

**Heart Failure and Cardiomyopathies****INFLUENCE OF BIOMARKERS OF INFLAMMATION, MYOCARDIAL FIBROSIS, CATECHOLAMINES ON THE SURVIVAL OF CONGESTIVE HEART FAILURE PATIENTS UNDERGOING CARDIAC RESYNCHRONIZATION THERAPY**

Poster Contributions

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Background: Cardiac resynchronization therapy (CRT) improves clinical outcomes in congestive heart failure (CHF) patients, although about 30% of patients do not respond to CRT. We investigated a set of CHF biomarkers associated with various pathophysiological CHF pathways. The purpose of the study was to assess the prognostic value of biomarkers level of immune inflammation, myocardial fibrosis, catecholamines in patients undergoing CRT.

Methods: In 77 patients undergoing CRT (mean age 55.9 ± 8.2 years; 76.6% men; 65% ischemic etiology) best response to CRT (15.0[7.0; 26.0] months) was estimated according to the maximal decrease of left ventricular end-systolic volume. Plasma levels of Nt-proBNP, interleukin (IL)-1 β , IL-6, IL-10, tumor necrosis factor alpha, C-reactive protein, galectin-3 (Gal-3), metalloproteinase-9 (MMP-9), tissue inhibitors of metalloproteinase 1 and 4 (TIMP-1, TIMP-4), ratio MMP-9/TIMP-1, MMP-9/TIMP-4, adrenaline (Adr) and noradrenaline (Nadr) levels in daily urine analysis in dynamics were measured. Patients were divided into 2 groups according to dynamics of biomarkers: I gr. - with reduction of biomarkers level in dynamics, II gr. - with increase of biomarkers level in dynamics. The survival was assessed by Kaplan-Meier method. The mean follow-up was 37.9 ± 23.3 months (from 1 to 115 months).

Results: The impact of dynamics of NT-proBNP levels on survival was not significant ($p=0.088$). The following biomarkers influenced significantly on the survival: Gal-3 - 84.4% in I gr. and 54.5% in II gr. ($p=0.005$); Adr - 96.4% in I gr. and 60% in II gr. ($p=0.001$); Nadr - 95.5% in I gr. vs 70% in II gr. ($p=0.026$). The survival in the group with reduction of IL-6 level was 91.9% vs 62.2% in the group with increase of IL-6 level ($p=0.003$).

Conclusions: Immune inflammation, myocardial fibrosis, elevated catecholamines levels in dynamics is associated with worse survival in patients undergoing CRT. Dynamics of Adr level has more significant impact on survival than Nadr that shows their non-equivalent role in CHF development. The study of biomarkers of myocardial fibrosis, inflammation and catecholamines may be useful in predicting of CHF progression and in monitoring therapy.