

Key words: sleep apnea, cardiac pathologies, major cardiovascular events, arrhythmias, cardiac blocks

45. THYROID FUNCTION AND CHRONIC KIDNEY DISEASE IN HEART FAILURE PATIENTS

Author: **Elena Bivol**

Scientific adviser: Liviu Grib, MD, PhD, Professor, Department of Internal Medicine, Cardiology

Nicolae Testemitanu State University of Medicine and Pharmacy of the Republic of Moldova

Introduction. In the last years, the global prevalence of the moderate-severe renal dysfunction has gradually increased to an epidemic state. The risk of chronic kidney disease occurrence in heart failure (HF) is not well established, but kidney dysfunction is very often encountered in HF patients and is associated with a poor prognosis. Thyroid hormone, also, has been identified as a risk factor for the heart disease progression and development.

Aim of the study. To investigate whether thyroid function is associated with chronic kidney disease in heart failure patients.

Materials and methods. This observational cohort study included 25 patients with reduced ejection fraction heart failure CKD. Routine biochemistry, including Cysteine C, thyroid stimulating hormone(TSH) and proteinuria were measured. Glomerular filtration rate (GFR) was estimated by the CKD-EPI CYSTETIN C based formula adjusted for Body Surface Area. We divided patients into two groups according to estimated GFR: ≥ 60 ml/min (CKD stages I-II KDOQI); and < 60 ml/min(CKD stages III-V KDOQI).

Results. Among 26 adult participants, 15 had moderate-to-severe decrease in $eGFR < 60$ ml/min with a mean TSH level of 7.4 ± 3.28 UN/ml ($p < 0.05$); Cystetine C of 1.15 ± 0.07 mg/L; mean ejection fraction (EF) of $43.4 \pm 2.84\%$ level; uric acid level 446.2 ± 81.27 mmol/L; total cholesterol – 7.95 ± 3.37 mmol/L; triglycerides 2.19 mmol/L and 0.12 g/l proteins in urine. 11 subjects had elevated, normal or mild decrease in $eGFR \geq 60$ ml/min; a mean TSH level of 2.2 ± 0.65 UN/ml ($p < 0.01$); Cystetine C of 1.74 ± 0.13 mg/L; mean ejection fraction(EF) of $42 \pm 2.77\%$; uric acid level 235.5 ± 113.5 mmol/L total cholesterol – 7.95 ± 3.37 mmol/L; triglycerides 2.19 mmol/L, and 0.07 g/l proteins in urine. Compared with participants with an estimated GFR ≥ 60 ml/min, those with estimated GFR < 60 ml/min had an increased rate of subclinical primary hypothyroidism, higher levels of uric acid, total cholesterol and triglycerides.

Conclusions. Our results suggest that subclinical hypothyroidism is associated not only with heart failure but also with CKD, and may be considered as a novel risk factor of reduced renal function. Further studies are needed to better understand the causal implications of hypothyroidism in CKD patients.

Key words: thyroid function; chronic kidney disease; heart failure; glomerular filtration rate

46. THE IMPACT OF STATINS ON THE METABOLISM OF PATIENTS WITH CARDIOVASCULAR DISEASE

Author: **Felicia Cojocari**

Scientific adviser: Olga Tagadiuc, PhD, Associate professor, Department of Biochemistry and Clinical Biochemistry

Nicolae Testemitanu State University of Medicine and Pharmacy of the Republic of Moldova

Introduction. Statins are a class of lipid-lowering medications, also known as HMG-CoA reductase inhibitors. They are considered one of the most popular prescribed agents worldwide for treatment of hypercholesterolemia. Statins are effective drugs to reduce cardiovascular events

and mortality secondary to dyslipidemia. Statin therapy is considered as the standard dyslipidemia therapy. Except lipid-lowering effect, it is known that statins have cholesterol-independent effects (pleiotropic effects).

Aim of the study. This review was undertaken to investigate the pleiotropic effects of statins on the metabolism of patients with cardiovascular disease.

Material and methods. To identify relevant articles, HINARI and ScienceDirect databases were searched using the key-words: „statins”, „pleiotropic effects statins”, „lipophilic statins”, „rosuvastatin”, „atorvastatin”.

Results. This study concluded that the pleiotropic effects of statins differ based on lipophilic properties. Hydrophilic statins (rosuvastatin, fluvastatin, pravastatin) are liver specific. Lipophilic statins (atorvastatin, lovastatin, simvastatin) are widely distributed in different tissues and determine a lot of side effects. Statins exhibit numerous pleiotropic effects as inhibition of inflammation response and oxidative stress, modulation of cell proliferation, improvement of endothelium function, suppression of platelet activity, plaque stability, normalization of sympathetic outflow, etc. The multiple pleiotropic effects of statins are due to multiple mechanisms, the most important one being the reduction of circulating isoprenoids and hence inactivation of signaling proteins. These multiple lipid-independent effects of statins are utilised for research in multiple treatment domains.

Conclusions. Pleiotropic effects of statins are of major relevance in the treatment of the major cardiovascular conditions and diseases, such as atherosclerosis, acute coronary syndrome, chronic heart failure, postoperative atrial fibrillation and others.

Key words: statins, pleiotropic effects, cardiovascular diseases

47. THE EFFECT OF THE METABOLIC SYNDROME ON RIGHT VENTRICULAR DIASTOLIC FUNCTION

Author: **Ecaterina Sedaia**

Scientific adviser: Valeriu Revenco, MD, PhD, Professor, Chair of Department of Internal Medicine, Cardiology

Nicolae Testemitanu State University of Medicine and Pharmacy of the Republic of Moldova

Introduction. The importance of right ventricle (RV) structure and function has been always underestimated by physicians in their daily practice. Diastolic function of RV generally represents a complex process and its dysfunction is associated with pressure and volume overload pathologies, primary lung disease, ischemic heart disease, left ventricle dysfunction etc. According to the last studies, metabolic syndrome (MS) also has impact on RV structure and function and represents important marker of cardiovascular risk.

Aim of the study. The aim of this study was to examine the impact of MS on RV remodeling and mechanics, especially diastolic function and to determine the most important parameters of MS for right heart remodeling.

Materials and methods. The study included 68 subjects: 34 subjects with MS (21 women and 13 men) and 34 controls (17 women and 17 men). There was no statistically important difference in the mean age between the subjects with MS and controls ($p > 0.05$). MS was defined by the presence of ≥ 3 IDF, AHA/NHLBI (2009) criteria. All subjects underwent complete two-dimensional echocardiography and laboratory blood tests. We determined the ratio of early and late diastolic tricuspid flow velocities (E/A) and the ratio of early diastolic tricuspid and septal tricuspid annuli flow velocity (E/e'). Assessment of RV systolic or diastolic function was based on the recommendation of the European Society of Echocardiography 2015. Also anthropometric measures (height, weight, waist circumference) were taken from all the subjects included in the study.