Paroxysmal Supraventricular Tachycardia (PSVT)

What is PSVT?

PSVT is a condition characterised by episodes of a very fast heart rate that originate in an area of the heart above the ventricles. Paroxysmal means from time to time.

Background

The heart has four chambers – two upper chambers (referred to as the atria) and two lower chambers (referred to as the ventricles). Normally the chambers contract in a coordinated way, starting with an electrical signal originating at the sinoatrial node (SAN). This signal moves the atria causing them to contract and empty blood into the lower ventricles. The signal passes through the atrio-ventricular node (AVN) and down to the ventricles, which then contract and move blood into the arterial system of the body.

In PSVT, an abnormal electrical pathway causes the heart to beat much faster than normal, up to as high as 250 beats per minute (a normal heart rate is 60-100 beats per minute). These episodes can be short-lived for just a few minutes, or last several hours.

Causes

There are two types of PSVT that account for roughly 90% of cases; AV node re-entrant tachycardia (AVNRT) and Wolff-Parkinson-White syndrome (WPW). Both of these are re-entrant tachycardias. However, Wolff -Parkinson -White syndrome (WPW) is likely to be more common in children. These arrhythmias can be exacerbated by some environmental factors, including dehydration, alcohol intake, caffeine intake and non-cardiac illness.

Symptoms

Symptoms are intermittent, starting and stopping suddenly with little or no warning. Chest tightness, palpitations (awareness of the heartbeat), shortness of breath, dizziness and fainting are most commonly experienced.

Investigations

If you think you are suffering from PSVT, a doctor will examine you and will feel your pulse to measure your heart rate.

An electrocardiogram (ECG) will be done to gather more information about your heart rate and rhythm. Electrophysiology studies (EPS) may be done to give an accurate diagnosis and treatment options. This involves more invasive investigations including inserting a catheter containing small flexible wires into a blood vessel in your groin and threading it up to your heart. The heart's rate and rhythm can then be evaluated more accurately.

Since PSVT occurs intermittently, the abnormal heart rate may not be captured on a standard ECG recording. Therefore a monitor may be worn at home for 24/48/72 hours, or even longer, to try to get an accurate diagnosis.

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Treatment

Treatment for PSVT are as aggressive as symptoms demand. If PSVT occurs very infrequently, it may be that no treatment is needed. There are self-help manoeuvres that can be done to try to terminate an episode of PSVT –

- Valsalva manoeuvre- This involves holding your breath and straining at the same time, as if you were trying to have a bowel movement

- Coughing

- Cold water splashed to face and neck

- Avoid smoking, caffeine (and other stimulants)

There are several available treatments that can restore normal rhythm. These include electrical cardioversion (delivery of an electrical shock to the heart that resets the rhythm) and chemical cardioversion through administration of medications, such as adenosine. (a controlled electric shock is delivered to try and reset the heart into a normal rhythm).

For people with more regularly occurring episodes of PSVT, treatment options include medications such as flecainide or propafenone, cardiac ablation, pacemakers, and/or surgery. See treatment options for arrhythmias booklet for more information on these procedures.

Prognosis

PSVT itself is not usually life threatening, but if present with other heart disorders or disease, it can lead to congestive heart failure or angina.

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