with the heart, a slower heart rate may be experienced. This is called bradycardia and can cause fainting spells, light-headedness, dizziness, and fatigue. A rapid heartbeat is known as tachycardia and produces similar symptoms, including light-headedness, fainting, and dizziness. In addition, an affected person may experience palpitations (a fluttering sensation in the chest) and the heartbeat may be irregular and fast. Ventricular tachycardia can be life-threatening if the ventricles are beating so fast that the heart cannot pump sufficient blood to the vital organs. Fainting and death can follow if this condition is not treated immediately. Prolonged cases of atrial fibrillation, where the atria are quivering instead of contracting properly, can cause a stroke.

What are the causes of arrhythmia?

Normally, a heartbeat is initiated by the the sinus node, the pacemaker of the heart. However, almost any part of the heart is also capable of starting a heartbeat. If the pacemaker develops an abnormal rhythm or if another part of the heart starts a heartbeat, an arrhythmia will occur. Arrhythmias may be caused by various types of heart disease including a problem with the sinus node; heart block, where electrical signals are unable to pass through the heart normally; or extra beats starting in the atria or ventricles. In many people, the cause of the arrhythmia is not serious. It may be caused by caffeine (eg, in coffee or cola), alcohol or tobacco. Other causes may include some appetite-suppressant drugs, some cough and cold medicines, recreational drugs, and stress. In these people, symptoms will disappear if the triggering factor is removed. Sinus arrhythmia is a very common arrhythmia that occurs when a breath is taken. It is common in children but is also found in adults and is quite normal.

What tests are used to diagnose arrhythmia?

Sometimes, an arrhythmia can be heard by listening to the heart with a stethoscope. Usually, an electrocardiogram (ECG) is the most precise method for diagnosing the cause of the arrhythmia. If you have an ECG, two or more electrodes will be placed on your skin (one on your chest). The electrodes will then be connected to a machine (an electrocardiograph), which will produce a tracing of the electrical activity of your heart. The doctor may order a resting ECG where you lie

down for the test or an exercise ECG where you exercise on a treadmill or bicycle while the ECG recording is made. A 24-hour ECG recording may be made via a small tape recorder, which is carried around while you carry out your normal activities. This test may show changes that occur over time, which may not be detected during a resting or exercise ECG. Cardiac catheterization involves a fine tube being passed into the chambers of the heart via a vein in the leg or arm, which enables the site of the arrhythmia to be found. This is a fairly specialized technique and will only be used in certain circumstances.

How is arrhythmia treated?

Most arrhythmias require no treatment. Serious arrhythmias are treated according to their cause. Heart disease may be treated to control the arrhythmia. An artificial pacemaker may be surgically inserted under the skin and connected to the right side of the heart to control the heart's natural pacemaker if it isn't working correctly. Sometimes, surgery may also be necessary to remove the area of tissue that is causing extra beats. In an emergency situation, cardio version may be performed; this is an electric shock applied to the chest to restore the heart to its normal rhythm. In instances of serious recurrent arrhythmias, an automatic implantable defibrillator may be surgically placed under the skin and connected to the heart to produce an electric shock when necessary.

There are several drugs that may be prescribed alone or in combination to treat arrhythmia. Blood levels of these drugs will often be monitored by your doctor and other tests may be used to check the treatment is working correctly. Drugs for arrhythmia are usually given orally as tablets or capsules but in acute situations they may be given by injection or infusion into a vein. Supraventricular arrhythmias may be treated with a drug called **verapamil** (Calan) which belongs to a class of drugs known as the calcium-channel blockers. Another drug that may be given to treat supraventricular arrhythmias is **adenosine** (Adenocard). It may also be used for diagnostic purposes. **Antiarrhythmics** that may be prescribed for either atrial or ventricular arrhythmias include **amiodarone** (Cordarone), **dronedarone** (Multaq), **propafenone** (Rythmol), **disopyramide** (Norpace), **flecainide** (Tambocor), **lidocaine**, **mexiletine**, **phenytoin** and **procainamide**. Another group of drugs known as **beta-blockers** may also be used to treat arrhythmias. These include **acebutolol** (Sectral), **atenolol** (Tenormin), **esmolol** (Brevibloc), **metoprolol** (Lopressor, Toprol-XL), **nadolol** (Corgard), **propranolol** (Inderal) and **sotalol** (Betapace). Cardiac glycosides, another class of drugs used to treat arrhythmia, includes **digoxin** (Lanoxin).

Further information

American Heart Association: www.americanheart.org

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