

# Prevention of Arterial Hypertension in Primary Health Care

Nazira A. Narmukhamedova<sup>1</sup>, Nigora B. Nuritdinova<sup>2</sup>, Munira S. Mahmudova<sup>3</sup>, Surayyo M. Shukurdjanova<sup>4</sup>

<sup>1</sup>Doctor of Medical Sciences, Associate Professor of the Department of Public Health and Health Management of the Center for the Development of Professional Qualifications of Medical Workers, Uzbekistan.

<sup>2</sup>Associate Professor of the Department Internal Medicine №1, Tashkent Medical Academy, Uzbekistan.

<sup>3</sup>Senior Lecturer of the Department Internal Medicine №1, Tashkent Medical Academy.

<sup>4</sup>Associate Professor of the Department Internal Medicine №1, Tashkent Medical Academy.

DOI: 10.47750/pnr.2022.13.S08.373

## Abstract

Arterial hypertension is an urgent problem that has been and remains a socially significant disease and the most important risk factor for cardiovascular complications. The fight against hypertension is a necessary task. This helps to reduce mortality. This requires the identification of all reversible risk factors and the fight against them. The first place among the risk factors for arterial hypertension is assigned to obesity and overweight. Also, hereditary burden is an important risk factor. The article considers a study to identify individuals with elevated blood pressure levels and risk factors for arterial hypertension. Risk factors for hypertension were identified in 57,8% of the surveyed population, and among women they were noted 1,9 times more often than among men. It was found that among individuals with certain risk factors, arterial hypertension may develop more often than in the absence of these factors. Obesity and overweight constitute the highest relative risk, increasing the risk of developing the disease by 10 and 8 times, respectively. The prevalence of hypertension among people with a BMI of 26-35 is 4,4-5 times higher than with a BMI of less than 25. Confounded heredity increases the risk of hypertension by 2,2 times, smoking and eating salty foods - by 2 times.

**Keywords:** Arterial Hypertension, Risk Factors, Smoking, Obesity, Relative Risk.

## INTRODUCTION

In recent years, the prevalence of non-communicable diseases has increased significantly, which experts consider as an impending epidemic; a significant proportion in the structure of these diseases are cardiovascular diseases, and among them - arterial hypertension (AH). The basis for the prevention of these diseases is the identification of the most significant risk factors, their prevention and control. Monitoring major risk factors can be a tool to prevent disease progression. So, about 75% of cases of cardiovascular diseases are associated with smoking, poor diet and lack of physical activity, which leads to metabolic disorders, overweight and obesity, and as a result, an increase in blood pressure.

AH is one of the main risk factors for cardiovascular complications that cause high mortality. Thus, in patients with AH, the total mortality is 2–5 times higher, and mortality from cardiovascular diseases (CVD) is 2–3 times higher than in people without AH [11, 36, 37, 40, 50]. Conducted numerous studies on the diagnosis and treatment of hypertension allowed the WHO expert committee to develop recommendations on the tactics of managing patients with hypertension. Large-scale studies have proven an association between an increase in blood pressure and the risk of cardiovascular complications (CVC), such as stroke, myocardial infarction and heart failure [9, 10, 33, 39, 46, 15]. When analyzing the causes of CVD, it was proved that risk factors play an important role in the development of an unfavorable prognosis of the disease [1, 9, 16, 41, 45]. “A risk factor is a sign or effect that increases the likelihood of a disease or other specific outcome” [1, 20, 24, 34]. The main risk factors for arterial hypertension, which also affect the course and outcome of the disease, include the following: obesity, physical inactivity, diabetes mellitus, hypercholesterolemia, etc. [21, 22, 23, 25, 38]. According to the recommendations of WHO experts on the study of hypertension, the following risk factors are taken into account to assess the risk of cardiovascular complications:

Heredity - the presence of cardiovascular diseases in parents and blood relatives of a patient with arterial hypertension;

Age over 55 years for men and 65 years for women;

Overweight and obesity;

Increase in cholesterol level more than 6.5 mmol / l;

Limited physical activity (hypodynamia);  
 Uric acid level;  
 Smoking;  
 Psycho-emotional overstrain with inadequate response to stressful situations (WHO expert reports) [2, 7, 8,42, 43].

## THE MAIN FINDINGS AND RESULTS

According to population studies, individuals with risk factors for cardiovascular disease are more common than without them [5, 6, 28, 29, 36]. Once elevated blood pressure is detected, it is essential to conduct an assessment of risk factors to select the correct method of treatment. There are risk factors that cannot be influenced to reduce their impact. These are non-modifiable risk factors. These include: age, gender, heredity [1, 46, 47, 48]. Modifiable risk factors for hypertension represent a large group of factors, most of which are associated with the conditions and lifestyle of patients, and their consideration is important when forming a risk group.

Among the modifiable risk factors for hypertension include: excessive salt intake, smoking, alcohol abuse, increased body weight due to both physical inactivity and poor diet, some biochemical parameters.

To determine the effect of increased salt intake on the rise in blood pressure, various studies have been carried out: epidemiological, migratory, genetic. An increase in the level of blood pressure with an increase in salt intake and a decrease in the consumption of foods containing potassium has been statistically proven [3, 4, 12, 19, 27, 35]. The course of hypertension in smoking patients is characterized by the rapid development of cardiovascular complications. Perhaps this is due to the influence of the sympathetic nervous system. Severe forms of hypertension (resistant hypertension, malignant hypertension) are more often observed in smoking patients with arterial hypertension. Smoking affects the increase in blood pressure, potentiates it and increases the risk of developing cardiovascular complications. The risk of death in smoking patients with arterial hypertension increases several times compared to that in non-smoking patients.

There is a significant relationship between overweight and increased blood pressure. Obesity and arterial hypertension are often associated conditions [9, 13, 14, 17]. In overweight patients with arterial hypertension, an increase in the number of cardiovascular complications is directly proportional to body weight and age. With an increase in the patient's body weight, the number of cardiovascular complications increases several times [16, 19, 26].

Thus, an important task of improving the quality of life and increasing its duration remains the early detection and treatment of individuals with risk factors for hypertension.

The aim of the study was to identify individuals with elevated blood pressure levels and risk factors for arterial hypertension. To study the prevalence of risk factors in rural areas, a pilot Syrdarya region was selected. Design - research method - screening for elevated blood pressure with subsequent assessment of risk factors in individuals with identified elevated blood pressure. Characteristics of the sample: persons aged 20 years and older.

Inclusion factors: age, proximity.

Exclusion factors: persons under 30 years of age.

The significance of risk factors for hypertension was assessed based on the calculation of risk indicators using four-field tables [30, 49] (Table 2.1).

Table 2.1: The influence of risk factors on the occurrence of arterial hypertension

Risk factor	With AG	Without AG	Total
Yes	A	B	a+b
No	C	D	c+d
	a+c	b+c	a+b+c+d

The risk of developing arterial hypertension in the presence of a risk factor (absolute risk - AR 1) =  $a / (a + b)$

The risk of developing arterial hypertension in the absence of a risk factor (AP 2) =  $c / (c + d)$ .

Absolute difference risks - ARD (absolute risk difference, ARD)

$$ARD = a / (a + b) - c / (c + d)$$

The relative risk (RR) of developing the disease (relative risk, RR) is the ratio of the incidence in the group exposed to the risk factor to the incidence in the group without exposure to the risk factor:

$$\hat{ID} (RR) = \frac{\hat{AD}_1}{\hat{AD}_2}$$

Relative risk reduction - RRR (risk difference, or relative risk reduction):

$$\tilde{NID} = 1 - \hat{ID}$$

The chances of developing the disease in the presence of a risk factor (RF) = a / b

Chances of developing the disease in the absence of a risk factor (RF) = c / d

Odds ratio - OR (morbidity development in the presence of risk factors to a chance in its absence; oddis ratio, OR):

$$OR = (a / b) / (c / d)$$

This table was used to calculate the risk of arterial hypertension with the total exposure to risk factors and separately, the influence of each studied risk factor (heredity, smoking, overweight and obesity, excessive salt intake) on the risk of hypertension.

The study of risk factors for arterial hypertension with the measurement of blood pressure was carried out among 1685 families, with a total of 8132 people. Information was collected from 6644 people. At the age of 20 years and older. Analysis of the results showed that most often people aged 20 to 50 participated in the screening - 4275 (64.3%) people: the largest number were people aged 20-29 years and 40-49 years. Residents over 50 years old turned out to be 2 times less - 2369 (35.7%) people (Fig. 3.1).

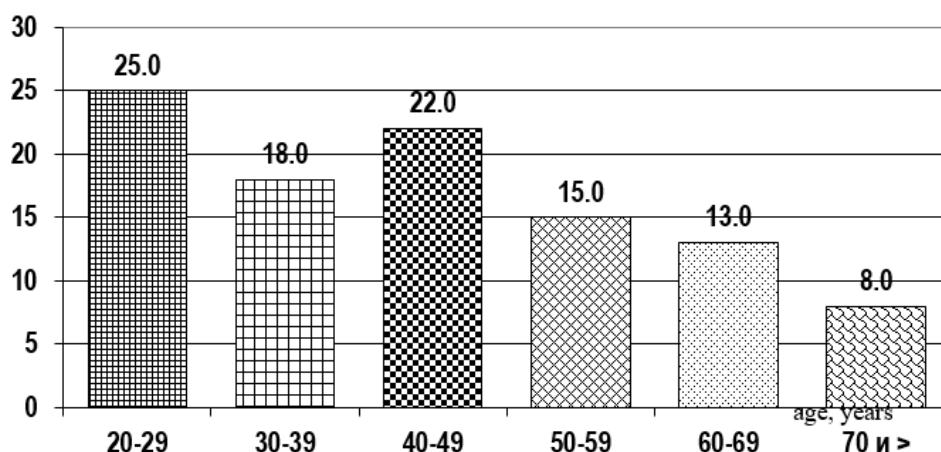
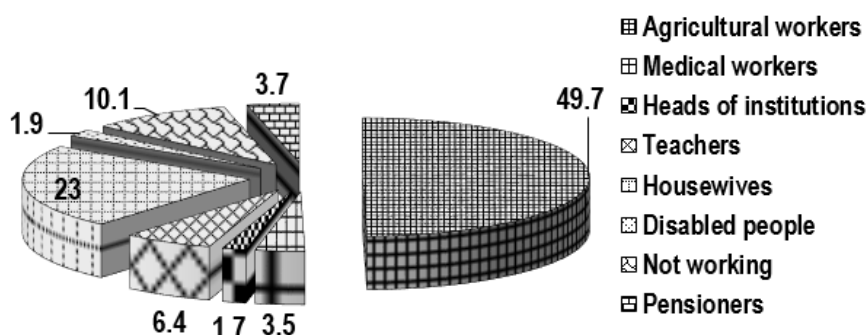


Fig. 3.1. Distribution of respondents by age

Evaluation of population employment showed that among the men who participated in the screening, people working in agriculture prevailed - 3304 people (49.7%), and among women the majority were housewives - 1529 people (23.0%). 671 (10.1%) people were temporarily unemployed, mostly young people (Picture. 3.2.). There were 247 (3.7%) pensioners among the respondents, and 127 (1.9%) people with disabilities due to illness. There were 232 (3.5%) medical workers, 419 (6.3%) teachers.



Picture. 3.2. Distribution of persons by occupation

It turned out that about 60% of the rural population works, among the unemployed, the bulk are women housewives, to a lesser extent - temporarily unemployed, pensioners and people with disabilities due to illness.

The respondents studied the presence of risk factors, increased blood pressure. It was found that 3840 (57.8%) people had certain risk factors for arterial hypertension, among them 1327 (34.6%) men and 2513 (65.4%) women (Picture. 3.3).

Most often, hereditary predisposition was detected (parents or blood relatives had arterial hypertension) - 1280 people (19.3%). The next risk factor that requires the attention of doctors is smoking: out of 3840 people, 744 (11.2%) admitted that they smoke. Low physical activity was noted in 921 (13.9%) people; mostly, they were women and pensioners. The next risk factor identified among the rural population was excessive salt intake: 580 (8.7%) people preferred salty foods.

When measuring blood pressure in respondents, it turned out that an increase in blood pressure above 140/90 was registered in 976 (14.7%) people, of which 531 (54.4%) patients were on dispensary records in RMC (Rural medical center) for arterial hypertension, and in 463 (45.6%) people increased blood pressure was detected for the first time.

All individuals with risk factors in the RMC were measured for height, weight, and body mass index (Table 3.1).

Table 3.1: Distribution of persons with risk factors by BMI, abs (%)

Body mass index	Total		With arterial hypertension		Without arterial hypertension		R
	abs	%	abs	%	abs	%	
up to 25	3236	84.3	528	16.3 ± 0.6	2708	83.7 ± 0.6	<0.001
25-30	497	12.9	361	72.6 ± 2.0	136	27.4 ± 2.0	<0, 0 01
31-35	107	2.8	87	81.3 ± 3.8	twenty	18.7 ± 3.8	<0, 0 01
Total	3840	100	976	25.4 ± 0.7	2864	74.6 ± 0.7	<0, 0 01

In general, among the respondents with risk factors for hypertension, there were almost 3 times more people without high blood pressure than with high blood pressure - respectively 25.4 and 74.6% (P <0.01), however, when taking into account the BMI value, it is clearly seen its significance as a risk factor for hypertension. Calculation of the body mass index showed that in persons with overweight in 72.6, and with obesity - in 81.3% of cases, AH occurred, while among persons without AH, excess body weight and obesity occurred in 27.4 and 18, 7% respectively (P <0.01). Most people with elevated blood pressure had 2-4 risk factors and a concomitant metabolic disorder. Analysis of blood pressure figures showed that 345 out of 976 people (35.3%) people had systolic blood pressure in the range of 141-150, 275 people (28.2%) - 151-160, 156 - (15.9%) - 161-170, 109 - (11.2%) - 171- 180 mmHg. 91 (9.3%) of the examined had systolic blood pressure over 180 mmHg (Picture. 3.4).

Most of the people with high blood pressure - 707 (72.4%) people had diastolic blood pressure up to 100 mmHg., 223 (22.8%) - within 101-110, and 46 (4.8%) patients - more than 110 mmHg. (Picture. 3.5).

(Picture. 3.5).

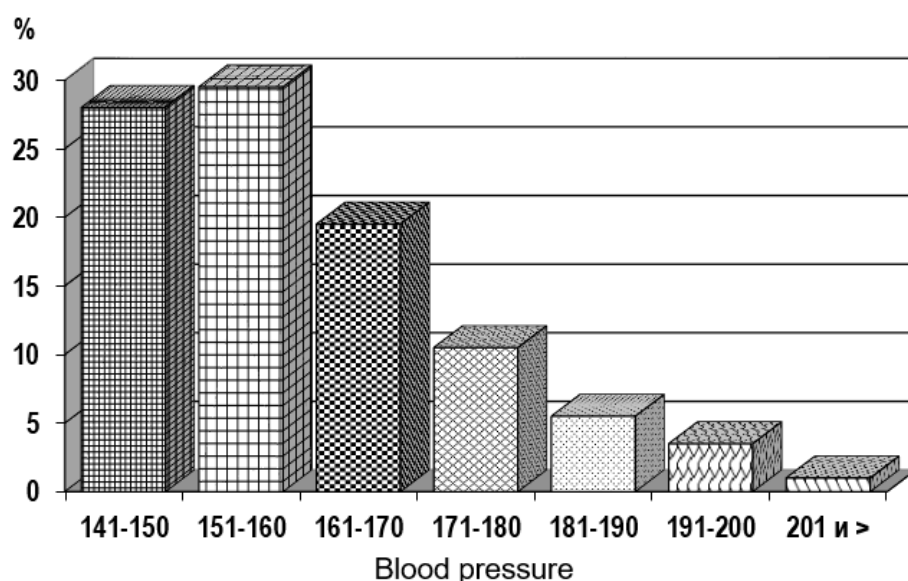


Fig: 3.4. Distribution of the examined depending on the size systolic blood pressure, %

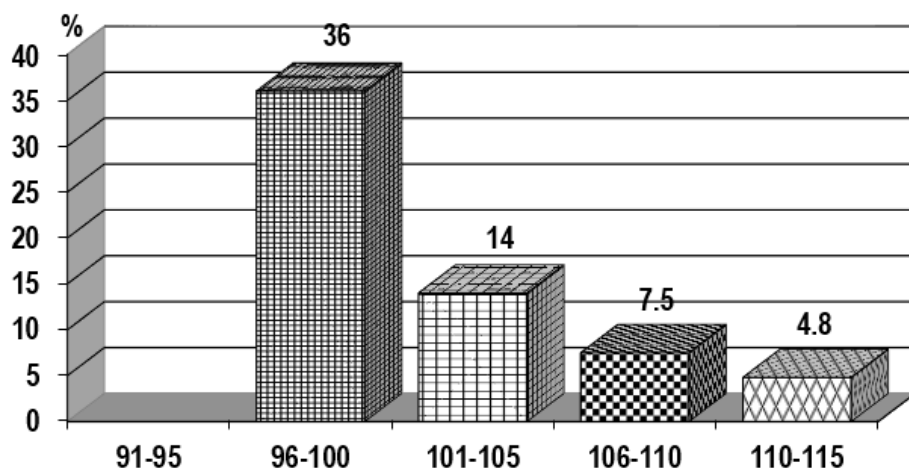


Fig: 3.5. Distribution of persons with elevated blood pressure by size diastolic blood pressure, %

An analysis of the results obtained by risk factors made it possible to compile a four-field table and identify a correlation between risk factors and the likelihood of arterial hypertension (Table 3.2).

Table 3.2: The influence of risk factors on the occurrence of arterial hypertension, human

Risk factors	With AG, abs	Without AG, abs	Total
Yes	912(a)	2928 (b)	3840
No	64 (c)	2740 (d)	2804
	976	5668	6644

We found that out of 976 individuals with elevated BP, 912 had one or more risk factors. 64 persons of this group had no risk factors. There were 2928 persons with risk factors without increased blood pressure. Persons with a normal level of blood pressure and without risk factors - 2740. The total number of persons with risk factors was 3840 people. The risk of factors affecting the occurrence of arterial hypertension was 0.238, the risk of hypertension in the absence of risk factors was 0.023;

The risk difference (RR) or the risk of arterial hypertension in individuals with risk factors is 21% greater than in individuals without risk factors. The relative risk (RR) was 10.4. This means that the risk of developing hypertension in people with risk factors is 10.4 times higher than in people without risk factors. The frequency of new cases of arterial hypertension in the studied population was 0.14.

An analysis of the degree of significance for the occurrence of hypertension of individual factors was also carried out.

Of the 976 patients with arterial hypertension, 337 people had a burdened heredity, of which 639 had no heredity. Individuals with normal blood levels pressure and with burdened heredity amounted to 943, and with not burdened heredity - 4725 people (Table 3.3).

Table 3.3: Influence of heredity on the risk of arterial hypertension, people

Heredity	With AG, abs	Without AG, abs	Total
burdened	337 (a)	943(b)	1280
not burdened	639 (c)	4725 (d)	5364
	976	5668	6644

The risk of the influence of heredity on the occurrence of arterial hypertension - the absolute risk - was 0.263, the risk of hypertension in the absence of this risk factor was 0.119. The difference in risks or the risk of arterial hypertension in persons with a burdened heredity is 14% greater than in persons with an uncomplicated heredity. The relative risk was 2.2, i.e. arterial hypertension is 2.2 times more likely to develop in people with aggravated heredity.

By the same method, we calculated the risk of arterial hypertension in smokers (Table 3.4).

Table 3.4: The effect of smoking on the risk of arterial hypertension

Patients	With AG, abs	Without AG, abs	Total
smokers	186(a)	558 (b)	744
Non-smokers	790 (c)	5110 (d)	5900
	976	5668	6644

It turned out that the risk of the impact of smoking on the occurrence of arterial hypertension was 0.25, the risk of hypertension in the absence of this risk factor was 0.13. Smokers are 12% more likely to develop hypertension than non-smokers. The relative risk was 1.92, i.e. The risk of arterial hypertension in smokers is almost 2 times greater than in non-smokers.

The study of the effect of salty food on the development of arterial hypertension (Table 3.5) showed that the risk of hypertension with increased salt intake was 0.25, the risk of hypertension with normal salt intake was 0.13. The risk of arterial hypertension in individuals with excessive salt intake is 12% higher.

Table 3.5: The effect of salt on the risk of arterial hypertension

Salt intake	With AG	Without AG	Total
Excessive	145(a)	435 (b)	580
Normal	831 (c)	5233 (d)	6064
	976	5668	6644

The relative risk was 1.92, i.e. The risk of arterial hypertension in people with excessive salt intake is 2 times greater than in people who do not abuse it.

The risk of excess weight affecting the occurrence of arterial hypertension was 0.726, the risk of hypertension in persons with normal weight was 0.087.

This means that the risk of arterial hypertension in overweight persons is 63.9% higher. The relative risk was 8.3, i.e. The risk of arterial hypertension in overweight people is 8.3 times higher than in people with normal body weight.

Table 3.6: Effect of excess weight on the risk of arterial hypertension

Body mass	With AG, abs	Without AG, abs	Total
Excess	361(a)	136 (b)	497
Normal	528 (c)	5512 (d)	6040
	889	5648	6537

The calculation of the absolute and relative risks for obesity showed (Table 3.7) that the risk of arterial hypertension in obesity and normal body weight was 0.81 and 0.08, respectively.

Table 3.7: Effect of obesity on the risk of arterial hypertension, people

Body mass	With AG, abs	Without AG, abs	Total
Obesity	87(a)	20 (b)	107
Normal mass	528 (c)	5512 (d)	6040
	615	5532	6147

Thus, among individuals with certain risk factors, arterial hypertension may develop more often than in the absence of these factors. Obesity and overweight constitute the highest relative risk, increasing the risk of developing the disease by 10 and 8 times, respectively. Burdened heredity increases the risk of hypertension by 2.2 times, smoking and eating salty foods - by 2 times.

## CONCLUSION

Risk factors for hypertension were identified in 57.8% of the surveyed population, and among women they were noted 1.9 times more often than among men.

Of the total number of rural residents over the age of 20 who participated in the study, elevated blood pressure was detected in 14.7% of cases, while the prevalence of blood pressure among people with a BMI of 26-35 is 4.4-5 times higher than with a BMI of less than 25.

Of the total number of people with elevated blood pressure, only 54.4% of people are registered with SVPs, which indicates insufficient detection of such people, especially in the early stages of hypertension.

The relative risk of developing hypertension in the presence of risk factors is generally 10.4 times higher than in their absence; the most important risk factors for hypertension are obesity (RR - 10), overweight (RR - 8.3), heredity (RR - 2.2), smoking (RR - 1.92), increased salt intake (RR - 1.92).

## REFERENCES

- 1999 World Health Organization - International Society of Hypertension Guidelines for the Management of Hypertension // Guidelines Subcommittee. Journal of hypertension. - 1999. - Vol. 17, No. 2, P. 151-183.
- Alderman M., Cohen H., Roque R., Madhavan S. Effect of long-acting and short-acting calcium antagonists on cardiovascular outcomes in hypertensive patients // Lancet. - 1997. - Vol. 349. - P. 594-598.
- Beever G., Lip GYH., O'Brien E. ABC of hypertension: blood pressure measurement // Part I. Br. Med. J. - 2001. - Vol. 322. - P. 981-985.
- Beever G., Lip GYH., O'Brien E. ABC of hypertension: The pathophysiology of hypertension // Br. Med. J. - 2001. - Vol. 322. - P. 912-916.
- British Hypertension Society Guidelines. Guidelines for the management of hypertension: report of the fourth working party of the British Hypertension Society. - 2004. - P. 45.
- British National Formulary. British Medical Association, Royal Pharmaceutical // Society of Great Britain. - March, 1999. - P. 73.
- Brown MJ, Cruickshank JK, Dominiczak AF, Mac Gregor GA, Poulter NR et al. Better blood pressure control: how to combine drugs // Journal of Human hypertension. - 2003. - No. 17. - P. 81-86.
- Colhoun H., Dong Wei., Poulter N. Blood pressure screening, management and control in England; results from the health survey for England 1994 // J. Hypertension, 1998. - Vol. 16, no. 6. - R. \_ 747-752.
- Edwards PR, Lunt DW, Fehrsen GS, Lombard CJ, Steyn K. Improving cost-effectiveness of hypertension management at a community health center // SAfr. Med. J. - 1998. - Vol. 88, no. 5. - R. \_ 549-554.
- Griebenow R., Pittrow DB, Weidinger G., Mueller E., Mutschler E., Welzel D. Low-dose reserpine/thiazide combination in first-line treatment of hypertension: efficacy and safety compared to an ACE inhibitor // Blood. pressure. - 1997. - No. 5. - P. 299-306.
- Heart Protection Study Group. MRC/BHF Heart Protection Study of cholesterol lowering with simvastatin in 20,536 high-risk individuals: a randomized placebo-controlled trial // Lancet. - 2002. - Vol. 360. - P. 7-22.
- Jaffiol C. Milk and dairy products in the prevention and therapy of obesity, type 2 diabetes and metabolic syndrome // Bull. Acad. Natl. Med. - 2008. - Vol. 192, no. 4. - R. \_ 749-758.
- Jick H., Derby L., Gurewich V., Vasilakis C. The risk of myocardial infarction associated with antihypertensive drug treatment in persons with uncomplicated essential hypertension // Pharmacotherapy. - 1996. - Vol. 16. - R. 321-326.
- Kannel W., McGee D., Diabetes and cardiovascular risk factors: the Framingham Study // Circulation. - 1979. - Vol. 59. - R.8-13.
- Karastergiou K., Kaski J. C. Medical management of the diabetic patient with coronary artery disease // Curr Pharm Des. - 2008. - Vol. 14, No. 25. - R. 2527-25 36.
- Kolasa KM Dietary approaches to stop hypertension (DASH) in clinical practice: a primary care experience // Clin. cardiol. - 1999. - Vol. 22. - R. 16-22.
- Kostis JB, Berge KG, Davis BR, Hawkins CM, Probstfield J. Effect of atenolol and reserpine on selected events in the systolic hypertension in the elderly program (SHEP) // American Journal of Hypertension. - 1995. - Vol. 8, No. 12. - P. 1147-1153.
- Midgley JP, Matthew AG, Greenwood CMT., Logan AG Effect of reduced dietary sodium on blood pressure. A meta-analysis of randomized controlled trials // JAMA. - 1996. - Vol. 275. - P. 1590-1597.
- Mulrow CD Evidence Based Hypertension // Br. Med. J. Books. - 2001. ISBN 0727914383.
- Nielsen A.A., Christensen C., Brandslund I., Eriksen E.W., Schmitz A. Antihypertensive treatment preceding cerebrovascular diseases is insufficient according to recommendations // Ugeskr Laeger. - 2008. - Vol. 170, No. 41. - R. 3246-32 50.
- Pahor M., Alderman M., Applegate W. Treatment of Hypertension in Primary care // Lancet. - 2006. - Vol. 728. - P. 451-456.
- Perloff D., Grim C., Flack J., Frohlich ED, Hill M., Mc Donald M., Morgenstern BZ Human blood pressure determination by sphygmomanometry // Circulation. - 1993. - Vol. 88. - P. 2460-2470.
- Puddle I., Beilin L., Vandongen R. Regular alcohol use raised blood pressure in treated hypertensive subjects // Lancet - 1987. - No. 1. - R. \_ 647-651.
- Reddy K., Shan P., Shrivastava U. Coronary heart disease risk factors in an industrial population of North India // Can. J. Cardiology. - 1997. - Vol. 13. - R. 1002-1008.
- Rippe J. The case for medical management of obesity: a call for increased physician involvement // Obesity Res. - 1998. - No. 6. - R. \_ 23-33.
- Roumile CL, Elasy TA, Greevy R. Improving blood pressure control through provider education, provider alerts and patient education. A cluster randomized trial // Ann. Intern. Med. - 2006. - Vol. 145. - P. 165-175.
- Schrier R., Estacio R., Jeffers B. Appropriate Blood Pressure Control in NIDDM (ABCD) Trial // Diabetologia. - 1996. - Vol. 39, no. 12. - R. \_ 1646-1654.
- Steinhagen -Thiessen E., Bramlage P., Löscher C., Hauner H., Schunkert H. Dyslipidemia in primary care: prevalence, recognition, treatment and control: data from the German Metabolic and Cardiovascular Risk Project (GEMCAS) // Cardiovasc Diabetol. - 2008. - No. 7. - R. 31-39.
- Bondar A. I. Arterial hypertension in children and adolescents and the principles of its prevention in the conditions of a city polyclinic: Author's abstract... cand. honey. Sciences. - Kharkov, 1991. - 23 p.
- Gadzhiev H.E., Gadzhiev A.N. On the early diagnosis of GB // Therapeutic archive - 1997. - No. 4. - P. 10-12.
- Gorbachenkov A.A., Pozdnyakov Yu. M., Tsvetkov V.V. Arterial hypertension. - M., 1999. - 50 p.
- Kanushko A.V., Gidzinskaya I.N. Changes in the function of the left ventricle in elderly patients with hypertension // Ter. Archive. - 1999. - No. 1. - S. 68-72.
- Makolkin V.I., Podzolkov V.I., Gilyarov M. Yu. Possibilities of 24-hour blood pressure monitoring in the differential diagnosis of neurocirculatory dystonia and hypertension // Cardiology. - 1997. - No. 6. - S. 24-28.

- Martynov A.I., Ostroumova O.D., Rolik N.L. AH in elderly and senile patients: etiology, clinical diagnosis, treatment // *Clinical Medicine*. - 1997. - No. 12. - S. 8-14.
- Nesterov Yu. I., Goldberg G.A., Kozubovskaya R.R., Orlova L.A., Pomytkina T.E., Strazhnikova L.P., Skudarnova T. V. Comparative characteristics of the quality of dispensary observation of patients with hypertension // *Clinical medicine*. - 1999. - No. 6. - S. 23-25.
- Oganov R. G., Galkin V. A., Maslennikova G. Ya. Arterial hypertension is a polyclinic problem // *Ter. archive*. - 2006. - No. 1. - P. 6-9.
- Oganov R. G., Pogosova G. V., Koltunov I. E., Belova I. E., Vygodin V. A., Spivak E. RELIEF – Regular treatment and prevention is the key to improving the situation with cardiovascular diseases in Russia: results of a Russian multicenter study // *Cardiology*. - 2007. - No. 11. - S. 30-39.
- Oshchepkova E. V. About the federal target program "Prevention and treatment of arterial hypertension in the Russian Federation" // *Prevention of diseases and health promotion*. - 2002. - Volume 5, No. 1. - C. 3-6.
- Panchenko E. P. The mechanism of development of acute coronary syndrome // *Russian Medical Journal*. - 2000. - Volume 8, No. 7. - S. 358-360.
- Perova N.V. New European recommendations for the prevention of cardiovascular diseases caused by atherosclerosis // *Cardiology*. - 2004. - No. 1. - S. 76-82.
- Petrov R. V., Ziganshina L. E. Medicines // *Handbook of a practitioner*. - M., GEOTAR-MED, Evidence-based medicine, 2003.
- Reznichenko L. I. Epidemiology and secondary prevention of arterial hypertension in workers of industrial enterprises of Donbass: Abstract of the thesis. ... cand. honey. Sciences. - Donetsk, 1988. - 21 p.
- Recommendations for the diagnosis and treatment of arterial hypertension. VNOK 2009 // *Arterial hypertension, 2009*. - 28 p.
- Republican information - analytical center. State statistical reporting on the number of diseases registered in patients living in the service area of a medical institution for 2003. - Tashkent, 2004.
- Russia. Awareness, treatment, control // *Prof. zab. and Ukrainian health*. - 2001. - No. 2. - P. 3-7.
- Saperov V. N., Makarova N. V., Chepurnaya O. P., Madyanov I. V., Markov D. S. Primary arterial hypertension: prevalence, diagnosis, classification, treatment: Method. letter for general practitioners. - M., - 2001. - 32 p.
- Simonenko V. B., Arefiev E. Yu. The use of non-invasive blood pressure monitoring in the diagnosis and treatment of arterial hypertension // *Clinical Medicine*. - 1998. - No. 5. - S. 44-47.
- Usmanov R. I., Zueva E. B. Cardiology - diagnostic and treatment algorithms // *Handbook, 2007*. - P. 198.
- Khodzhaev A.I., Salimova N.R., Shakirov M.R., Khodzhaev A.A., Makhkamova N.U. Combined antihypertensive and neurotropic therapy for hypertension with cerebrovascular complications // *Guidelines*. - T., 2008. - S. 20.
- Chazova I.E. Combination therapy for hypertension // *Consilium medicum*. - 2001. - No. 2. - S. 22-26.