

DISORDER OF HEART RHYTHM. ATRIAL FIBRILLATION

Makhmudov Alisher Khakimovich

Republican Specialized Scientific and Practical Medical Center of Cardiology, Samarkand
branch

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Abstract. *Typical heartbeat. A heart arrhythmia (uh-RITH-me-uh) is an irregular heartbeat. Heart rhythm problems (heart arrhythmias) occur when the electrical signals that coordinate the heart's beats don't work properly. The faulty signaling causes the heart to beat too fast (tachycardia), too slow (bradycardia) or irregularly.*

Keywords: *heart arrhythmias, life-threatening, heartbeats.*

НАРУШЕНИЕ СЕРДЕЧНОГО РИТМА. МЕРЦАТЕЛЬНАЯ АРИТМИЯ

Аннотация. *Типичное сердцебиение. Сердечная аритмия (uh-RITH-me-uh) — это нерегулярное сердцебиение. Проблемы с сердечным ритмом (сердечные аритмии) возникают, когда электрические сигналы, координирующие сердечные сокращения, не работают должным образом. Неправильная передача сигналов заставляет сердце биться слишком быстро (тахикардия), слишком медленно (брадикардия) или нерегулярно.*

Ключевые слова: *сердечные аритмии, опасные для жизни, сердечные сокращения.*

INTRODUCTION

Heart arrhythmias may feel like a fluttering or racing heart and may be harmless. However, some heart arrhythmias may cause bothersome — sometimes even life-threatening — signs and symptoms.

However, sometimes it's normal for a person to have a fast or slow heart rate. For example, the heart rate may increase with exercise or slow down during sleep.

Heart arrhythmia treatment may include medications, catheter procedures, implanted devices or surgery to control or eliminate fast, slow or irregular heartbeats. A heart-healthy lifestyle can help prevent heart damage that can trigger certain heart arrhythmias.

MATERIALS AND METHODS

Types. In general, heart arrhythmias are grouped by the speed of the heart rate. For example:

Tachycardia (tak-ih-KAHR-dee-uh) is a fast heart. The resting heart rate is greater than 100 beats a minute. Bradycardia (brad-e-KAHR-dee-uh) is a slow heartbeat. The resting heart rate is less than 60 beats a minute.

Fast heartbeat (tachycardia)

Types of tachycardias include:

Atrial fibrillation (A-fib). Chaotic heart signaling causes a rapid, uncoordinated heart rate. The condition may be temporary, but some A-fib episodes may not stop unless treated. A-fib is associated with serious complications such as stroke.

Atrial flutter. Atrial flutter is similar to A-fib, but heartbeats are more organized. Atrial flutter is also linked to stroke.

Supraventricular tachycardia. Supraventricular tachycardia is a broad term that includes arrhythmias that start above the lower heart chambers (ventricles). Supraventricular tachycardia causes episodes of a pounding heartbeat (palpitations) that begin and end abruptly.

Ventricular fibrillation. This type of arrhythmia occurs when rapid, chaotic electrical signals cause the lower heart chambers (ventricles) to quiver instead of contracting in a coordinated way that pumps blood to the rest of the body. This serious problem can lead to death if a normal heart rhythm isn't restored within minutes. Most people who have ventricular fibrillation have an underlying heart disease or have experienced serious trauma.

Ventricular tachycardia. This rapid, regular heart rate starts with faulty electrical signals in the lower heart chambers (ventricles). The rapid heart rate doesn't allow the ventricles to properly fill with blood. As a result, the heart can't pump enough blood to the body. Ventricular tachycardia may not cause serious problems in people with an otherwise healthy heart. In those with heart disease, ventricular tachycardia can be a medical emergency that requires immediate medical treatment.

Atrial fibrillation (A-fib) is an irregular and often very rapid heart rhythm (arrhythmia) that can lead to blood clots in the heart. A-fib increases the risk of stroke, heart failure and other heart-related complications.

During atrial fibrillation, the heart's upper chambers (the atria) beat chaotically and irregularly — out of sync with the lower chambers (the ventricles) of the heart. For many people, A-fib may have no symptoms. However, A-fib may cause a fast, pounding heartbeat (palpitations), shortness of breath or weakness.

RESULTS

Episodes of atrial fibrillation may come and go, or they may be persistent. Although A-fib itself usually isn't life-threatening, it's a serious medical condition that requires proper treatment to prevent stroke.

Treatment for atrial fibrillation may include medications, therapy to reset the heart rhythm and catheter procedures to block faulty heart signals.

A person with atrial fibrillation may also have a related heart rhythm problem called atrial flutter. Although atrial flutter is a different arrhythmia, the treatment is quite similar to atrial fibrillation.

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Symptoms

Some people with atrial fibrillation (A-fib) don't notice any symptoms. Those who do have atrial fibrillation symptoms may have signs and symptoms such as:

Sensations of a fast, fluttering or pounding heartbeat (palpitations)

Chest pain

Dizziness

Fatigue

Lightheadedness

Reduced ability to exercise

Shortness of breath

Weakness

Atrial fibrillation may be:

DISCUSSION

Occasional (paroxysmal atrial fibrillation). A-fib symptoms come and go, usually lasting for a few minutes to hours. Sometimes symptoms occur for as long as a week and episodes can happen repeatedly. Symptoms might go away on their own. Some people with occasional A-fib need treatment. Persistent. With this type of atrial fibrillation, the heart rhythm doesn't go back to normal on its own. If a person has A-fib symptoms, cardioversion or treatment with medications may be used to restore and maintain a normal heart rhythm.

Long-standing persistent. This type of atrial fibrillation is continuous and lasts longer than 12 months.

Permanent. In this type of atrial fibrillation, the irregular heart rhythm can't be restored. Medications are needed to control the heart rate and to prevent blood clots.

When to see a doctor

If you have any signs or symptoms of atrial fibrillation, make an appointment with your doctor.

If you have chest pain, seek immediate medical help. Chest pain could mean that you're having a heart attack.

The typical heart has four chambers — two upper chambers (atria) and two lower chambers (ventricles). Within the upper right chamber of the heart (right atrium) is a group of cells called the sinus node. The sinus node is the heart's natural pacemaker. It produces the signal that starts each heartbeat.

In a regular heart rhythm:

The signal travels from the sinus node through the two upper heart chambers (atria).

The signal passes through a pathway between the upper and lower chambers called the atrioventricular (AV) node.

The movement of the signal causes your heart to squeeze (contract), sending blood to your heart and body.

In atrial fibrillation, the signals in the upper chambers of the heart are chaotic. As a result, the upper chambers shake (quiver). The AV node is then bombarded with signals trying to get through to the lower heart chambers (ventricles). This causes a fast and irregular heart rhythm.

The heart rate in atrial fibrillation may range from 100 to 175 beats a minute. The normal range for a heart rate is 60 to 100 beats a minute.

Causes of atrial fibrillation

Problems with the heart's structure are the most common cause of atrial fibrillation. Possible causes of atrial fibrillation include:

Coronary artery disease

Heart attack

Heart defect that you're born with (congenital heart defect)

Heart valve problems

High blood pressure

Lung diseases

Physical stress due to surgery, pneumonia or other illnesses

Previous heart surgery

Problem with the heart's natural pacemaker (sick sinus syndrome)

Sleep apnea

Thyroid disease such as an overactive thyroid (hyperthyroidism) and other metabolic imbalances

Use of stimulants, including certain medications, caffeine, tobacco and alcohol

Viral infections

Some people who have atrial fibrillation have no known heart problems or heart damage.

Risk factors

Things that can increase the risk of atrial fibrillation (A-fib) include:

Age. The older a person is, the greater the risk of developing atrial fibrillation.

Heart disease. Anyone with heart disease — such as heart valve problems, congenital heart disease, congestive heart failure, coronary artery disease, or a history of heart attack or heart surgery — has an increased risk of atrial fibrillation.

High blood pressure. Having high blood pressure, especially if it's not well controlled with lifestyle changes or medications, can increase the risk of atrial fibrillation.

Thyroid disease. In some people, thyroid problems may trigger heart rhythm problems (arrhythmias), including atrial fibrillation. Other chronic health conditions. People with certain chronic conditions such as diabetes, metabolic syndrome, chronic kidney disease, lung disease or sleep apnea have an increased risk of atrial fibrillation.

Drinking alcohol. For some people, drinking alcohol can trigger an episode of atrial fibrillation. Binge drinking further increases the risk.

Obesity. People who have obesity are at higher risk of developing atrial fibrillation.

Family history. An increased risk of atrial fibrillation occurs in some families.

Complications

Blood clots are a dangerous complication of atrial fibrillation that can lead to stroke.

In atrial fibrillation, the chaotic heart rhythm can cause blood to collect in the heart's upper chambers (atria) and form clots. If a blood clot in the left upper chamber (left atrium) breaks free from the heart area, it can travel to the brain and cause a stroke.

CONCLUSIONS

The risk of stroke from atrial fibrillation increases as you grow older. Other health conditions also may increase your risk of a stroke due to A-fib, including:

High blood pressure

Diabetes

Heart failure

Some valvular heart disease

Blood thinners are commonly prescribed to prevent blood clots and strokes in people with atrial fibrillation.

Prevention

Healthy lifestyle choices can reduce the risk of heart disease and may prevent atrial fibrillation. Here are some basic heart-healthy tips:

Eat a nutritious diet

Get regular exercise and maintain a healthy weight

Don't smoke

Avoid or limit alcohol and caffeine

Manage stress, as intense stress and anger can cause heart rhythm problems

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