

A Short Note on Cardiac Arrhythmia

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ABOUT THE STUDY

When the electrical signals that coordinate heartbeats malfunction, arrhythmias develop. It can happen in people who appear to have a well-organized heart. When the heart muscle is damaged, scar tissue forms unique electrical pathways in the ventricles, causing ventricular tachycardia. Electrocardiograms (ECGs), electrograms from intracardiac catheters, and esophageal recordings are just a few of the systems that have been devised to aid in the analysis of cardiac signals. These advancements were geared at the accurate detection of arrhythmias.

Cardiac arrhythmia is defined by an irregular heartbeat rhythm that can be either too slow (60 beats per minute) or excessively rapid (>100 beats per minute) and can affect people of any age. Patients with cardiac arrhythmias may benefit from the use of pacemakers and defibrillators. Antiarrhythmic drugs have been used to treat cardiac arrhythmias (irregular heartbeats) in the past. It has been shown that up to 10% of all cardiac arrest victims do not have coronary artery disease or structural heart disease. In many circumstances, traditional resuscitative algorithms such as lidocaine or amiodarone treatment will be ineffective.

Arrhythmia is divided into several categories, including:

- Tachycardia and Bradycardia
- An premature compression or an early heartbeat
- Sporadic heartbeat, also known as a vacillate or fibrillation

The majority of arrhythmias aren't dangerous and don't create any problems. Despite this, a few can increase the risk of stroke or heart failure.

NORMAL HEARTBEAT

The range for a resting pulse varies from person to person, although the American Heart Association (AHA) suggests that it should be between 60 and 100 beats per minute.

A person's resting pulse decreases as they get more fit. Olympic athletes, for example, will often have a resting pulse of fewer than 60 beats per minute due to their highly productive hearts.

In general, a lower resting heart rate indicates greater cardiac function and cardiovascular fitness. A well-trained athlete, for example, would have a heart rate and blood pressure closer to 40 bpm.

ELECTRICAL ARRANGEMENT OF THE HEART

Electrical signs control the siphon

When an electrical drive from the sinoatrial hub (also known as the SA hub or sinus hub) passes through it, the heart beat (withdrawal) begins. The SA hub is sometimes referred to as the heart's "natural pacemaker" since it initiates heartbeat motives.

The conventional electrical configuration begins in the right chamber and extends all the way through the atria to the AV hub. Electrical impulses go from the AV hub to all parts of the ventricles via the His-Purkinje framework, which is a collection of specialized filaments. This meticulous path must be followed in order for the heart to syphon properly. The heart normally syphons and a thump at a rapid rate, regardless of how long the electrical drive is conveyed. The average adult heart beats 60 to 100 times each minute.

Electrocardiography (ECG or EKG) is a simple, non-invasive procedure that captures the electrical activity of the heart and can help diagnose arrhythmias.

Unusual heart rhythms (arrhythmias)

Supraventricular tachycardia affects the atria, or upper chambers of the heart. The term "arrhythmia" refers to any deviation from the normal arrangement of electrical driving forces those results in abnormal heart beats. Arrhythmias can be completely harmless or extremely dangerous.

A few arrhythmias are so brief (for example, an impermanent delay or an untimely thud) that they have little effect on the overall pulse or cadence. However, if arrhythmias remain longer, they may cause the pulse to be too slow or too fast, or the heart to be inconsistent, causing the heart to pump less effectively.

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- Tachycardia is defined as a fast pulse (more than 100 beats per minute in adults).
- Bradycardia refers to a slow pulse (less than 60 beats per minute).

CAUSES

The sinus (or sinoatrial or SA) hub contains the heart's fastest terminating cells, making it a typical pacemaker. Under certain

circumstances, nearly all cardiac tissue may initiate a drive capable of producing a pulse.

As a result, cells in the heart's conduction structure can fire and electrical action can begin. This activity has the potential to interfere with the heart's normal syphoning process.