

PAROXYSMAL SUPRAVENTRICULAR TACHYCARDIA: DIAGNOSIS, EMERGENCY CARE

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Abstract

Paroxysmal tachycardia is an attack of sharply rapid heartbeat with a heart rate from 130 to 200 or more per minute. Usually, the attack begins suddenly and also ends suddenly. The duration of the attack is from several seconds to several hours and days. With paroxysmal tachycardia, a focus of excitation appears in any part of the conduction system of the heart, generating electrical impulses of high frequency. Such a focus can occur in the cells of the conduction system of the atria or ventricles.

Keywords: atrial flutter, paroxysm of supraventricular tachycardia, paroxysm of ventricular tachycardia, paroxysm of atrial fibrillation, paroxysm of atrial flutter, glaucoma, high myopia.

Introduction

Paroxysmal tachycardia is a paroxysmal increase in the number of heart contractions.

The diagnosis of paroxysmal tachycardia is made based on the patient's sensations, the characteristic onset of the attack, cardiac auscultation data and ECG. Characteristic features of paroxysmal tachycardia are:

- sudden onset and cessation of palpitations;
 - sometimes – the presence of precursors to an attack in the form of “interruptions”, “fading” of the heart, palpitations, an indefinite feeling of discomfort;
- increase in heart rate to 140-220 per minute;
the duration of the attack is from several seconds to several days;
during prolonged attacks, against the background of palpitations, general anxiety, fear, and sometimes dizziness arise;
the occurrence of an attack can be facilitated by emotional or physical stress, deep breathing with hyperventilation, the act of swallowing, a sudden change in body position, overeating;
ECG signs of paroxysmal rhythm disturbances (Fig. 69):

Paroxysm of supraventricular tachycardia

- sudden onset and cessation of palpitations;
- increase in heart rate to 140–220 per minute;
- unchanged QRST complexes;
- equal distance between teeth RR.



Ventricular paroxysmal tachycardia

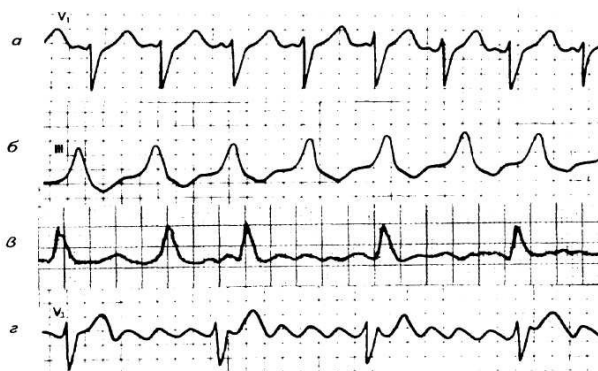
- sudden onset and cessation of an attack of tachycardia up to 140–220 per minute;
- deformation and expansion of the QRS complex more than 0.12 s discordant location of the ST segment to the T wave;
- equal RR intervals.

Paroxysm of atrial fibrillation

- irregular ventricular rhythm (different distance between RR teeth);
- absence of P wave;
- the presence of F (f) waves, which are better expressed in lead V₁.

Paroxysm of atrial flutter

- the presence on the ECG of frequent (up to 200–400 per minute) regular, similar atrial F waves, which have a characteristic sawtooth shape. Ventricular QRST complexes may be preceded by 2 (2:1), 3 (3:1), 4 (4:1), etc. F waves;
- RR intervals are usually equal (regular form of atrial flutter), in more rare cases different (irregular form of atrial flutter).



Rice. 69. ECG for paroxysmal rhythm disturbances:

a – paroxysm of supraventricular tachycardia; b – paroxysm of ventricular tachycardia; c – paroxysm of atrial fibrillation; d – paroxysm of atrial flutter

Family doctor strategy: stopping an attack.

Family doctor tactics:

With paroxysm of supraventricular tachycardia

1. carrying out reflex tests:
 - Aschner-Danyini – pressing with fingers on the lateral parts of the patient's eyeballs for 15-20 seconds. (contraindications: glaucoma, high myopia);
 - Chermak-Goering - alternating, 20-30 seconds, massage of the carotid sinus area on both sides (contraindications: severe atherosclerosis, cerebrovascular accident);
 - Valsalvas – a shallow breath followed by straining (to increase intrathoracic pressure) for 15-20 seconds;
 - inducing a gag reflex.
2. If reflex effects are unsuccessful, medications should be used:
 - ATP 6 mg IV bolus , if necessary, repeat twice 12 mg every 1-2 minutes;



- after 5 minutes isoptin 5-10 mg (2-4 ml) IV without dilution over 20-30 seconds;
- after 5-10 minutes isoptin 5 mg IV without dilution over 20-30 seconds;
- after 10-15 minutes novocainamide 10% solution 5-10 ml per 10 ml of isotonic solution IV over 3-5 minutes (**blood pressure control!**), repeating, if necessary, IM administration after 30-40 minutes; OR rhythmlyene 1% solution 10 ml IV up to a total dose of 30 ml (300 mg) over an hour;
- after 60 minutes strophanthin 0.05% solution 0.75-1 ml, OR digoxin (isolanide) 0.025% solution 2 ml per 10-20 ml of panangin IV for 3-5 minutes;
- after 2-3 hours cordarone 300-450 mg (2-3 ampoules) IV in 150-200 ml isotonic solution over 10-15 minutes, OR obzidan 1-5 mg (1-5 ml) per 15 ml isotonic solution , OR cordanum 10 mg (10 ml) per 10 ml of isotonic solution IV over 5-10 minutes.

With ventricular paroxysmal tachycardia

- lidocaine 2% solution 120-160 mg (6-8 ml), OR trimecaine 5% solution 2-4 ml without dilution IV over 1-3 minutes, at the same time 300-400 mg (10% lidocaine solution 3-4 ml) IM into the deltoid muscle;
- after 20-30 minutes novocainamide 10% solution 5-10 ml IV in an isotonic solution over 3-5 minutes (**blood pressure control!**) , repeating infusions or IM injections of the drug after 30 minutes, OR Rhythmlyene 1% solution 10 ml IV, if necessary, increasing the total dose over 1 hour to 30 ml;
- after 1-2 hours cordarone 300-450 mg (2-3 ampoules) IV in 150-200 ml isotonic solution over 10-15 minutes, OR obzidan 5-10 mg (5-10 ml), OR ornid 300 mg IV over 10-15 minutes.

If drug therapy is ineffective - EIT.

With paroxysm of atrial fibrillation

- isoptin 2-4 ml (5-10 mg) intravenously , panangin 10-20 ml or 4% potassium chloride solution 50-70 ml in 200 ml 5% glucose solution IV drip ;
- after 10-15 minutes novocainamide 10% solution 5-10 ml per 10 ml of isotonic solution IV over 3-5 minutes, repeat if necessary after 30 minutes (**BP control!**) , OR Rhythmlyene (rhythmolan) 1% solution 10 ml IV, repeat administration after 30 minutes if necessary. twice;
- after 1.5-2 hours cordarone 300-450 mg (2-3 ampoules) IV in 150-00 ml isotonic solution over 10-15 minutes, OR obzidan 1 mg (1 ml) 1 minute before the total dose of 10 mg IV in an isotonic solution (blood pressure control), OR (in the presence of heart failure) strophanthin 0.05% solution 0.75-1.0 ml OR digoxin 0.025% solution 2 ml per 10 ml panangin IV in 3-5 minutes. Cardiac glycosides should not be administered if electrical pulse therapy (EPT) is planned. Drug combinations can be used.

In the absence of heart failure:

Kynylentin (quinidex , quinidin Durules or other quinidine preparations) 0.4 g orally, then 0.4 g (0.2 g) every 3 hours, a total of 5 doses, + anaprilin (obzidan) 40-80 mg again every 4-6 hours.



In the presence of heart failure, digoxin is added to kinylentine instead of anaprilin 1 tablet (0.25 mg) every 4 hours, but not longer than 1 day . (provided that the patient does not have an overdose of cardiac glycosides).

Usually the rhythm is restored after 2-3 doses of drugs. In these cases, maintenance doses of one of the drugs are prescribed: kinylentine 0.2 g 2-3 times a day; OR/AND anaprilin 20-40 mg up to 6 times a day; OR korgard 80 mg per day (for 1-2 doses); OR etacizin 0.05 3 times a day; OR cordarone according to the scheme.

With paroxysm of atrial flutter

- the method of choice is EIT.

If this is not possible:

- isoptin 2-4 ml IV bolus ; OR panangin 10-20 ml; OR 4% potassium chloride solution 40-50 ml IV in 100 ml isotonic solution + strophanthin 0.05% solution 0.75-1.0 ml (OR digoxin 0.025% solution 2 ml);
- after 2-3 hours cordarone 300-450 mg IV over 10-15 minutes. (up to 1200 mg/ day) in isotonic solution, OR obzidan 1 mg (1 ml) per 1 min. up to a total dose of 10 mg IV in an isotonic solution slowly.

Note: all activities are carried out under ECG (monitor) control. If EIT is planned from the start of treatment, cardiac glycosides should not be used.

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