
Paroxysmal supraventricular tachycardia (PSVT)

Definition

Paroxysmal supraventricular tachycardia (PSVT) is an occasional rapid heart rate. "Paroxysmal" means from time to time.

Alternative Names

PSVT; Supraventricular tachycardia

Causes

Normally, the chambers of the heart (atria and ventricles) contract in a coordinated manner. The contractions are caused by an electrical signal that begins in an area of the heart called the sinoatrial node (also called the sinus node or SA node). The signal moves through the upper heart chambers (the atria) and tells the atria to contract.

PSVT starts with events taking place above the lower heart chambers (ventricles). PSVT can be initiated in the SA node, in the upper heart chambers (atria), in the atrial conduction pathways, or other areas.

PSVT can occur with digitalis toxicity and conditions such as Wolff-Parkinson-White syndrome.

The condition occurs most often in young people and infants.

The following increase your risk for PSVT:

- Alcohol use
- Caffeine use
- Illicit drug use
- Smoking

Symptoms

- Anxiety
- Chest tightness
- Palpitations (a sensation of feeling the heart beat)
- Rapid pulse
- Shortness of breath

Additional symptoms that may be associated with this condition:

- Dizziness
- Fainting

Note: Symptoms may start and stop suddenly, and can last for a few minutes or several hours. A PSVT lasting more than half of the day is considered an incessant PSVT.

Exams and Tests

A physical examination during a PSVT episode will show a rapid heart rate.

The heart rate may be 150 to 250 beats per minute (bpm). In children, the heart rate tends to be very high. There may be signs of poor blood circulation such as lightheadedness. Between episodes of PSVT, the heart rate is normal (60 to 100 bpm).

An ECG during symptoms shows PSVT. An electrophysiology study (EPS) is often necessary for an accurate diagnosis and to recommend the best treatment.

Because of the sporadic nature of the PSVT, its diagnosis may require 24-hour Holter monitoring. For longer recording periods, a "loop recorder" (with computer memory) is used.

Treatment

If you do not have symptoms, PSVT may not require treatment.

If symptoms occur or if you have another heart disorder, treatment may be necessary.

If you have an episode of PSVT, a technique called the Valsalva maneuver can be used to interrupt the fast heartbeat. Hold your breath and strain, as if you were trying to have a bowel movement, or cough while sitting with your upper body bent forward.

Splashing ice water on the face has been reported by some people as helpful.

Emergency treatment of PSVT may include:

- Electrical cardioversion, the use of electric shock to restore a rapid heartbeat back to normal.
- Medicines through a vein, including adenosine and verapamil. Other medications may be used, such as procainamide, beta-blockers, and propafenone.

Long-term treatment of PSVT may include:

- Daily medications such as propafenone, flecainide, moricizine, sotalol, and amiodarone.
- Pacemakers to override the fast heartbeat; very occasionally used in children with PSVT who have not responded to any other treatment.
- Radiofrequency catheter ablation; currently the treatment of choice for most PSVTs.
- Surgery to change the pathways in the heart that send electrical signals; this may be recommended in some cases for people who need other heart surgery.

Outlook (Prognosis)

PSVT is generally not life threatening, unless other heart disorders are present.

Possible Complications

The main complication is an increased risk of heart failure.

When to Contact a Medical Professional

Call your health care provider if:

- You often have a sensation of excessive palpitations and symptoms do not end on their own in a few minutes
- You have a history of PSVT and an episode does not go away with Valsalva maneuver, or if other symptoms go along with the rapid heart rate
- Symptoms return frequently
- New symptoms develop

Prevention

Avoid smoking, caffeine, alcohol, and illicit drugs. Medications used to treat the disorder may be given as a preventive (prophylactic) treatment in people at a high risk or who have had previous episodes of PSVT.

References

Olgin JE, Zipes DP. Specific arrhythmias: diagnosis and treatment. In: Libby P, Bonow RO, Mann DL, Zipes DP, eds. *Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine*. 8th ed. St. Louis, Mo: WB Saunders; 2007:chap 35.



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