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## **The mechanisms of cardiac remodeling in hypertension patients with obesity.**

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### **Background**

The combination of essential hypertension and obesity significantly increases the risk of cardiovascular complications and is considered prognostically unfavourable.

The Aim of the study was to investigate the characteristics and mechanisms of cardiac remodeling in patients with essential hypertension and obesity.

### **Patients and methods**

The study included 64 patients with essential hypertension stage II grade 2 with obesity grade 2 at the age of 45-57 years old, 13 of them are males. The following procedures were made: cardiac ultrasound, estimation of immunoreactive insulin in blood as well as estimation of C-reactive protein and interleukin 6. The ejection fraction of the left ventricular in all the patients was greater than 45% and there was also a violation of its relaxation. 91% of the patients were diagnosed with concentric left ventricular hypertrophy. Relative wall thickness, myocardial mass index and the integral index of left ventricular diastolic function E /e correlated with blood pressure levels, immunoreactive insulin, C-reactive protein and interleukin 6.

## **Conclusions**

Patients with essential hypertension and obesity are characterised by the saved systolic function, hypertrophic type of diastolic dysfunction and the prevalence of concentric left ventricular hypertrophy, and at the same time hemodynamic factors, hyperinsulinemia and factors of systemic inflammatory response are involved in the mechanisms of cardiac remodeling.

**Key words:** hypertension, obesity, diastolic dysfunction, hyperinsulinemia, inflammation.