

Treatments

Arrhythmia treatments fall into several main categories along a continuum from the least to most invasive.

In general, the least invasive treatment that effectively controls the arrhythmia is the treatment of choice. Options include lifestyle change, medication, catheter ablation, pacemaker or defibrillator implant, and surgery.

Lifestyle Changes

Since other heart disorders increase the risk of developing arrhythmias, lifestyle changes often are recommended. In addition, improving health can decrease the symptoms of arrhythmias and other heart disorders as well as prove beneficial to overall patient health.

Medications

Medications can control abnormal heart rhythms or treat related conditions such as high blood

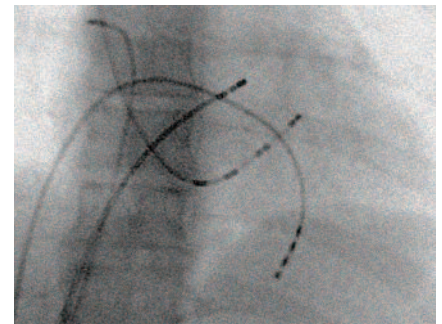
pressure, coronary artery disease (blockages in the heart's arteries or pipes), and heart failure. Blood thinning medications may also be administered to reduce the risk of blood clots in patients with certain arrhythmias such as atrial fibrillation.

Electronic Devices

By delivering a controlled electric "shock" to the heart, defibrillators shock the heart back into normal rhythm. Sometimes the devices are external, such as in an emergency situation. Often, the electronics are implanted in the patient's chest.

Pacemakers

Pacemakers are devices that pace the heart when the heart's natural pacemaker, the sinoatrial node, is



not firing rapidly enough. Pacemakers monitor and transmit electrical impulses to stimulate or pace the heart if it is beating too slowly.

Implanted Cardioverter Defibrillators (ICDs)

ICDs are 99 percent effective in stopping life-threatening arrhythmias and are the most successful therapy to treat ventricular fibrillation, the major cause of sudden cardiac death. ICDs continuously

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monitor the heart rhythm, automatically function as pacemakers for heart rates that are too slow, and deliver life-saving shocks if a dangerously fast heart rhythm is detected.

Devices for Heart Failure

For patients with heart failure, a biventricular pacemaker or defibrillator can be implanted, which paces both the left and right ventricles (lower chambers) of the heart simultaneously. This resynchronizes muscle contractions and improves the efficiency of the weakened heart. It is also referred to as cardiac resynchronization therapy (CRT).

Catheter Ablation

In this procedure, one or more flexible, thin tubes (catheters) are guided via x-ray into the blood vessels and directed to the heart muscle. A burst of radiofrequency energy destroys very small areas of tissue that give rise to arrhythmias (abnormal rapid heart rhythms).

Surgery

Although surgery is sometimes used to treat abnormal heart rhythms, it is more commonly used to treat other cardiac problems, such as coronary artery disease, valvular disease (abnormally leaky or tight valves), and heart failure. Correcting these conditions may reduce the likelihood of arrhythmias.

Treatment Decisions

The first step in treating any arrhythmia is determining the underlying cause of the problem. Then, patients and clinicians can discuss treatment options factoring in the circumstances of each individual case. The following are some of the considerations when determining appropriate treatment:

- The nature and severity of the heart rhythm disorder and its symptoms
- Underlying diseases and other conditions that contribute to the disorder or affect the patient's health or quality of life
- The patient's age, overall health, and personal and family medical history
- Medications and other therapies that the patient may be using for other conditions