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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 were 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 such patients due to the limited daily life activities. Worsening of the symptoms of the disease causes fear of movement, which leads to limited activity. Most patients with pulmonary arterial hypertension and heart failure are afraid of being physically active; they have shortness of breath, dizziness, or chest pain. Thus, in the long term, limited physical activity can have negative physical and psychological consequences. Meanwhile, the 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 [3, 4]. Kinesiophobia is a fear of physical exercises that might get worse in case of cardiovascular disease [2].

The aim of the study was to assess the level of kinesiophobia due to cardiac function evaluated by clinical parameters in patients with cardiovascular disease. The analysis of clinical, laboratory, instrumental, including echocardiographic (Echocardiography) 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 [3]. The Finnish version of the TSK (14) (TSK-FIN) was used to assess 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 as a cut-off point for high kinesiophobia.

Secondary prevention of coronary heart disease is aimed at reducing the risk of recurrent heart attack and is carried out in heart disease. Exercise in cardiac rehabilitation has been treated in an almost positive way as for mortality, morbidity, quality of life, and risk factors for people with coronary heart disease. However, the relationship between daily physical activity and risk factors of cardiac diseases is more uncertain for secondary prevention. The positive effect of cardiac rehabilitation is reduced by morbidity and mortality, both general and cardiovascular, including a

positive effect on the functional state of patients, their weight, blood pressure, lipid profile, glycaemia, and insulin sensitivity, fibrinolytic activity. It has been observed that ectopic myocardial activity decreases, and anginal attacks decrease and oxygen consumption increases due to exercises. Other benefits include improvement of quality of life and decline of depression.

Rehabilitation programs are complex and need to be identified individually to achieve the established health benefits. The results of the survey indicate that a high level of kinesiophobia was observed in 20% of patients with coronary heart disease six months after the cardiac problem. From the point of view of secondary prevention, it is desirable to detect high levels of kinesiophobia in patients with coronary heart disease, as recognition may facilitate appropriate recommendations and treatment for such patients. It is necessary to emphasize the importance of using a psychometrically based questionnaire. This provides introductory support for TSK-SV Heart as a reliable, valid questionnaire for measuring kinesiophobia in patients with coronary heart disease [1, 3]. In the case of concomitant valve pathology (valve 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, $p < 0.05$). Index TSK rises significantly in the case of severe heart failure (NYHA IV) compared to the lower classes ($p < 0.05$). Patients with heart failure are characterized by increasing body mass index ($p = 0.05$). There are several important clinical variables that affect the result of rehabilitation associated with the high level of kinesiophobia. Patients with high levels of kinesiophobia had a significantly higher history of myocardial infarction ($p < 0.05$), concomitant diabetes mellitus ($p < 0.01$), and hypertension ($p < 0.05$) compared to patients with low levels of kinesiophobia. In addition, patients with high levels of kinesiophobia had more complications during their hospital treatment, including signs of heart failure ($p < 0.05$) and such kind of arrhythmia as atrial fibrillation ($p < 0.05$). The presence of kinesiophobia and the fear associated with physical rehabilitation potentially might interfere with successful cardiac rehabilitation. Further research should expand this information and develop optimal treatment interventions for patients with the high level of kinesiophobia and the main goal of increasing physical activity and exercise.

Thus, among the patients with cardiovascular disease, kinesiophobia has many causes and increases with the progression of the symptoms of heart failure. The exercise program is well tolerated and can be used as an alternative to traditional hospital exercise programs. The TSK-SV Heart Scale was assessed as a reliable, valid questionnaire to measure kinesiophobia in patients with coronary heart disease. In patients with cardiovascular disease, kinesiophobia has a multifactorial nature and is much greater in patients with NYHA III, and especially class IV. The impact on kinesiophobia was identified by clinical variables that affected rehabilitation outcomes and prognosis, representing all components of ICF, medical variables, and health-related quality of life in patients with coronary heart disease.

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