Abstract: P1660

Microcirculation changes in combination therapy in patients with heart failure with preserved ejection fraction.

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Introduction

Nowadays, heart failure (HF) with preserved ejection fraction (EF) (HFpEF) is an increasing public health problem and accounts for almost 50% of the total number of patients with HF.

Considering diversity of factors affecting the development of HFpEF, the main of which are age and arterial hypertension (AH), and the heterogeneity of the pathophysiology, it is necessary to consider the role of the combined treatment of this syndrome to prevent further microcirculation rarefaction.

Aim: To assess the effect of triple combination therapy on vascular reactivity and microcirculation changes in patients with HFpEF.

Methods: The study includes 26 patients (3 males and 23 females), aged from 55 to 81 yrs (mean age 65,1±7,6 yrs), with preliminarily diagnosed HFpEF in previous hospitalizations during 2017 using ESC criteria for diagnosing chronic HF. All patients suffered from AH and class I-III obesity, in some patients had diabetes melitus, the level of NT-proBNP ranged from 192 to 276 pg/ml in the group. The echocardiography showed the EF 61±2,5% and the ratio of early left ventricular diastolic filling and diastolic mitral annulus velocity (E/?`) 14,2±2,0 in the group.

Patients were examined before and 3 months after administration a triple combination of drugs, including perindopril 10 mg, indapamide 2,5 mg and amlodipine 5 mg.

The peripheral hemodynamics and vascular reactivity was estimated using a photoplethysmographic method on a PulseTrace device with determination of vascular stiffness index (SI) and pulse wave reflection index (RI). Oscillometry was performed to evaluate systemic vascular resistance (SVR), specific peripheral resistance (SPR), reflecting the condition of the arterioles, and brachial artery compliance.

Results: The data obtained during therapy shows a significant decrease in SVR from 2667 ± 356 dyn*cm⁻⁵ to 2195 ± 247 dyn*cm⁻⁵ (p <0,001) and in SPR from 33,2 ± 5,05 dyn/sec/cm⁻⁵ to 27,9 ± 3,03 dyn/sec/cm⁻⁵ (p <0,001).

In assessing the stiffness of the muscular arteries, there was a decrease in RI from 71,6 ± 5,05% to 58 ± 11,1% (p <0,001), and a significant decrease in SI from 11 ± 0,46 m/sec to 7,6 ± 1,5 m/sec (p <0,001), indicating a decrease in the vascular tone of the major branches of the aorta.

At the same time, the brachial artery compliance increased from 1,025 ± 0,25*10⁶/mmHg to 1,243 ± 0,35*10⁶/mmHg (p <0,001).
Conclusions: Preliminary data suggest a positive effect of triple combination therapy on the vascular system, with a predominant influence on its microcirculatory section.