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TREATMENT OF UNCOMPLICATED AND COMPLICATED HYPERTENSIVE CRISIS

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ANNOTATION

A hypertensive crisis is "an acute, pronounced increase in blood pressure, accompanied by clinical symptoms and requiring an immediate, controlled reduction in order to prevent or limit target organ damage" [1]. The key point in this definition is not the level of blood pressure (BP), but the severity of clinical symptoms; this is what is most important for diagnosing the type of hypertensive crisis and choosing further tactics for patient management. However, the accuracy of blood pressure measurements is also important.

KEYWORDS

dissecting aortic aneurysm, pulmonary edema, myocardial infarction, unstable angina, hypertensive encephalopathy, subarachnoid hemorrhage, eclampsia, catecholamine crisis

Hypertensive crisis is a sudden increase in blood pressure, accompanied by clinical symptoms and requiring its immediate reduction to prevent damage to target organs (central nervous system, cardiovascular system and kidneys).

There are two large groups of hypertensive crises, differing in the need to provide the patient with more or less emergency care.

The first group includes **emergency conditions** that require medical treatment for life-saving reasons and a decrease in blood pressure within a period of several minutes to 1 hour (complicated hypertensive crisis) .

Conditions requiring blood pressure reduction within 1 hour:

dissecting aortic aneurysm pulmonary edema

myocardial infarction

unstable angina, severe nosebleeds, hypertensive encephalopathy

intracranial hemorrhage subarachnoid hemorrhage cranial trauma

eclampsia

catecholamine crisis in pheochromocytoma, postoperative bleeding from the area of vascular sutures, severe retinopathy .

These conditions require mandatory hospitalization in the intensive care unit and parenteral administration of antihypertensive drugs. The consequences of a crisis can be irreversible (myocardial infarction, stroke, dissecting aortic aneurysm) or reversible (unstable angina, pulmonary edema, etc.).

The second group includes emergency conditions , in which it is necessary to reduce blood pressure in a period from several hours to one day.

Conditions requiring a decrease in blood pressure within several hours:

SBP more than 240 mm Hg . and/or DBP more than 120 mmHg . without complications malignant hypertension without complications

perioperative hypertension

antihypertensive withdrawal syndrome severe burns

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renal crisis in scleroderma.

In patients, severe hypertension is detected without visible damage to target organs, or with minor damage. These conditions do not require hospitalization and therapy can be started with oral drugs with a rapid onset of action (loop diuretics, β-blockers , ACE inhibitors,

The quantitative boundaries of a hypertensive crisis are relatively arbitrary. It is very important to consider the presence of a high risk of developing or developing symptoms of target organ damage.

Diagnosis of hypertensive crises is based on the following main criteria: sudden onset; individually high rise in blood pressure; the presence of cerebral, cardiac and autonomic symptoms.

Family doctor strategy

intensive therapy with constant blood pressure monitoring;

after normalization of blood pressure, selection of antihypertensive drugs for continuous use.

Family doctor tactics

When treating an uncomplicated crisis, reduce blood pressure to a safe level.

In patients with dissecting aortic aneurysm or pulmonary edema, the reduction in blood pressure should be more active. In patients with cerebrovascular disorders, the decrease in blood pressure should be especially slow, with careful monitoring of neurological status.

When blood pressure increases again more than 180/120 mm Hg . a short-acting drug should be prescribed orally in an adequate dose and with an adequate frequency

of administration, and after stabilization of the condition, a long-acting drug should be prescribed.

In an uncomplicated crisis, it is recommended to reduce blood pressure by 25% within a few minutes - 2 hours, and in the next 2-6 hours - to 160/100 mm Hg . Blood pressure should be monitored at 15-30 minute intervals. Too sharp a decrease in blood pressure is dangerous for the development of hypoperfusion , ischemia of the kidneys, brain or myocardium.

Emergency drug therapy in young and middle-aged people:

- Dibazol 0.5% solution 6-8 ml + Lasix 40 mg + Relanium 0.5% (seduxen, sibazon) 2 ml IV;
- OR droperidol 0.25% solution 4-6 ml + pipolfen 2.5% solution (diphenhydramine 1% solution) 2 ml IV;
- in 30 min. clonidine 0.01% solution 1 ml in 10 ml of 0.9% sodium chloride solution IV (slowly!) at a rate of 2 ml/min. Side effects: hypotension, drowsiness, dry mouth, fluid retention, bradycardia, etc.
- OR pentamine 5% solution 0.5-1 ml IM;
- after 1 hour, diazoxide (hyperstat) 75 mg (5 ml) intravenously in a bolus , if there is no effect, at 5-minute intervals, 150 mg (10 ml) again up to a dose of 600 mg (40 ml);

– OR sodium nitroprusside 50 mg in 500 ml of 5% glucose solution very slowly – at a rate of 12-14 drops per minute (under constant blood pressure monitoring!). The bottle must be covered with black paper, because the drug is quickly destroyed in the light. Side effects: severe arterial hypotension, loss of consciousness, toxic effects of cyanides and thiocyanates , nephrotoxicity , tachycardia, shortness of breath, etc.

Emergency treatment in elderly and senile people:

– clonidine 0.075-0.15 mg, or corinfar (cordafen , cordipin , adalat) 10-20 mg sublingually;

- in 40-60 minutes. Dibazol 0.5% solution 4-6 ml IV;
- OR clonidine 0.01% 1 ml in 10 ml of 0.9% sodium chloride solution IV (slowly!) at a rate of 2 ml/min. +

furosemide 40 mg orally or intravenously;

- after 1-1.5 hours pentamine 5% solution 0.3-0.5 ml IM.

Emergency drug therapy for hypertensive crisis complicated by hypertensive encephalopathy:

– labetalol 10% solution 20 ml IV bolus in an isotonic solution (side effects: bronchospasm , orthostatic hypotension, heart block, increased signs of heart failure, tachycardia, nausea, etc.);

- OR phentolamine 0.5% solution 1 ml in 10 ml of isotonic solution;
    - OR Dibazol 1% solution 6-10 ml IV + Lasix 60-80 mg IV + magnesium sulfate 25% solution 10 ml IV (side effects: decreased cardiac output with long-term use);
    - in 30 min. arfonad 250 mg in 250 ml 5% glucose solution IV drip (under constant blood pressure monitoring!) – start with 20 drops per minute, maximum infusion rate – 120 drops per minute;
    - OR sodium nitroprusside 50 mg in 500 ml of 5% glucose solution very slowly - 12-14 drops per minute (under constant blood pressure monitoring!);

– OR pentamine 5% solution 0.5-1 ml IV slowly;

– if the effect is insufficient, add droperidol 0.25% solution 2-4 ml, Lasix 80 mg IV.

Each subsequent stage of drug therapy assumes the ineffectiveness of the previous one.

In case of hypertensive crisis against the background of concomitant pathology:

- for stroke - sodium nitroprusside (if diastolic blood pressure is above 130 mm Hg), OR diazoxide , OR labetalol ; additionally – furosemide ; sometimes magnesium sulfate, dibazole, captopril are effective ;
- for diencephalic disorders (tremors, chills, fear, nausea, etc.) – droperidol OR anaprilin (sublingual 40-80 mg) or obzidan (1-5 mg IV slowly), Relanium (Seduxen) IV solution or sublingual tablet;
- for myocardial infarction, incipient pulmonary edema: narcotic analgesics with droperidol , nitroglycerin , sodium nitroprusside , captopril . If there is a significant increase in blood pressure, pentamine can be used or arfonade ;
- for renal failure: sodium nitroprusside or labetalol ;
- for eclampsia/preeclampsia: hydralazine, magnesium sulfate, labetalol, calcium antagonists (inhibit uterine contractions) .

Criteria for relieving a hypertensive crisis:

- normalization of blood pressure or achievement of a safe level of blood pressure for a given patient, although normalization of blood pressure alone does not always indicate complete relief of the crisis;
- normalization of cerebral circulation indicators;
- normalization of ECG data;
- positive dynamics of central hemodynamic parameters.

Indications for hospitalization of patients with hypertensive crisis:

- severe course and resistance to pharmacological agents;
- severe signs of encephalopathy, blurred vision, pulmonary edema, angina pectoris, cardiac arrhythmias;
- repeated rise in blood pressure after a short period of time;
- oliguria or anuria.

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