

Clinical and Functional Features of Arterial Hypertension in the Elderly

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Abstract – The article describes the research results and literature data on the diagnostics and treatment of arterial hypertension. More than 600 patients of different age and gender groups were examined. With aging, women and men are more susceptible to this disease. Hypertension can be caused by an improper diet, a sedentary lifestyle, bad habits. The relationship between family history and hypertension was identified. A family history of hypertension (parents, grandparents or siblings) was present in 63.0 % of patients with hypertension.

Keywords – arterial hypertension, gender groups, age groups, diabetes mellitus, risk factors, family history

I. INTRODUCTION

According to the WHO global summary, hypertension is one of the key risk factors for diseases of the cardiovascular system. Hypertension is a syndrome of the high systolic blood pressure (MAP) ≥ 140 mmHg. Art. and / or diastolic blood pressure (DBP) ≥ 90 mm Hg. Art. According to the 2008 recommendations, the level of $<130/80$ mm Hg. Art. should be maintained in patients with hypertension and diabetes and under high risks of complications [1].

The word "hypertension" has a Greek origin and is translated literally: hyper – excessively; tonos – tension. Hypertension is an elevated pressure of blood or lymph. The term *essential hypertension*, or "arterial hypertension," was introduced by E. Frank in 1911. In 1922, Bergmann named it a high blood pressure disease. In Russia, G.F. Lang named this pathology "hypertension".

There are the following forms of hypertension: systolic AH (CAD > 140 mmHg), diastolic AH (DBP > 90 mmHg), systolic-diastolic AH (CAD > 140 mm RT. Art. DAD > 90 mm Hg. Art., isolated systolic AH (CAD > 140 mm Hg., DBP < 90 mmHg) [9].

The result of the AH is a stiff artery that has a reduced capacity and limited output. It is unable to adapt to changes that occur during the cardiac cycle. In addition, the arteriosclerotic arterial vessel has limited expansion and is not able to buffer the pressure created by the heart increasing the systolic blood pressure (SBP). On the other hand, the loss of output decreases the diastolic blood pressure (DBP) [6]

The urgency of the problem of arterial hypertension in old aged people is determined by its high frequency. It affects their health, performance and life expectancy. The frequency of hypertension increases with age.

The AH affects the population of countries with a tense neuro-emotional life background [1]. In many countries, more than 50 % of people over 60 have high blood pressure. The old age, overweight and lack of physical activity contribute to the AH.

II. METHODS AND MATERIALS

We studied medical records of 480 patients of the clinic and 205 patients of the hospital. Their general history and family history were studied, and clinical examination was conducted. A large number of patients with arterial hypertension is hereditary, so it is necessary to clarify whether

family members suffer from arterial hypertension and other cardiovascular diseases.

Of all patients examined in the first quarter of 2019, 90.2 % were diagnosed with arterial hypertension.

We identified 4 age groups:

- Group 1 – patients under 60;
- Group 2 – patients aged 60-69;
- Group 3 – patients aged 70-80;
- Group 4 – patients over 80.

An original questionnaire was developed. It included questions to determine the genesis of high blood pressure, associated diseases:

- 1) how the high blood pressure was identified;
- 2) when it was identified;
- 3) nature of work (stress, hypodynamia, noise, vibration, humidity, night shift, etc.);
- 4) lifestyle and diet;
- 5) heredity (high blood pressure, heart disease, cerebrovascular accident, diabetes, obesity).

The body weight was measured.

III. RESULTS

Among 480 patients of the clinic, there were 115 patients under 60 (23.9 %) (38 men and 77 women); 189 patients aged 60–69 years (39.4 %) (67 men and 122 women); 160 patients aged 70–80 years (33.3 %) (71 men and 89 women), and 12 patients over 80 (2.5 %) (7 men and 5 women) (Fig. 1).

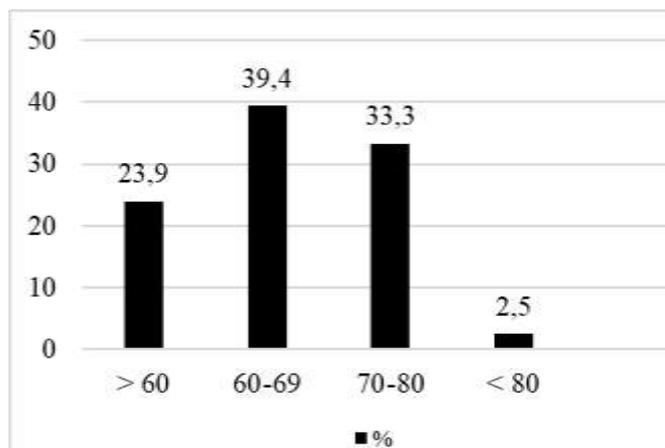


Fig. 1. Age groups of clinic patients

Among 205 patients of the hospital, there were 39 people under 60 (20.6 %); 58 patients aged 60–69 years (30.7 %); 55 patients aged 70–80 (29.1 %) and 37 patients over 80 (19.6 %) (Fig. 2).

Female patients are more susceptible to these diseases. They are underestimated in terms of risks. With aging, both

women and men become more susceptible to this disease. This is confirmed by our data (Fig. 3)

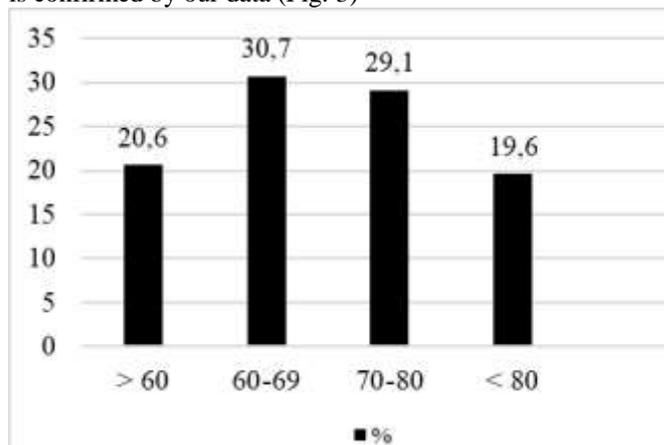


Fig. 2. Age groups of hospital patients

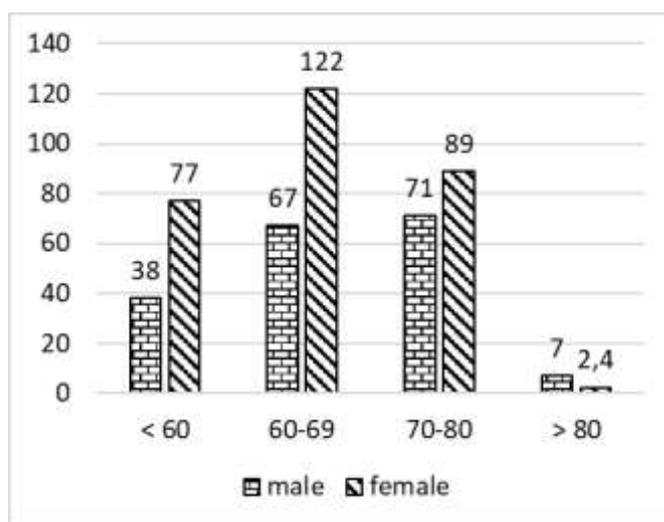


Fig. 3. Gender distribution of age groups of clinic patients

With aging, the number of female patients with arterial hypertension and type 2 diabetes mellitus significantly increased.

The analysis showed that 80 % of patients were overweight. In contrast to women, in men, the overweight was observed only when comparing persons under 45 with those of older age.

The most common concomitant pathology was diabetes, affecting 37.1 % of patients. 11 patients suffered from hypertensive crisis; the mean systolic / diastolic blood pressure in patients with hypertensive crisis was 185/100 mmHg.

Diabetes mellitus and hypertension are common chronic diseases that often coexist. Large epidemiological studies have shown that diabetes is associated with increased mortality from cardiovascular diseases. In these patients, hypertension speeds up morbidity and mortality. In addition, cardiovascular diseases are more than twice as common in patients with diabetes and hypertension than in patients with any of these

diseases. The prevalence of arterial hypertension in patients with diabetes is about two times higher than in patients without diabetes [2, 4].

Hypertensive heart disease combined with diabetes mellitus causes rapid development of complications of small vessels of the kidneys and retina and large vessels of the heart, brain, peripheral vessels of the lower extremities. Increased blood pressure (BP) was observed in 80 % of patients with type 2 diabetes. The combination of diabetes and hypertension increases the risk of coronary heart disease (CHD) by 2–4 times, heart stroke – by 2–3 times, total loss of vision – by 10–25 times, uremia – by 15–20 times, gangrene of the lower extremities – by 20 times [2].

According to our data, in hospital patients, the shares of people with hypertension and diabetes were as follows:

- under 60 old – 17.3 %;
- 60–69 – 22.4 %;
- 70–80 – 16.4 %;
- over 80 – 13.5 %.

The survey showed that hypertension can be caused by the poor diet, sedentary lifestyle, and bad habits.

An increasing intake of sodium chloride increases blood pressure. For older people, limited salt intake and diuretics are very efficient to fight against hypertension.

In addition, the family history is an important unmodifiable risk factor for the development of hypertension. The hereditary nature of hypertension is confirmed by numerous studies. A relationship was found between family history and hypertension. The family history of hypertension (parents, grandparents or siblings) was present in 63.0 % of patients.

The choice of medicines is determined by the history of the disease and previous therapy. In older people, rational antihypertensive therapy is difficult to choose due to the presence of a large number of comorbidities and contraindications.

The purpose of antihypertensive therapy is to reach the target blood pressure level [1, 2] and protect target organs (heart, kidney, brain). Currently, the target blood pressure level of 140/90 mmHg is recommended. It is desirable to strive to decrease blood pressure below these values.

In patients with diabetes mellitus (DM), it is necessary to strive to achieve a lower level of blood pressure [3].

Almost all patients took diuretic-based antihypertensive drugs, 90.8 % took hydrochlorothiazide. Other patients took perindopril (70.1 %), bisoprolol (56.4 %) and nifedipine (29.7 %). 90.0 % of patients were treated with a combination of two or more antihypertensive drugs. 29.7 % of patients had at least one change in the mode of antihypertensive therapy: in 43.6 % of cases, antihypertensive drugs were replaced because of side effects. The most frequent side effects were hypotension, fatigue in patients taking bisoprolol (n = 6), and cough caused

by perindopril (n = 3). The therapy was intensified in 12 patients (46.8 %).

Currently, fixed combinations containing two antihypertensive drugs (AHD) in one tablet are used. ACE / BRAII in combination with BPC or / and thiazide / thiazide-like diuretics are preferred.

Drug therapy options should be discussed with the patient. Unsuccessful drug treatment in the elderly may cause a sudden stroke or a heart attack with severe disability or death.

Along with medication, changes in lifestyle are recommended: maintaining a low-salt diet, increasing plant foods, reducing an animal fat intake, stopping smoking, normalizing a body mass index, reducing an alcohol intake, and sufficient physical activity.

Factors that aggravate hypertension in the elderly are complex family relationships and loneliness.

Lifestyle changes, including changes in diet, physical activity and weight loss reduce blood pressure and the need for antihypertensive drugs.

Using fewer drugs or lower drug doses can minimize side effects. Obesity associated with poor diet and low physical activity is often observed in patients with hypertension.

IV. CONCLUSION

Hypertension is an important risk factor for cardiovascular disease and mortality, especially in the elderly. Modern therapy of arterial hypertension should correspond to the basic tenets applicable to the treatment of any nosological forms: predictiveness, preventiveness, personalization and participativeness. Numerous studies have shown that adequate correction of the level of blood pressure in elderly patients reduces the risk of complications (stroke, heart failure, myocardial infarction and all-cause mortality). Treatment reduces cognitive impairment and dementia. A healthy lifestyle is one of the cornerstones in the treatment of hypertension. Individualization of treatment should be based on the presence of concomitant cardiovascular risk factors or other diseases. The number of older people is increasing, and the treatment dilemma is aggravated by changes in their physiology and artery structure caused by aging. Thus, there is a need for additional care in this age group of patients.

The effect of antihypertensive therapy can be enhanced by using combinations of drugs. Therefore, if one agent fails to decrease the blood pressure level, it is necessary to use another one.

In some cases, it is necessary to decrease drug doses in order to reduce the number of side effects.

Therapeutic lifestyle changes should be encouraged (limiting sodium intake, increasing physical activity, reducing weight and maintaining ideal body weight, moderate alcohol consumption). Pharmacological treatment of hypertension reduces cardiovascular risks.

The drug therapy should be more cautious, and associated diseases should be taken into account.

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