



COMMENTARY

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Cardiac Arrhythmia Disease: its Diagnostic and Symptoms

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Description

Arrhythmias, also known as cardiac arrhythmias, or dysrhythmias, are irregularities in the heartbeat, including when it is too fast or too slow. A resting heart rate that is too fast above 100 beats per minute in adults is called tachycardia, and a resting heart rate that is too slow below 60 beats per minute is called bradycardia. Some types of arrhythmias have no symptoms. Symptoms, if present, may include palpitations or a feeling of a pause between heartbeats. In more severe cases, dizziness, fainting, shortness of breath or chest pain may occur. While most cases of arrhythmia are not serious, some predispose a person to complications such as stroke or heart failure. Others can cause sudden death [1].

Diagnostic

Cardiac arrhythmia is often first detected by simple but non-specific means listening to the heartbeat with a stethoscope or sensing peripheral pulses [2]. These usually cannot diagnose a specific arrhythmia, but can give a general indication of the heart rate and whether it is regular or irregular. Not all electrical impulses of the heart produce audible or palpable beats [3]. In many cardiac arrhythmias, premature or abnormal beats do not produce an effective pumping action and are perceived as “missed” beats. The simplest specific diagnostic test for evaluating heart rhythm is an electrocardiogram (ECG or EKG for short). A Holter monitor is an ECG recorded for 24 hours to detect arrhythmias that can occur briefly and unpredictably during the day [4]. A more advanced study of the heart’s electrical activity can be done to assess the source of the aberrant heartbeats. This can be done with an electrophysiology study, an endovascular procedure that uses a catheter to “listen” to the electrical activity from the heart, and if the source of the arrhythmias is found, the abnormal cells can often be removed and

the arrhythmia can be eliminated or permanently fixed [5]. Transesophageal atrial pacing (TAP) instead uses an electrode inserted through the esophagus to a part where the distance to the back wall of the left atrium is only about 5–6 mm (remaining constant in people of different ages and weights). Transesophageal atrial pacing can differentiate between atrial flutter, AV nodal reentrant tachycardia, and orthodromic atrioventricular reentrant tachycardia. It can also assess risk in people with Wolff-Parkinson-White syndrome as well as terminate supraventricular tachycardia caused by re-entry [6].

Symptoms

The most common symptom of arrhythmia is awareness of an abnormal heartbeat, called palpitations. These can be rare, frequent or continuous. Some of these arrhythmias are harmless (although distracting to patients), but some of them predispose to adverse outcomes [7]. Some arrhythmias do not cause symptoms and are not associated with increased mortality. However, some asymptomatic arrhythmias are associated with adverse effects. Examples include a higher risk of blood clotting in the heart and a higher risk of insufficient blood transport to the heart due to a weak heartbeat. Other increased risks are embolization and stroke, heart failure, and sudden cardiac death. If the arrhythmia results in the heart beating too fast, too slow, or too weak to meet the body’s needs, it will show as a drop in blood pressure and can cause dizziness, lightheadedness, syncope or brain death due to insufficient blood supply to the brain[8]. Some types of arrhythmias result in cardiac arrest or sudden death.

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