WEB OF SCIENTIST: INTERNATIONAL SCIENTIFIC RESEARCH JOURNAL
ISSN: 2776-0979 (Volume 2, Issue 6, June, 2021

DIAGNOSTICS OF CHRONIC HEART INSUFFICIENCY IN PATIENTS WITH METABOLIC SYNDROME BY SODIURETIC PEPTIDE LEVEL

M. S. Bekmuradova
Samarkand State Medical Institute,
Uzbekistan Samarkand.

X. X. Gaffarov
Samarkand State Medical Institute,
Uzbekistan Samarkand.

Announcement

Symptoms and clinical signs of chronic heart failure (CHF) are very difficult to identify and, just as important, correctly interpreted in obese patients and in patients with metabolic syndrome (MS) . In this case, for the verification and differentiation of breathing in CHF or obesity , it is necessary to quantify the level of cerebral natriuretic peptide (BNP) in the blood serum . For the diagnosis of CHF, not only echocardiography with the determination of the ejection fraction (EF) is shown , but also the quantitative determination of the level of BNP in the blood serum .

The components of metabolic syndrome (MS): arterial gipert onium (AG) , abdominal obesity (AO), insulin resistance (IR), type 2 diabetes are major risk factors for the development of chronic heart failure with preserved ejection fraction (EF) . Obesity is one of the most common chronic diseases in the world and is socially significant. For the diagnosis and treatment of chronic heart failure in the early stages of the disease, it is important to timely assess the features of CHF in patients with MS. It is necessary to develop recommendations for the management of this group of patients on the basis of a follow-up program.

Keywords: natriuretic peptide, metabolic syndrome, chronic heart failure, hypertension.

Introduction

In 72 patients with metabolic syndrome, the level of natriuretic peptide (NP) -type B was studied using enzyme-linked immunosorbent assay. Of these, 37 (51.4%) patients who had clear clinical signs of chronic heart failure against the background of metabolic syndrome had higher than normal levels of NP in the blood plasma. 35 (48.6%) patients who did not have clinical and instrumental signs of chronic

heart failure. Insufficiency of NP in blood plasma was lower (200 pg / ml) than normal values. And in 12 (34.3%) patients from this syndrome, there is still the development of chronic heart failure. Meaning the determination of NP in the blood plasma makes it possible to diagnose CHF early.

Objective:

To study the dependence of the development of CHF in patients with metabolic syndrome by the level of brain natriuretic peptide (BNP) and to establish the clinical, pathogenetic and laboratory (by the level of BNP) features of chronic heart failure in patients with MS.

Materials and Research Methods

We examined 72 patients with metabolic syndrome (MS), of which 38 women and 34 men with and without clinical signs of CHF at the age of 32 to 63 years, while 37 (51.4%) patients had obvious clinical and instrumental signs of chronic heart failure on the background of MS and 35 (4-8.6%) patients with MS without clinical and instrumental signs of CHF. Comprehensive examination of patients included collection and analysis of complaints and anamnestic data, clinical examination, general clinical , laboratory and instrumental studies: Doppler echocardiography , chest X-ray. All our patients underwent a quantitative assessment of the concentration of brain natriuretic peptide (ng / ml) in blood plasma by enzyme immunoassay, BMI and waist circumference (WT) and thigh circumference (OB). Abdominal obesity was also diagnosed by determining the OT / OB ratio .

Discussion of the results obtained.

The patients examined by us were divided into two groups. The first group consisted of 37 patients with MS with obvious signs of CHF, such as shortness of breath, fatigue, edema and palpitations. The second group included 35 patients with MS without obvious clinical and instrumental signs of CHF. BNP level , BMI, and waist circumference were measured in all examined . In patients with MS, there is an independent negative correlation with the level of BNP, probably due to an increase in receptor-mediated uptake in adipose tissue. 40% of obese patients have a BNP level lower than the threshold value necessary for the diagnosis of CHF analysis of survey data shows that in the first group (MS with obvious signs of CHF) 36 - five patients (97.3%) level of BNP was above the normal range and amounted to 320 $\pm$ 5.2 pg / ml.

In the second group, there was an increase in BNP concentration in 12 (34.3%) patients who did not have obvious clinical signs of CHF. The BNP level in this group was also higher than normal values - 200 ± 10.5 pg / ml. This indicates that in this group of patients the development of chronic heart failure takes place. In the 23 patients in the second group the level of BNP remained within the normal range, ie .e in these patients did not develop heart failure. It has been shown that a decrease in excess body weight in patients with MS with CHF improves the clinical course of the disease, reduces the risk of complications, and slows down the progression.

Echocardiographic assessment of left ventricular systolic function was performed by calculating the ejection fraction (EF). On an intact heart in the M-mode, the Teichholz method was used according to the following rules: - measurements of the end-diastolic (EDD) and end-systolic (ESR) dimensions of the LV were carried out in the M-mode under image control in the B -mode in the parasternal cross-section along the short axis at the level of the papillary muscles using the anatomical M-mode. Contraction of the interventricular septum and the posterior wall of the left ventricle - up to 40 ms. When calculating the end systolic (ESR) and end diastolic (EDV) volumes of the LV, the formula L was used . Techholtz as the most accurate: V = 7 D 3 / (2.4 + D), where V is the calculated volume in milliliters, D is the corresponding diameter (KDD or KSD) in centimeters. Stroke volume (SV) was calculated as the difference between EDV and CSV in ml. The ejection fraction (EF) was calculated as the ratio of EE to EC: EF (in percent) = (EE / EC) x 100%. In assessing the diastolic function of the left ventricle, the maximum velocities of the peaks of early diastolic filling (VEmax) and atrial filling (VAmax) of the transmitral flow, the ratio of VE and VA , the deceleration time (T D) were taken into account and, if possible, the flow in the pulmonary veins was assessed .

During the study, we identified gender differences in the formation of chronic heart failure in metabolic syndrome. Due to the difference in body size, women had less left ventricular myocardial mass (LV MM) than men. In women, thinner LV walls were detected, the volume of the LV cavity was smaller, even when taking into account the body surface area. At the same time, LV pressure and ejection fraction (EF) were much higher in women than in men, which is associated with a reduced end-systolic volume (ESV) in women. Because of the higher EF, women are more likely to develop heart failure with preserved EF. Patients with normal EF values showed an increase in BNP levels up to 250 pg / ml.

Women with abdominal obesity had more pronounced lipid metabolism disorders, but higher levels of total cholesterol and LDL cholesterol were found in patients with normal BNP levels. Patients in the MS group showed powerful predictors of cardiovascular events. In patients with MS + CHF, an increase in the BNP level was detected significantly more often . At the same time, according to echocardiography , all patients did not show a decrease in the left ventricular ejection fraction. A diastolic dysfunction of the left ventricle was detected significantly more often in patients with chronic heart failure verified.

Conclusion The present determination of the level of brain natriuretic peptide (BNP) is increasingly used in the diagnosis and treatment of heart failure with preserved ejection fraction of the left ventricle . The BNP study is used for: early diagnosis of CHF, assessment of the prognosis of CHF, differential diagnosis of dyspnea and other symptoms, determination of the severity of the disease , and also for monitoring the effectiveness of CHF therapy.

LITERATURE :

1. Aleksandrov OV, Alekhine P . M. , Grigorie in S.P. Metabolic syndrome. Grew up . m units zhurn. 2006.
2. Andrei in D.A., Rykova M.S. Natriyureti cal peptides B-type heart failure . Clinic . medicine . 2004. (6). 4-7.
3. Bekmuradova M. S., Makhmudova Kh. D., Nazarov F. Yu. DIAGNOSTIC SIGNIFICANCE OF BRAIN SODIURETIC PEPTIDE IN DETECTING CHRONIC HEART FAILURE // Scientific progress . - 2021. - T. 2. - No. 1. - S. 810-814.
4. Bozkurt B, Mann D. Use of biomarkers in the management of heart failure. Circulation 2003;
5. Bugrimova M.A., Savina N.M., Vanie-va O.S. Brain natriuretic peptide as a marker and prognosis factor in chronic heart failure // Cardiology. 2006. (l) ..
6. Bekmuradova M.S., Gafforov Kh. Kh., Yarmatov S. T. Significance of the determination of cerebral natriuretic peptide in the process of diagnosing chronic heart failure // Achievements of Science and Education . - 2020. - No. 4 (58).
7. Vizir V.A., Berezin A.E. The relationship between the processes of myocardial remodeling and neurohumoral activation in patients with heart failure // Clinical . medicine. 2001. (9). 21-27.

8. Dzheriev I.S., Volkova N.I. Arterial hypertension and metabolic disorders // Clinical . medicine. 2010. (2). 4-7.
9. Yarmukhamedova SH, Bekmuradova MS development of heart failure in patients with hypertensive disease of indicators natriuretic peptide // Eurasian cardiology journal . - 2019. - No. S1.
10. Eliseev O.M., Natriuretic peptides. Evolution of knowledge // therapeutic archive - 2003
11. Modern echocardiography . Advanced Echocardiography . R. Ya. Abdullaev, Yu.S. Sobol, N.B. Schiller, E. Foster . Kharkiv "Fortuna- P rss" 1998 .
12. Yarmukhamedova S. Kh., Bekmuradova M. S., Nazarov F. Yu. Significance of the level of cerebral natriuretic peptide in the early diagnosis of chronic heart failure in patients with arterial hypertension // Achievement s of Science and Education . - 2020. - No. 4 (58).
13. Yarmukhamedova S. Kh., Bekmuradova M. S., Nazarov F. Yu. DIAGNOSTIC VALUE OF SODIUMURETIC PEPTIDE IN DETECTING PATIENTS WITH ASYMPTOMIC SYSTOLIC OR DIASTOLIC DYSFUNCTION // Advances in science and education . - 2020. - No. 8 (62).