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QUALITY OF LIFE OF PATIENTS WITH CHRONIC HEART FAILURE WITH PRESERVED HEART BLOOD SHOT HUSSITE AND BENDOPNEA SYMPTOM

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Abstract
To study the compartments of fat depots and some cardiometabolic markers in patients with chronic heart failure with preserved ejection fraction (CHF), prediabetes and abdominal obesity. In the studied sample, the values of body weight, glomerular filtration rate and concentration of NT-proBNP in blood plasma were higher in men compared with these indicators in women. The level of NT-proBNP in men with grade 3 obesity turned out to be minimal, only slightly exceeding the diagnostic limit. The highest rates of HFRS were recorded in women with obesity of the 2nd and 3rd degrees, which emphasizes their pro-inflammatory status. Visceral epicardial and pre-abdominal fat compartments did not differ significantly in both sexes.

Keywords: chronic heart failure with preserved ejection fraction, prediabetes, obesity, NT-proBNP, C-reactive protein, epicardial fat, premesenteric fat, subcutaneous fat, men, women.

Introduction

Due to an increase in life expectancy, the increasing spread of obesity, insulin resistance and the use of cytotoxic drugs, multiple effects on the myocardium of other metabolic factors, an increase in the number of cardiovascular diseases (CVD), the problems of chronic heart failure (CHF) as the final stage of the cardiorenometabolic continuum are becoming increasingly important [1, 2]. In recent years, special attention has been paid to the study of CHF with preserved ejection fraction (CHF), which is due to both the widespread prevalence and difficulties in diagnosing and treating this condition [3]. Compared with patients suffering from CHF with a reduced ejection fraction, patients with CHF are more often hospitalized not for decompensation of heart failure, but because of concomitant diseases (obesity, hypertension, type 2 diabetes mellitus) [4]. The data of studies devoted to the study of the humoral and structural-functional characteristics of patients with CHF, prediabetes and abdominal obesity (AO) are limited.

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The purpose of the study

To study the compartments of fat depots and some cardiometabolic markers in patients with CHF, sFV, prediabetes and AO.

Material and methods

On the basis of the NIITPM branch of the ICiG SB RAS, an interventional single—center open randomized controlled trial "Efficacy and safety of prolonged-release metformin in patients with prediabetes, CHF and AO" is being conducted, including 4 consecutive periods: screening, an introductory period (for 4 weeks. prior to randomization, when all patients will take the original prolonged—acting metformin at a dose of 1000-1500 mg/day with an assessment of its tolerability), randomization (the metformin group and the comparison group) and the main period - observation, clinical, laboratory and instrumental studies in patients of the two specified groups against the background of basic therapy of CHF (52 weeks, or 12 months). Currently, the stage of recruitment and initial examination of patients has been completed.

Research materials and methods

In our study, only in 52.5% of patients with symptoms and signs of CHF, prediabetes and AO, the level of NT-proBNP exceeded the diagnostic values for it. Among 58 (47.5%) patients with NT-proBNP levels <125 pg/ml, men prevailed, more than 2/3 of whom were obese, including 4 patients with morbid. In 16 (76.2%) women not included in the study, obesity of the 1st and 2nd degree was registered in equal proportions. It can be assumed that the failure to reach the diagnostic level of NT-proBNP in a number of patients is due to obesity. Released in 2019. The "Practical Guide of the Association of HF of the European Society of Cardiology on the use of NUP concentrations" recommends to reduce the established threshold concentrations to 50% in order to achieve diagnostic accuracy of markers in patients with obesity (without ranking it by degree) [7]. However, in domestic and foreign recommendations on the diagnosis and treatment of CHF, the reference values of the NUP for such patients remain the same. At the same time, current European conciliation documents indicate that in some (up to 20%) patients with invasively proven CHF, especially those accompanied by obesity, the NUP indicators are lower than diagnostic values [9]. In a study by J. Vaishnav et al. [15] 3 groups of patients with CHF participated: the first — without obesity (n=17.7 men), the second — with obesity of the 1st and 2nd degree (n=26.11 men), the third - with morbid obesity (n=46.10 men). In hospitalized patients with CHF, the level of NT-proBNP was inversely proportional to BMI, and it was maximally reduced with grade 3 obesity in both men and women. In our study, in patients with CHF, prediabetes and AO, only men demonstrated the lowest values of NT-proBNP in morbid obesity compared with men with obesity of the 1st or 2nd degree. The maximum values of NT-proBNP in both men and women were observed with obesity of the 2nd degree, and in men with obesity of the 3rd degree they were statistically significantly lower than in the group with obesity of the 1st and 2nd degree. Among women with morbid obesity, the level of NT-proBNP reached values comparable to those of women with grade 1 obesity, but this trend did not reach statistical significance (p=0.235) when compared with patients with grade 2 obesity. Unfortunately, the sex composition of the samples of most studies does not allow us to detail the patterns of the influence of obesity in men and women on the level of NUP, which indicates the need for large-scale studies.

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According to the literature, the level of NUP in women is higher than in men, which is most often associated with the influence of sex hormones. Estrogens have been reported to have a stimulating effect on the formation of NUP, while androgens, on the contrary, inhibit it, although there is currently no description of the exact mechanisms of these interactions [6]. In our study, the level of NT-proBNP in men was higher than in women, which can be explained by the age of the patients included in the study, most of whom were postmenopausal, as well as greater activation of neurohumoral systems in men with CHF, prediabetes and AO. It is also necessary to note the tendency (which did not reach statistical significance, which may be due to a small number of observations) to a higher frequency of CHF III FC (NYHA) in men, which could affect the NT-proBNP indicators. The men we surveyed were more likely to have smoked in the past or are currently smoking. The effect of smoking on the level of NT-proBNP in CHF has not been studied, currently there are only data obtained from samples of patients without CHF demonstrating an independent positive relationship between the level of NT-proBNP ≥125 pg/ml and smoking [18, 19].

Among the men included in the study, two took valsartan in combination with a non—lysine inhibitor, sacubitril, which increases the concentration of cerebral NUP. At the same time, the enzyme neprilysin does not cleave NT-proBNP, the concentration of which we estimated in our work. That is why the inhibition of neprilysin by valsartan + sacubitril had no effect on the concentration of NT-proBNP in plasma [6].

Conclusion

The first stage of the study suggests the absence of a standard humoral response in the form of an increase in NT-proBNP in patients with CHF, prediabetes and AO aged 45-60 years. In almost half (47.5%) of the examined patients of both sexes with symptoms and clinical signs of CHF, as well as with structural heart damage, the level of NT-proBNP was <125 pg/ml. The men included in the study had a higher body weight, calculated GFR values, and NT-proBNP levels in blood plasma than women. At the same time, in men with morbid obesity, the level of NT-proBNP was minimal. The highest level of HCRP was registered in the combined group of women with obesity of the 2nd and 3rd degrees, which emphasizes the pro-inflammatory status of these patients associated with a likely unfavorable cardiovascular prognosis. Evaluation of visceral epicardial and preperitoneal fat compartments did not demonstrate significant differences in both sexes, which is not typical for the female cohort and indicates pronounced metabolic disorders in postmenopausal women. Thus, the structural and humoral pathogenetic prerequisites for the effects of metformin with prolonged release have been determined, taking into account its multiple cardiorenometabolic pleiotropic effects, the description of which in the studied cohort of men and women will be devoted to the next article.

References

1. Tsygankova O.V., Evdokimova N.E., Veretyuk V.V. and others. Insulin resistance and chronic heart failure with preserved ejection fraction. Pathogenetic and therapeutic intersections. Diabetes mellitus. 2022;25(6):535–547.

2. Tsygankova O.V., Khudyakova A.D., Latyntseva L.D., Lozhkina N.G. Cardiovascular continuum: from risk factors to systolic heart failure. Atherosclerosis. 2017;13(4):42–46.

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webofjournals.com/index.php/5

3. Pfeffer M.A., Shah A.M., Borlaug B.A. Heart Failure with Preserved Ejection Fraction: In Perspective. Circ Res. 2019;124(11):1598–1617.
4. Ather S., Chan W., Bozkurt B. et al. Impact of noncardiac comorbidities on morbidity and mortality in a predominantly male population with heart failure and preserved versus reduced ejection fraction. J Am Coll Cardiol. 2012;59(11):998–1005.
5. Ryabikov A.N., Malyutina S.K., Guliyev Z. and others . A method for diagnosing metabolic syndrome by ultrasound lipometry. Patent 2677526. Published on 17.01.2019.
6. Chaulin A.M., Duplyakov D.V. Increase in natriuretic peptides not associated with heart failure. Russian Journal of Cardiology. 2020;25(4S):4140.
7. Mueller C., McDonald K., de Boer RA. et al.; Heart Failure Association of the European Society of Cardiology. Heart Failure Association of the European Society of Cardiology practical guidance on the use of natriuretic peptide concentrations. Eur J Heart Fail. 2019;21(6):715–731.
8. Sugisawa T., Kishimoto I., Makino H. et al. Association of plasma B-type natriuretic peptide levels with obesity in a general urban Japanese population: the Suita study. Endocr J. 2010;57:727–733.
9. McDonagh T.A., Metra M., Adamo M. et al. 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure. Eur Heart J. 2021;42(36):3599–3726.
10. Verbrugge F.H., Omote K., Reddy Y.N.V. et al. Heart failure with preserved ejection fraction in patients with normal natriuretic peptide levels is associated with increased morbidity and mortality. Eur Heart J. 2022;43(20):1941–1951.
11. Chen-Tournoux A., Khan A.M., Baggish AL. et al. Effect of weight loss after weight loss surgery on plasma N-terminal pro-B-type natriuretic peptide levels. Am J Cardiol. 2010;106:1450–1455.
12. Packer M. Questioning the obvious: does dyspnoea really matter in heart failure? Eur Heart J. 2018;39:2822–2824.
13. Singh S., Pandey A., Neeland I.J. Diagnostic and prognostic considerations for use of natriuretic peptides in obese patients with heart failure. Prog Cardiovasc Dis. 2020;63(5):649–655.
14. Semenov A.G., Postnikov A.B., Tamm N.N. et al. Processing of pro-brain natriuretic peptide is suppressed by O-glycosylation in the region close to the cleavage site. Clin Chem. 2009;55(3):489–98.
15. Vaishnav J., Chasler J.E., Lee Y.J. et al. Highest Obesity Category Associated With Largest Decrease in N-Terminal Pro-B-Type Natriuretic Peptide in Patients Hospitalized With Heart Failure With Preserved Ejection Fraction. J Am Heart Assoc. 2020;9(15):e015738.

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