

# Detectability of Risk Factors for Disorders of Carbohydrate Metabolism in Patients with Arterial Hypertension

Juraeva Kh.I

Bukhara State Medical Institute, Bukhara, Uzbekistan

---

**Received:** 2024 29, Jan  
**Accepted:** 2024 24, Feb  
**Published:** 2024 18, March

Copyright © 2024 by author(s)  
and BioScience Academic  
Publishing. This work is licensed  
under the Creative Commons  
Attribution International License



Open Access

(CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>

**Annotation:** Today, in the structure of causes of death in the economically developed countries of the world, more than 55% are accounted for by cardiovascular diseases. Among the main cardiovascular diseases leading to severe diseases of the heart, brain and other organs, the leading place belongs to hypertension. According to the WHO, 12,8% of deaths in the world are due to hypertension

Obesity, overweight and dyslipidemia are the most common among the factors of carbohydrate metabolism disorders among patients with arterial hypertension.

In this regard, among patients with arterial hypertension, it is necessary to expand preventive measures at the medical site aimed at early recognition of pathology, the formation of risk groups and timely treatment.

**Keywords:** dyslipidemia, obesity, impaired glucose tolerance, diabetes mellitus, arterial hypertension.

---

## INTRODUCTION

In modern medical science, great attention is paid to the study of the problem associated with cardiovascular diseases. The relevance of the fight against cardiovascular pathology is dictated by high morbidity, early disability and mortality.

Today, in the structure of causes of death in the economically developed countries of the world, more than 55% are accounted for by cardiovascular diseases. Among the main cardiovascular diseases leading to severe diseases of the heart, brain and other organs, the leading place belongs to hypertension. According to the WHO, 12,8% of deaths in the world are due to hypertension [1,2,5]. The highest prevalence of AH is noted in developing countries. The age structure of the prevalence of GB, according to a number of researchers [4,6] is: over the age of 50 - more than half of the population, over 60 years - 60-80%. Awareness of the presence of AH in them is 37% among men and 59% among women. At the same time, only 21,6% of men and 46,7% of women take antihypertensive drugs, while the effectiveness of antihypertensive therapy is much lower – 5,7% and 17,5%, respectively.

The occurrence, development and prognosis of AH are largely determined by risk factors - these are various conditions of the exogenous and endogenous environment. These conditions increase the risk of developing hypertension through various metabolic disorders and changes in the activity of internal organs. According to the European guidelines for the treatment of arterial hypertension of the European Society of Hypertension and the European Society of Cardiology (2013), the main risk factors for hypertension are: age, blood pressure, abdominal obesity, family history of early cardiovascular disease, smoking, elevated levels of glucose and lipids in the blood.

Acting simultaneously and for a long time, risk factors contribute to a more severe course of the disease and the development of various types of complications. The elimination of these factors, namely modifiable factors, facilitates its treatment [3,5].

Thus, the health care system faces new responsible and urgent tasks to develop and implement a rational form of organization of cardiac care, in particular, to combat the risk factor with such a common disease as AH [4,7,9].

Leading cardiologists admit that, despite the large number of studies on hypertension, we not only failed to recognize the life support mechanisms of hemodynamic homeostasis, but also failed to reach the finish line and realize the significance of known risk factors [6,8].

**Purpose of the study.** To study the prevalence of risk factors for carbohydrate metabolism among patients with arterial hypertension

**Materials and methods.** Under observation were 68 patients with hypertension aged 20-69 years, including 34 men and 34 women. Examination of patients included

examination, questioning, calculation of body mass index (BMI), indicators of total cholesterol, high density lipoproteins (HDL) and low density lipoproteins (LDL) and carbohydrate metabolism (determination of fasting blood glucose, glucose tolerance test).

Overweight, according to the recommendations of the International Group on Obesity (1997), is fixed at the Quetelet index calculated by the formula: weight (kg)/height (m)<sup>2</sup>,  $\geq 25$ , and IC levels  $\geq 30$  were taken for obesity.

In patients with MS, the presence of 3 out of 5 criteria was revealed: abdominal obesity (waist circumference in men  $\geq 94$  cm, in women -  $\geq 80$  cm), increased TG level  $\geq 1,7$  mmol / L, decreased HDL cholesterol  $<1,03$  mmol/L in men and  $<1,29$  mmol/L in women, arterial hypertension (SBP  $\geq 130$  mm Hg or DBP  $\geq 85$  mm Hg), or antihypertensive therapy for previously diagnosed hypertension; elevated fasting plasma glucose  $\geq 5,6$  mmol/L, or previously diagnosed type 2 diabetes.

Depending on the initial level of glycemia, all patients were divided into three groups. Group I consisted of 30 people with normal glycemia; group II - 22 people with impaired glucose tolerance (IGT); and group III - 16 people with type II diabetes mellitus (DM II).

### Results.

Analysis of the data obtained showed that among patients suffering from arterial hypertension in 22 people (32,35%) a violation of glucose tolerance was detected, in 16 people (23,52%) diabetes mellitus type II, in 30 people (44,11%) normoglycemia (Fig. 1).

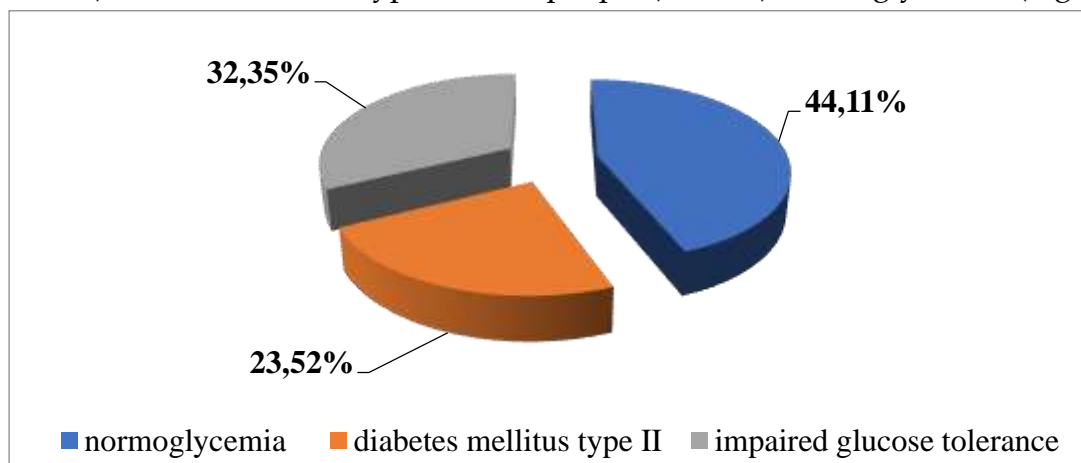


Fig.1. The prevalence of carbohydrate metabolism disorders among patients with arterial hypertension.

The highest incidence of AH is II degree (38,23%), less often - III degree (26,47%) and 35,29% - I degree.

Further, risk factors for carbohydrate metabolism disorders among patients with AH were studied (Fig. 2). Analysis of the data obtained showed that among patients, dyslipidemia was observed in 61,76% of cases, overweight in 35,3%, heredity - 47,17%, abdominal obesity (AO) in 44,1% of patients, stress and overexertion -50 % of cases.

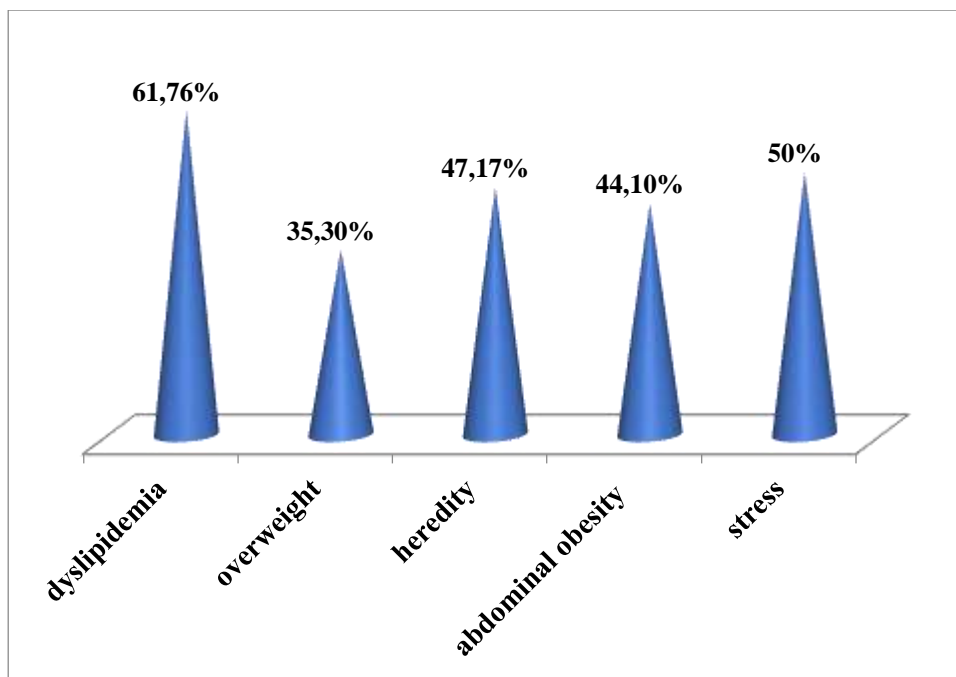


Fig.2. Frequency of risk factors in patients with arterial hypertension

Next, the occurrence of risk factors for impaired carbohydrate metabolism was studied depending on the level of carbohydrate metabolism (Table 1).

**Table 1**

**The prevalence of risk factors depending on the type of carbohydrate metabolism disorder in patients with arterial hypertension**

Risk factors	Normoglycemia		Impaired glucose tolerance		Diabetes mellitus	
	n	%	n	%	n	%
Total cholesterol (n=42)	12	28,57	6	14,29	4	33,14
Obesity (n=30)	6	20	10	33,33	8	26,66
Overweight (n=21)	4	19,05	9	42,85	8	38,1
Triglycerides (n=32)	10	31,25	4	12,5	8	25
LDL (n=34)	8	23,52	4	11,76	2	35,29

Analysis of the data obtained shows that it is: in group I - total cholesterol in 28,57% of patients, obesity - 20%, overweight – 16,66%, triglycerides – 31,25%, LDL – 23,52% of cases; In group II - total cholesterol was observed in 38,09%, obesity – 53,33%, overweight – 42,85%, triglycerides 43,75%, LDL – 41,17% of patients; In group III - total cholesterol was found in 33,33%, obesity – 26,66%, overweight - in 33,33%, triglycerides -

25%, LDL – 35,29% of patients with AH. At the same time, with an increase in the degree of carbohydrate metabolism disorders, an increase in the frequency of occurrence of these risk factors is observed.

**Conclusions.** Thus, obesity, overweight and dyslipidemia are the most common among the factors of carbohydrate metabolism disorders among patients with arterial hypertension.

In this regard, among patients with arterial hypertension, it is necessary to expand preventive measures at the medical site aimed at early recognition of pathology, the formation of risk groups and timely treatment.

## REFERENCE

- Алексеев, Н. А. Оптимизация организационных технологий в многопрофильном медицинском учреждении / Н. А. Алексеев. - Челябинск: Рекпол, 2011 - 240 с.;
- Аметов А.С. Ожирение – эпидемия XXI века / А.С. Аметов // Тер. архив – 2012 – № 10 – С 5 – 7.
- Аналитический отчет об эпидемиологической ситуации по артериальной гипертензии в 2008 г. и ее динамике с 2008 по 2013 гг. по данным трех мониторингов / Т. Н. Тимофеева, А. Д. Деев, С. А. Шальнова и др. - М., 2013 – 12 с;
- Жураева Х.И., Очиллова Д.А., Кудратова Д.Ш. Распространенность и выявляемость сахарного диабета среди женского населения // Биология и интегративная медицина. 2016. №2.  
URL:<https://cyberleninka.ru/article/n/rasprostranennost-i-vyyavlyaemost-saharnogo-diabeta-sredi-zhenskogo-naseleniya> (дата обращения: 29.10.2022).
- Жураева Х.И., Бадридинова Б.К., Кадыров Б.С. Распространенность и состояние лечения артериальной гипертензии по данным анкетирования // Биология и интегративная медицина. 2017. №3.  
URL:<https://cyberleninka.ru/article/n/rasprostranennost-i-sostoyanie-lecheniya-arterialnoy-gipertenzii-po-dannym-anketirovaniya> (дата обращения: 29.10.2022).
- Жўраева, Хафиза, and Достонбек Ашурович Тўхтаев. "Артериал Гипертензия Ва Метаболик Синдром." *BOSHQARUV VA ETIKA QOIDALARI ONLAYN ILMIY JURNALI* 1.6 (2021): 106-111.
- Джураева, Хафиза Искандаровна, et al. "Профилактика основных компонентов метаболического синдрома." (2019).
- Juraeva Kh.I. Frequency of meeting the main components of the metabolic syndrome during disturbance of different phases of glycemc curve// Badridinova B.K.,

Kadirov B.S., Majidova M.A., Yakhyaeva Kh. Sh., Negmatullaeva M.A., Amonov M.K. // *ACADEMICIA: An International Multi-disciplinary Research Journal*. 2019 No. 1. - P. 80 - 85.

Zhuraeva Kh.I., Badridinova B.K The relationship of hypertension with the disturbance of glucose tolerance// *ACADEMICIA: An International Multidisciplinary Research Journal* 2019 No. 10 –p.17-22

Khafiza, Juraeva. "Arterial Hypertension and Comorbidity." *AMALIY VA TIBBIYOT FANLARI ILMIY JURNALI* 2.6 (2023): 96-100.