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EVALUATION OF THE LEVEL OF KINESIOPHOBIA IN PATIENTS WITH HEART FAILURE

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In recent years, secondary prevention programs focused on physical activity and cardiac rehabilitation and have been widely used as prevention of all causes of cardiovascular mortality and morbidity. However, insufficient participation and adherence to rehabilitation programs are an increasing problem for the population due to limited daily life activities. Meanwhile, patients with chronic diseases or avoidance behavior in pain characterize an adaptive part of the behavior as a natural response to damage and only part of them will suffer true kinesiophobia without being able to avoid their fear. Kinesiophobia is a fear of physical exercises that might get worse in case of cardiovascular disease.

The aim of the study was an assessment of the level of kinesiophobia for cardiac function evaluated by clinical parameters in patients with cardiovascular disease. The analysis of clinical, laboratory, instrumental, including echocardiographic (Echocardiography) in 81 patients (28 women) aged 61.9 ± 7.48 years hospitalized in the acute coronary insufficiency unit was performed. Kinesiophobia was assessed using the Tampa Scale of Kinesiophobia Heart (TSK-Heart) questionnaire. The Finnish version of the TSK (14) (TSK-FIN) was used to assess the fear of movement/(re-)injury. The TSK-FIN is a 17-item questionnaire. Each item is assessed using a 4-point Likert scale: strongly disagree, disagree, agree, or strongly agree. A total score is calculated after first inverting items 4, 8, 12, and 16. The scores range from 17 to 68; a higher score indicates a greater fear of movement. TSK value greater than 37 was a cut-off point for high kinesiophobia.

In case of concomitant valve pathology (valves insufficiency), a significantly higher TSK compared to the mean or mild (45.7 ± 2.05 vs. 37.9 ± 3.18 , $p < 0.05$) was observed. TSK scores increased with age ($p < 0.05$), higher in women than in men (45.71 ± 3.14 vs. 38.11 ± 2.19 , $p = 0.05$) and in patients with atrial fibrillation (45.3 ± 3.23 vs. 35.9 ± 3.38 , $p < 0.05$). There was a significant inverse association between kinesiophobia and leisure-time physical activity in both sexes after adjusting for age. Index TSX rises significantly in the case of severe heart failure (NYHA IV) than in the lower classes ($p < 0.05$). Patients with heart failure are characterized by increasing body mass index ($p = 0.05$).

Thus, among patients with cardiovascular disease, kinesiophobia has many causes and increases with the progression of the symptoms of heart failure. We have presented reference values for the TSK-FIN. Age and the TSK-FIN score were associated with one another in both sexes; older age groups had higher scores than younger ones. Men had higher mean scores overall and there were also gender differences in an item-by-item comparison.

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CLINICAL AND INSTRUMENTAL MARKERS OF ACUTE MYOCARDIAL INFARCTION COMPLICATED BY ACUTE HEART FAILURE FLOW EVALUATION

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Determination of prognosis within first year after acute myocardial infarction (AMI) remains one of the most topical issues of cardiology.

368 patients were examined with the purpose to create a prognostic model of acute myocardial infarction complicated by acute heart failure course. Some risk factors of lethal outcome were distinguished.

Transmural AMI occurred in 141 (38.32%), macrofocal AMI – in 166 (45.11%) and microfocal AMI – in 61 (16.57%) cases as established by results of complex clinical-instrumental examination including detailed complains collection, anamnesis, careful clinical investigation, electrocardiography in dynamics. 123 (33.42%) persons out of 368 examined died throughout



observation period, in particular, 94 (25,54%) patients – during 28-day staying in hospital, and 29 (7,88%) – during a year of observation.

With a purpose to create prognostic models of AMI complicated by acute left-ventricular failure (ALVF), all the patients were divided into 2 groups: group 1 – with favorable AMI outcome, and group 2 – with fatal outcome.

Patients who died were on an average 9 years older comparing those with favorable outcome. Males were prevalent amongst ($p < 0,001$). Besides, repeated AMI was registered much more frequently in 2 group patients (79,6% vs 39,19% in group 1, $p < 0,001$). Class 2-4 ALVF signs by T.Killip were significantly more frequent in group 2 patients ($p < 0,001$). Frequency of arterial hypertension (AH) and diabetes mellitus (DM) presence in anamnesis was significantly higher in group 2 patients as well ($p < 0,01$). Risk factors prevalence analysis among patients of both groups revealed significant prevalence of active smoking ($p < 0,01$) and obesity ($p < 0,001$) in group 2 patients as well.

Single-factor regression analysis results indicated the fact that risk of lethal event occurrence increased with age: increase of risk by a factor of 1.5 follows each additional 5 years over 50. Risk of lethal event appearance raised twice with every ALVF class by Killip increase, 1.02 times more with income HR increase on 10 b.p.m. after 60 b.p.m., 1.3 times more in patients with DM, 1.15 times more in case of obesity presence, three times more in patients with chronic heart failure (CHF), 1.2 times more in case of ejection fraction (EF) below 40% detected during 1-2 days after patient's admission, and 4.5 times more in case of anterior AMI localization.

IL-1 α content analysis revealed its significant predominance in group 2 patients (48,94+7,05 vs 22,43+3,41 pg/ml (group 1), $p < 0,01$). IL-6 level was markedly higher in group 2 patients as well (51,63+7,86 vs 16,84+3,94 pg/ml, $p < 0,01$), and level of anti-inflammatory cytokine IL-10 was lower in group 2 patients comparing group 1 (2,45+0,51 vs 4,03+0,73 pg/ml, $p > 0,05$).

Tumor-necrotizing factor (TNF) and neopterin (Np) levels analysis in the groups indicates significant predominance of these both values in group 2 patients comparing group 1: 63,41+3,78 vs 43,1+2,62 pg/ml for TNF ($p < 0,01$) and 24,28+4,32 vs 15,08+1,76 nmol/l for Np ($p < 0,05$).

Elder patients age, higher class of ALVF, presence of DM and CHF, anterior localization of AMI, smoking and obesity, EF low then 40% are independent predictors of lethal event development in patients with AMI and ALVF. Besides, increase in pro-inflammatory cytokines level (IL-1 α , IL-6, TNF and Np) parallel with worsening of EchoKG EF results promote increase of lethal event onset probability in the mentioned category of patients.

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**CHANGES OF HEART RATE TURBULENCE AS A PREDICTOR OF RISK IN
PATIENTS WITH CORONARY AND NON-CORONARY HEART DISEASES AND
VENTRICULTURAL EXTRASYSTOLS**

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Circulatory diseases remain the leading cause of disability and mortality, despite a wide range of diagnostic methods to objectify the cardiovascular system. Electrocardiography (ECG) and Holter ECG monitoring (HM) remain the key methods for assessing heart rate and electrical processes in the myocardium. HM provides an opportunity to analyze the heart rate turbulence (HRT) with assessment of “turbulence onset” (TO), especially in high-risk groups, and helping assess prognostic value in the development of sudden cardiac death (SCD).

The aim of the study was to evaluate changes in HRT and features of TO in patients with stable angina (SA), postinflammatory myocardial fibrosis (PIMF), neurocirculatory dystonia (NCD) and the effects of arterial hypertension (AH).

An analysis of the results of examinations of 35 patients consulted at the Department of Internal Medicine, Physical Rehabilitation and Sports Medicine of HSEE “Bukovinian State Medical University” with complaints of cardiac pain of unknown origin.