Abstract: P2060

Evaluation of kidney function impairment in patients with chronic heart failure and preserved ejection fraction depending on cardiac rhythm

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Topic(s):
Chronic Heart Failure: Comorbidities

Citation:
Aim: to evaluate kidney functional status in patients with chronic heart failure (CHF) and preserved ejection fraction of left ventricle (LV EF) depending on cardiac rhythm.

Methods and materials: 60 patients with CHF and preserved LV EF were included. Average age was 67.2±10.9 years. Diagnosis of CHF was confirmed by presence of clinical symptoms and signs and increased level of N-terminal natriuretic peptide NT-proBNP=125 pg/mL. LV EF was considered as preserved when ≥50%. Additionally, soluble stimulating growth factor expressed by gene 2 (sST2) had been used to confirm CHF and to evaluate its severity. Serum levels of creatinine and cystatin C were measured, as well as glomerular filtration rate (eGFR) using CKD-EPI based on both creatinine and cystatin C were made to evaluate renal filtration function. Neutrophil gelatinase-associated lipocalin (NGAL) was used to detect early tubular kidney damage. Depending on the heart rhythm, the patients were divided into 2 groups. The first group included 30 patients with persistent atrial fibrillation (AF), the rest 30 patients with sinus rhythm.

Results: the groups were matched by sex, age, comorbidity, therapy (except for anticoagulants and antiarrhythmic agents). The parameters of the main criteria for the CHF diagnosis did not differ between groups. Thus, LV FV in the 1st group was 60.4 [CI 58.0-62.8]% in the 2nd group - 61.1 [CI 59.0-63.2]% (p = 0.624). NT-proBNP level in group 1 is 219.0 [167.4; 548.5] pg / ml, in the 2nd — 258.8 [216.0; 586.1] pg / ml (p = 0.430). No differences between groups among the indicators of renal function - creatinine and creatinine-based eGFR (p = 0.145 and p = 0.695, respectively) were found. A higher level of NGAL in the 1st group - 1.05 [0.63; 2.10] ng / ml than in the 2nd - 0.75 [0.60; 1.10] ng / ml (p = 0.033) was detected. The sST2 in the 1st group was 46.0 [41.0; 69.0] ng / ml, and in the 2nd 50 [36.0; 109.0] ng / ml (p = 0.773). Also, there were no differences in the level of cystatin C: 2.2 [1.7; 2.7] and 2.0 [1.4; 3.1] ng / ml (p = 0.589).

Conclusion: persistent AF in CHF patients with preserved LV EF is associated with impaired tubular kidney function in comparison with patients who have sinus rhythm.