Abstract: **P372**

Influence of low triiodothyronine syndrome on the course of heart failure in patients with a history of myocardial infarction.

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Background: Progression of heart failure (HF) leads to hormonal changes, including low triiodothyronine syndrome (LT3S). The LT3S that accompanies HF can lead to a number of disorders, including the reduction of systolic heart function, the development of arrhythmias, increased vasoconstriction.

The aim: to study the influence of LT3S on the course of HF in patients with a history of myocardial infarction (MI).

Materials and methods: 354 patients with HF and history of MI were included in the 2-yeared follow-up study. LT3S was diagnosed at 89 (25.1%) patients. The levels of thyroid-stimulating hormone (TSH), free T3f and T4f, and reversible T3 were determined by using ELISA "TSH", "T4f" and "T3f" by Hema, Ukraine. The echocardioscopy was performed. The relative risk (RR) of re-hospitalization and mortality was calculated with a 95% confidence interval (CI). All statistical tests were 2-tailed and $p<0,05$ was considered statistically significant and performed in IBM SPSS Statistics, 20.0 and MedCalc, 18.9.1

Results: In the group of patients with HF and LT3S II functional class (FC) by NYHA was in 20.2% of patients, compared to 46.8% in the group without LT3S, III FC by NYHA was in 60.7% of patients, versus 46.4% in group with HF and LT3S and IV FC was in 19.1% of patients, versus 6.8% in the group without LT3S ($x^2 = 24.642$; $p = 0.0001$). Patients with HF and LT3S more often had non-toxic goiter (31.5% versus 16.2%, ($x^2= 9.644$; $p <0.002$) and atrial fibrillation (13.5% vs. 6.0%, ($x^2 = 5.070$; $p <0.024$) than patients without LT3S. The patients with HF and LT3S compared with patients without LT3S, had lower HDL (by 9.1%, $p = 0.030$); TSH (by 15.0%, $p = 0.035$), T3f (by 36.6%, $p = 0.0001$), T3r (by 12.9%, $p = 0.041$) levels, and T3f / T4f ratio (by 40.0%, $p = 0.0001$); higher LV EDD (by 3.7%, $p = 0.020$), LV ESD (by 7.2%, $p = 0.0001$), LV ESV (by 20.1%, $p = 0.0001$), MM (by 5.9%, $p = 0.037$) and ILA (by 4.3%, $p = 0.006$); lower LV EF value (by 7.9%, $p = 0.0001$). The hospitalization frequency due to HF decompensation within 2 years, among patients with LT3S, was higher than patients without LT3S (55.1%, vs. 20.4%, $p = 0.0001$). The relative risk of re-hospitalization of HF patients with LT3S within 2 years was 2.098 [1.506 – 2.921] ($p = 0.0001$). The relative risk of death of these patients during the specified period, was 1.642 [0.711 – 3.797] ($p = 0.245$). Thus, the presence of LT3S significantly increased the relative risk of re-hospitalization within 2 years from 20,4 to 55,1%.

Conclusions: Patients with HF and history of MI and LT3S have more severe NYHA functional class, more frequent atrial fibrillation, greater dilatation of the left heart cavities and less myocardial contractility, a higher frequency of re-hospitalization for HF decompensation over two years than patients without LT3S.