WEB OF SCIENTIST: INTERNATIONAL SCIENTIFIC RESEARCH JOURNAL
ISSN: 2776-0979, Volume 5, Issue 01, January, 2024

THE COURSE OF TYPE 2 DIABETES MELLITUS COMPLICATED BY ARTERIAL HYPERTENSION

Gofurova Mukhinur Nuralievna
Samarkand State Medical University, Endocrinology Department,
3rd Year Master

Negmatova Gulzoda Shukhratovna
Scientific Supervisor

Abstract
Arterial hypertension (AH) and type 2 diabetes mellitus (DM) are common chronic diseases that often coexist, have common links in pathogenesis and mutually aggravate each other's course. Despite the fact that blood pressure (BP) control, along with glycemia, is the most important stage in the prevention of complications associated with the development of diabetes, patients with hypertension and type 2 diabetes have on average a higher blood pressure level and are relatively more difficult to achieve its target values compared to those who have hypertension without diabetes.

Keywords: AH, DM, BP, mellitus, metod, diagnosis.

INTRODUCTION

It is well known that the combined course of hypertension and type 2 diabetes significantly increases cardiovascular risks and the incidence of adverse cardiovascular events. In clinical practice, these events often develop as complications of hypertensive crises, directly related to insufficient control of blood pressure levels [1].

MATERIALS AND METHODS

It is important to note that while the problem of long-term control of target pressure values in diabetes is quite fully covered in the sources, the literature data on the effect of diabetes on the critical course of hypertension is insufficient and contradictory. Thus, a study by Benenson I. et al. did not reveal direct differences in the frequency and structure of complications of hypertensive crises in patients with and without type 2 diabetes [2]. At the same time, Rashed Al Bannay and Aysha Husain argue that the course of diabetes is accompanied by an increase in the frequency of urgent increases in blood pressure and concomitant acute damage to target organs [3]. Such

data support the need for further study of the problems of hypertensive crises in diabetic patients, a special place among which is occupied by crises complicated by acute cardiovascular disorders.

The purpose of the study was to determine the risk of developing a complicated hypertensive crisis in patients with essential arterial hypertension with concomitant type 2 diabetes mellitus.

The study involved 84 patients with essential hypertension who were urgently hospitalized in the intensive care unit. The patients were divided into 2 groups depending on the presence of concomitant type 2 diabetes: the main group (n=40) was represented by patients with a combined course of hypertension and type 2 diabetes, the comparison group (n=44) consisted of patients with isolated hypertension. The groups were standardized by age and gender. The study did not include patients with insulin-dependent type 2 diabetes, as well as patients with severe concomitant diseases.

RESULTS AND DISCUSSION

The results of the study showed that among patients of the main group with a combined course of hypertension and type 2 diabetes, complicated crises predominated in the structure of hypertensive crises (43%), while in patients with hypertension without diabetes, uncomplicated and complicated crises amounted to 79% and 21%, respectively. Analysis of the obtained data using Fisher's exact test showed that in the presence of concomitant type 2 diabetes, the risk of developing a complicated crisis is significantly higher than in the group of patients with isolated hypertension ($F=0.03539$; $p<0.05$).

The most common condition in patients with type 2 diabetes mellitus is arterial hypertension. Thus, the UKPDS study analyzed which cardiovascular diseases patients who were first diagnosed with diabetes mellitus already had. It turned out that arterial hypertension occurred in almost 65% of patients; quite often, patients had already suffered a myocardial infarction in the past (34%) or had changes on the ECG (33%). Peripheral vascular diseases (macroangiopathy) were recorded in 46% of patients, and stroke in 38% of patients.

Arterial hypertension is observed in approximately 75–80% of patients with type 2 diabetes mellitus and is the cause of death in more than 50% of patients. It is a proven fact that the association of diabetes mellitus and arterial hypertension significantly increases the risk of adverse outcomes in patients [3]. The combination of these diseases is to a certain extent natural. Arterial hypertension and diabetes mellitus are pathogenetically related. Their frequent coexistence is facilitated by the

interaction of common hereditary and acquired factors. Among them, the following are considered the most important: genetic predisposition to high blood pressure and diabetes mellitus; sodium retention in the body, as well as angiopathy and nephropathy, which contribute to increased blood pressure and the development of diabetes; obesity, especially abdominal obesity, which can cause or worsen insulin resistance.

In a cardiology hospital, the following acute target organ lesions were recorded, which determined the complicated course of the crisis: acute coronary syndrome (ACS) and acute left ventricular failure (ALVF). ACS was recorded in 28% of patients from the main group and in 9% of the comparison group. Thus, the risk of developing a hypertensive crisis complicated by myocardial infarction or unstable angina is also significantly higher in those patients in whom hypertension occurs against the background of concomitant type 2 diabetes ($F=0.04415$; $p<0.05$).

At the same time, ALV developed in 15% of cases in the main study group and in 11% in the comparison group, which, when calculating the risk of developing this complication, did not show a statistically significant difference between the groups.

The findings, as well as those reported by Rashed Al Bannay and Aysha Husain, demonstrate that type 2 diabetes contributes to an increased risk of developing complicated hypertensive crises. The differences in the results obtained on the structure of crisis complications are most likely due to the fact that in the works of the above authors, along with ACS and ALV, the incidence of stroke was also recorded.

CONCLUSION

Patients with a combined course of essential arterial hypertension and type 2 diabetes mellitus have a higher risk of developing a complicated hypertensive crisis, mainly due to the higher risk of acute coronary syndrome in this cohort of patients. The data obtained determine the particular importance of adequate blood pressure control in patients with diabetes mellitus, as well as the importance of medical vigilance when it increases.

REFERENCES

1. Gattobigio, Lucia Filippucci, Paolo Verdecchia, Gianpaolo Reboldi, Fabio Angeli, Claudia Borgioni, Roberto, et al. Adverse prognostic significance of new diabetes in treated hypertensive subjects. Hypertension 2014;43:963–9.

2. Benenson I, Waldron FA, Jones Dillon SA, Zinzuwadia SN, Mbadugha N, Vicente N, Aris E, Adeboye AM, Makdisi C. Hypertensive emergencies in diabetic patients

from predominantly African American urban communities. Clin Exp Hypertens. 2019;41(6):531-537. doi: 10.1080/10641963.2018.1516774. Epub 2018 Oct 4. PMID: 30285508.

3. Al Bannay R, Husain A. Hypertensive crisis: comparison between diabetics and non-diabetics. Int J Cardiol. 2012 Jan 26;154(2):198-200. doi: 10.1016/j.ijcard.2011.10.070. Epub 2011 Nov 9. PMID: 22075421.

4. Shestakova M.V. Diabetes mellitus and arterial hypertension. In the book: Guide to arterial hypertension. Edited by Academician E.I. Chazov, professor I.E. Chazovoy. MEDIA MEDICA, Moscow, 2015, 415-433.