ARRHYTHMIAS

Authors:
Brian Frost
Matthew Marhefka
Madison Notarianni

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What are arrhythmias?

Arrhythmias refer to a broad category of abnormalities in the way the heart's electrical system works. These differences in how the heart beats can place individuals at higher risk of sudden cardiac arrest, which is when the heart is unable to contract.[1,2]

What are congenital arrhythmias?

Congenital arrhythmias are conditions that affect the heart's electrical system and are present at birth, although they may not be recognized until they cause symptoms or, in more serious cases, a sudden cardiac arrest.[1,2]

What causes congenital arrhythmias?

Congenital arrhythmias are abnormal heart rhythms that a person is born with, usually due to a problem with the heart's electrical system or an inherited gene mutation that affects how the heart beats. Important risk factors for developing these conditions include: a family history of arrhythmias or sudden unexplained death, having a congenital heart defect, and/or having mutations in the channels that control the movement of ions such as sodium and potassium, which help regulate the heart's electrical activity.[1,2] Following Simon Sudman's sudden and unexpected death in infancy, his mother was diagnosed with long QT syndrome, highlighting the importance of recognizing inherited arrhythmias with family screenings.[3]

What are the most common types of congenital arrhythmias?

Common congenital arrhythmias include conditions such as long QT syndrome, short QT syndrome, Wolff-Parkinson-White (WPW) syndrome, Brugada syndrome, Romano-Ward syndrome, and rhythm problems linked to congenital heart defects.[1,2]

What symptoms can congenital arrhythmias cause?

While many people have no symptoms, others may experience a racing heartbeat, skipped beats, a fluttering sensation in the chest, dizziness, fainting, difficulty breathing, chest pain, or unusual tiredness. In more serious cases, congenital arrhythmias can lead to cardiac arrest (where the heart suddenly stops beating) during exercise or intense exertion, which is why it is very important for patients and their families to be educated on these conditions. Triggers that can sometimes unmask an underlying arrhythmia include intense exercise, emotional stress, and dehydration.[1,2]

How are congenital arrhythmias diagnosed?

Patients concerned about having an arrhythmia should consult their physician for an evaluation, which will likely include getting an electrocardiogram (ECG) to study the flow of electricity in the heart.[2]

How are congenital arrhythmias treated?

There are a variety of treatments and management protocols for patients with congenital arrhythmias that depend on the type of arrhythmia, the severity of the symptoms, and the age of the patient. These include surgery, medications, implantation of devices that regulate the heart, and consistent doctor appointments to monitor the patient's condition. If you or a loved one has a congenital arrhythmia, it is important to speak to a doctor to develop a treatment plan that works best for you.[1,2]

How to make a difference?

Cardiac arrest is a medical emergency. It can strike suddenly, without warning, and have lasting impacts.[2,3] It is important to have a plan in place for how to respond if you witness a sudden cardiac arrest. The American Heart Association's *Chain of Survival* outlines the critical steps that give someone the best chance of

surviving cardiac arrest.[4] Learn more about the Chain of Survival here: https://cpr.heart.org/en/resources/cpr-facts-and-stats/chain-of-survival.

If someone experiences cardiac arrest, they may suddenly collapse, lose consciousness, stop breathing normally, and have no pulse. In such a case, begin CPR, ask someone to call 911, and retrieve an AED if one is nearby. Use the AED as soon as possible because it can restore a normal heart rhythm in certain life-threatening cardiac arrests.[2,5] Secondly, understand your risk by discussing your family history of heart disease or unexpected deaths before age 50 with your doctor.[1,2]

A congenital arrhythmia can leave people at risk of unexpected death, but awareness, family screening, and early recognition can save lives.[1,2] Simon's Heart was founded to raise awareness of these conditions and help prevent sudden cardiac death in children and young adults through education, screening, and advocacy.[3]

References:

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