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СОВРЕМЕННЫЕ ПОНЯТИЕ О ГИПЕРТОНИЧЕСКОЙ БОЛЕЗНИ

Аннотация: Приведены сведения о гипертонической болезни, ее классификация, механизмы развития, элементы немедикаментозного лечения и методы профилактики заболевания. Даны основные различия от вторичной гипертензии и другие основные понятия.

Ключевые слова: гипертоническая болезнь, характер течения, варианты лечения, лабораторная диагностика, профилактика.

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MODERN CONCEPTS OF HYPERTENSION

Abstract: The article provides information about hypertension, its classification, development mechanisms, elements of non-drug treatment and methods of disease prevention. The main differences from secondary hypertension and other basic concepts are given.

Keywords: hypertension, course of the disease, treatment options, laboratory diagnostics, prevention.

Hypertension (HT) is a chronic stable increase in blood pressure, in which people who do not receive antihypertensive drugs have a systolic blood pressure of ≥140 mm Hg and/or a diastolic blood pressure of ≥90 mm Hg (WHO and International Society of Hypertension recommendations 1999). Arterial hypertension (AH) is a cause of heart attack and stroke. According to WHO estimates, in 2012, >17.5 million people died from heart attack and stroke worldwide.

Epidemiology

According to the epidemiological study "EPOCH" (European part of Russia, 2002), the prevalence of hypertension is 39.2%, and effective treatment of hypertension is achieved only in 7.2% of patients. It is noted that it increases with age. Hypertension occurs in 50% of people aged 60-69 years and in 75% of those aged ≥70 years. Among patients under 40 years old, there are more men, in older age groups there are more women. However, not all people with high blood pressure (BP) are aware of it. Awareness of the presence of high BP is 59% in women and 37% in men. It is also noted that not all people suffering from hypertension receive drug treatment (45% of women and 21% of men); while the target BP values are achieved only in 17% of women and 5% of men.

Classification

Etiological:

- essential (primary) hypertension is distinguished;
- secondary (symptomatic).

Secondary (symptomatic) hypertension is a manifestation of the underlying disease (glomerulonephritis, pyelonephritis, renal tuberculosis, hydronephrosis, renal tumors, renal artery stenosis, thyrotoxicosis, pheochromocytoma, Itsenko-Cushing syndrome, etc.). Secondary hypertension accounts for 5-10% of hypertension cases. As a rule, treatment of secondary hypertension consists of treating the disease that led to the increase in blood pressure.

Essential (primary) hypertension, or AH, develops as an independent chronic disease; it accounts for 90–95% of cases of increased blood pressure.

By the nature of the flow:

- benign (slowly progressive) course;
- malignant (rapidly progressing).

According to the level of diastolic blood pressure, the following are distinguished:

- mild course – diastolic blood pressure <100 mm Hg;
- moderate course: diastolic blood pressure – from 100 to 115 mm Hg;
- severe course – diastolic blood pressure – >115 mm Hg.

By blood pressure level:

Classification of blood pressure levels

Category	Systolic blood pressure, mmHg	Diastolic blood pressure, mmHg
Optimal blood pressure	<120	<80
Normal blood pressure	120–129	80–84
High normal blood pressure	130–139	85–89
I degree of hypertension (mild)	140–159	90–99
II degree (moderate)	160–179	100–109
III degree (severe)	>180	>110
Isolated systolic hypertension	>140	<90

Mechanisms of development of hypertension

The pathogenesis of hypertension is based on an increase in the volume of cardiac output and resistance of the peripheral vascular bed.

Let us present the development mechanism schematically: Stress factor disturbance of the regulation of the tone of peripheral vessels by the higher centers

of the brain (hypothalamus, medulla oblongata) spasm of arteries in the periphery, including renal arteries increased secretion of neurohormones renin-angiotensin-aldosterone system secretion of aldosterone retention of water and sodium in the vascular bed increase in the volume of blood circulating in the vessels increase in blood pressure.

In hypertension, blood viscosity increases, which causes a decrease in blood flow and metabolic processes in tissues. The inert walls of blood vessels thicken, their lumen narrows, which fixes a high level of total peripheral vascular resistance and makes hypertension irreversible.

Subsequently, as a result of increased permeability and plasma impregnation of the vascular walls, elastofibrosis and arteriolosclerosis develop, which ultimately leads to secondary changes in organ tissues: myocardial sclerosis, hypertensive encephalopathy, primary nephroangiosclerosis.

The degree of damage to various organs in hypertension may be different, therefore, several clinical and anatomical variants of hypertension are distinguished with predominant damage to the vessels of the kidneys, heart and brain.

Risk factors:

- smoking;
- dyslipidemia;
- obesity;
- diabetes mellitus (DM);
- frequently recurring nervous tension;
- increased salt intake (>5 g/day);

Screening

Blood pressure should be measured at least once every 3–5 years, that is, in all patients who visit a doctor for another reason or during preventive examinations.

In case of a slight increase in blood pressure (130–139/85–89 mm Hg) or

indications of increased blood pressure in the past, annual blood pressure monitoring is necessary.

Diagnostics

When examining patients with suspected hypertension, it is necessary to exclude secondary hypertension, confirm a stable increase in blood pressure, identify the presence and extent of damage to target organs, assess the stage of hypertension and the degree of development of complications.

When collecting anamnesis, special attention is paid to the patient's exposure to risk factors for hypertension, complaints, the level of increased blood pressure, the presence of hypertensive crises and concomitant diseases.

To determine the presence and degree of hypertension, informative and dynamic measurement of blood pressure is recommended.

To obtain reliable blood pressure readings, the following conditions must be met:

- the measurement should be carried out in a comfortable, calm environment, after 5–10 minutes of rest;
- it is recommended to avoid smoking, eating, drinking tea, coffee, and vasoconstrictor nasal and eye drops 1 hour before the measurement;
- patient position – sitting, standing or lying, the arm is at the same level as the heart;
- the cuff is placed on the shoulder, 2.5 cm above the elbow fold;
- during the patient’s first visit, blood pressure is measured on both arms, with repeated measurements after a 1–2-minute interval;
- if blood pressure asymmetry is >5 mmHg, subsequent measurements should be taken on the arm with higher readings;
- in other cases, blood pressure is usually measured on the “non-working” arm;
- certified devices should be used;

- deflate the cuff slowly (2 mmHg/s).

Laboratory research

Mandatory tests:

- blood biochemistry (fasting glucose, total cholesterol and high-density lipoprotein cholesterol, triglycerides, creatinine, uric acid and serum potassium);
- general blood test (hemoglobin and hematocrit);
- urine analysis (test strips and sediment examination);
- ECG.

Recommended additional studies:

- EchoCG;
- Ultrasound of the carotid and femoral arteries;
- blood plasma glucose after meals (if the fasting glucose level exceeds 6.1 mmol/l);
- C-reactive protein (highly sensitive);
- microalbuminuria;
- quantitative assessment of proteinuria (with a positive qualitative test);

• examination of the fundus (in severe hypertension).

Differential diagnostics

Essential (primary) hypertension must be differentiated from secondary (symptomatic) hypertension. To suspect secondary hypertension, the patient's medical history is carefully studied; at the 1st stage, a thorough physical examination is performed.

Such anamnesis data as polycystic kidney disease in close relatives, kidney

disease, urinary tract infection, hematuria, analgesic abuse (renal parenchyma disease), use of oral contraceptives, cocaine, amphetamines, glucocorticosteroids, nonsteroidal anti-inflammatory drugs, cyclosporine, complaints of attacks of sweating, headache, anxiety, palpitations (pheochromocytoma), attacks of muscle weakness and cramps (hyperaldosteronism) indicate secondary hypertension.

The following signs may also help to suspect secondary hypertension: skin signs of neurofibromatosis (pheochromocytoma), an appearance characteristic of Itsenko-Cushing syndrome, palpable enlargement of the kidney (polycystic disease), noise in the projection of the renal arteries (renovascularization of hypertension), heart murmur or noise in the precordial region (aortic disease or aortic coortation).

If secondary (symptomatic) hypertension is suspected, the patient is referred for consultation to other specialists.

Treatment

The decision to prescribe antihypertensive therapy must be made based on 2 criteria:

- level of overall cardiovascular risk;
- systolic and diastolic blood pressure levels.

Treatment of mild to moderate hypertension

70% of hypertensive patients suffer from this form of hypertension. One of the complications of mild hypertension may be cerebrovascular accident. Fatal outcomes against the background of hypertension are possible even with a pressure of 140/90 mm Hg.

In cases of mild and moderate hypertension, a 3-stage treatment regimen is used.

Stage 1: Non-drug treatment. About 50% of patients with moderate hypertension can control their blood pressure without medications (MDs).

Non-drug treatment includes:

- a diet without fatty foods and low in salt;
- quitting smoking tobacco;
- refusal to consume alcoholic beverages;
- reduction of excess body weight;
- herbal medicine;
- auto-training;
- reflexology;
- acupuncture;
- electrosleep.

If there are aggravating factors in the anamnesis, medications may be prescribed. Such factors include: crises, sudden pressure surges, vascular atherosclerosis, cases of malignant hypertension in parents, left ventricular hypertrophy (LVH), death of close relatives from cardiovascular pathology.

Stage 2: non-drug treatment and 1 drug. Drugs should be started if after 3-4 months of Stage 1 treatment there is no stable reduction in blood pressure or the disease has progressed to a more severe stage.

In stage 2, the same standard of non-drug therapy should be followed as in stage 1.

In addition, the doctor prescribes 1 drug in a minimum dosage to reduce blood pressure. The correct choice of medications and their continuous use are of great importance. It is necessary to take into account all contraindications, the possibility of correcting risk factors, concomitant diseases.

In drug therapy of hypertension, the following classes of drugs can be used, which can be combined with each other, according to known treatment regimens for hypertension:

- diuretics;
- β-blockers;
- α-blockers;

- calcium channel blockers;
- angiotensin-converting enzyme inhibitors (ACEIs);
- angiotensin receptor blockers.

Stage 3: Lifestyle changes and combination of drugs. They move on to the 3rd stage if the blood pressure does not decrease with an increase in the drug dose. In this case, a decision is made to replace the drug or to prescribe 2 drugs of different groups at once.

Scheme of possible combinations of antihypertensive drugs

The figure shows possible combinations in solid color, and undesirable ones in dotted color.

If the combination of 2 drugs also did not lead to a decrease in blood pressure, a third one is added. It is imperative to adhere to the above recommendations for changing your lifestyle. Only by following them and taking the drugs throughout your life can you keep hypertension under control. You cannot suddenly stop taking drugs for hypertension, as this can lead to complications such as heart attack and stroke.

A positive result of treatment is considered to be the achievement of normal or borderline BP, and in case of severe hypertension it should be reduced by 15% of the initial value. The number of daily BP fluctuations should also decrease, cardiac output should decrease, and LVH should reverse.

Treatment of severe hypertension

Severe hypertension (malignant form) is characterized not only by a significant increase in blood pressure and resistance to drug therapy, but also by serious damage to target organs: blood vessels of the brain and fundus, kidneys and heart.

In severe hypertension, due to its resistance to drug treatment, it is necessary

to use several drugs of different groups. Combinations of 3-4 drugs are used to reduce blood pressure:

- diuretics, β-blockers, ACE inhibitors;
- calcium antagonists, ACE inhibitors, diuretics, α-blockers;
- diuretic, calcium antagonist, β- and α-adrenergic blockers;

As a result of treatment, the following results must be achieved:

- decrease blood pressure by 25% (blood pressure must be reduced gradually, first by 15%, then, depending on how you feel, bring the reduction to 25%, and then, if there is no deterioration in health, bring blood pressure to normal values);
- improve vision and the condition of the fundus;
- improve kidney function;
- achieve the disappearance of signs of hypertensive encephalopathy.

If positive results are achieved, the prescribed therapy should be followed and a cardiologist should be consulted once every 3 months so that the doctor can adjust the therapy if necessary. In addition, hypertension patients should keep a diary in which blood pressure figures should be recorded daily.

Lifestyle of a patient with hypertension

In order to live as long as possible and to ensure that the quality of life does not deteriorate, all patients must constantly adhere to a certain lifestyle:

- make the diet salt-free;
- monitor your body weight and do not gain it;
- quit smoking;
- give up alcohol;
- eat less protein foods;

- add fruits, vegetables, greens, and foods rich in potassium to your diet;
- avoid fatty and spicy foods;
- engage in physical education;
- measure blood pressure regularly;
- try not to be nervous, sleep at night for at least 7 hours a day;
- do not skip taking your medications.

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