Abstract: P1621

Stress-induced growing prevalence of secondary aldosteronism among patients with coronary artery disease and chronic heart failure

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Topic(s):
Chronic Heart Failure – Epidemiology, Prognosis, Outcome

Citation:
Background/Introduction: Numerous studies have shown that aldosterone plasma level is an independent predictor of cardiovascular complications in patients with coronary artery disease (CAD) and chronic heart failure (CHF). It is well known that chronic stress unfavorably affects hormonal secretion and can lead to increase in cortisol one, but its effect on aldosterone level remain unclear.

Purpose: We evaluated the impact of chronic stress on the prevalence of hyperaldosteronism among CHF patients and assessed the relationship between aldosterone plasma level and the risk of major cardiovascular complications.

Methods: The study included 286 patients with stable CAD and CHF undergoing inpatient treatment in cardiology department at V. K. Gusak Institute of emergency and reconstructive surgery the from January 1, 2015 to December 31, 2017, in the period of military conflict in war-zone of Donbass region. Clinical characteristics and plasma aldosterone level of this group were compared with those of 218 CHF patients comparable for age and gender treated in the same hospital in previous peacetime 2012-2013 years. The primary endpoint consists of major cardiovascular events during 12 month after discharge.

Results: High plasma aldosterone level (>160 pg/ml) was found in 27.6 % of wartime patients and 15.6 % of peacetime patients (odds ratio (OR) = 2.1; 95% confidence interval (CI) 1.3 to 3.2). Primary aldosteronism was diagnosed in 2.6 % and 0.9 % of wartime and peacetime patients, respectively (OR = 2.7; 95% CI 0.6 to 13.2). The occurrence of major cardiovascular events (non-fatal myocardial infarction, percutaneous coronary intervention, stroke, new-onset or recurrence of atrial fibrillation, acute heart failure) during 12-months follow-up period was significantly higher during wartime compared to peacetime (OR = 2.6; 95% CI 1.7 to 4.3). The rate of fatal cardiovascular complications was comparable in both groups. High aldosterone plasma level was the independent risk factor of cardiovascular events in Cox regression models adjusted for covariates (OR = 3.2, 95 % CI 2.1 to 5.8 for aldosterone > 160 pg/ml).

Conclusions: Chronic stress leads to growing prevalence of secondary aldosteronism among patients with CAD and CHF. High plasma aldosterone level is associated with increased frequency of cardiovascular events independent of major established risk factors.