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Роль Международной классификации функционирования, ограничений жизнедеятельности и здоровья в комплексной реабилитации кардиологических больных

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Обоснование. В работе междисциплинарной реабилитационной бригады существенная роль принадлежит новому формату оценки нарушенных функций, ограничений жизнедеятельности и здоровья, изложенного в Международной классификации функционирования, ограничений жизнедеятельности и здоровья (МКФ), применение категорий которой необходимо на всех этапах реабилитации. Однако в практической деятельности использование МКФ весьма ограничено в связи с рядом организационных причин.

Цель — донести специалистам всех профилей, участвующих в реабилитации инвалида, основные положения МКФ; обсудить разработанную нами градацию реабилитационного потенциала у кардиологических больных.

Материалы и методы. Проведен анализ направлений в бюро медико-социальной экспертизы (форма 088/У) больных сердечно-сосудистыми заболеваниями с выделением групп низкого и высокого реабилитационного потенциала.

Результаты. Проанализированы основные положения МКФ, регламентирующие раздел сердечно-сосудистых заболеваний. Данная классификация является «золотым стандартом» оценки качества жизни и оказываемых медицинских услуг обосновывает необходимость, объем и состав индивидуальных реабилитационных мероприятий инвалида. Обсуждаются пути использования в клинической практике принципов, заложенных МКФ, для оценки результатов комплексной реабилитации больных с кардиологической патологией. Выделены основные положения МКФ, влияющие на качество реабилитационных мероприятий у больных кардиологического профиля. Составлен и предложен для применения перечень заболеваний/состояний, характеризующий различные уровни реабилитации.

Заключение. Авторами разработана и представлена к обсуждению градация реабилитационного потенциала больных по разделу «сердечно-сосудистые заболевания», а также обсуждены общие положения МКФ, упрощающие и облегчающие ее применение в практической работе с учетом действующих в РФ стандартов обследования, лечения и реабилитации кардиологических больных.

Ключевые слова: международная классификация функционирования; комплексная реабилитация; сердечно-сосудистые заболевания; реабилитационный потенциал.

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The role of the International classification of functioning in the complex rehabilitation of cardiac patients

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BACKGROUND: A new format for assessing impaired functions, disabilities and health in accordance with the international classification (ICF), which is necessary at all stages of rehabilitation, is considered of great importance in the practice of an interdisciplinary rehabilitation team. However, in practice, the use of the ICF is very limited due to a number of organizational reasons.

AIM: To raise awareness among specialists of different fields involved in the rehabilitation of a disabled person, about the main provisions of the ICF; discuss the gradation of rehabilitation potential developed by the authors in cardiac patients.

MATERIALS AND METHODS: An analysis of referrals to the medical and social expertise bureau (form 088 / U) of patients with cardiovascular diseases has been carried out with the allocation of groups of low and high rehabilitation potential.

RESULTS: An analysis of the main provisions of the ICF regulating the section of cardiovascular diseases is presented. This classification is the "gold standard" for assessing the quality of life and medical services provided, substantiating the need, volume and composition of individual rehabilitation measures for a disabled person. The ways of using the principles laid down by the ICF in clinical practice for evaluating the results of complex rehabilitation of patients with cardiac pathology are discussed. The main provisions of the ICF, influencing the quality of rehabilitation measures in patients with cardiological profile, are highlighted. A list of diseases / conditions has been developed and proposed for use, which involves various levels of rehabilitation.

CONCLUSIONS: The authors have developed and proposed for discussion the gradation of the rehabilitation potential of patients with cardiovascular diseases, as well as discussed the general provisions of the international classification of functioning, simplifying and facilitating the use of ICF in practical work, taking into account the standards of examination, treatment and rehabilitation for cardiac patients in accordance with the standards of examination, treatment and rehabilitation of cardiac patients approved in the Russian Federation.

Keywords: international classification of functioning; complex rehabilitation; cardiovascular diseases; rehabilitation potential.

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BACKGROUND

In recent years, more and more elderly and senile patients with multimorbidity, accompanied by psychological and somatic risk factors, have been seeking primary health care. In the care of such patients, the doctor considers the nature of multimorbidity and polypragmasy, without taking into account a significant part of the non-medical aspects of the patient's health, including his psychological status, circumstances, environmental factors, etc. The biopsychosocial model of the disease offers a new paradigm of complex rehabilitation. The fight against the diseases of elderly patients today is aimed at reintegration, compensation of all levels of functioning, and maintaining the social activity of the patient. The World Health Organization experts proposed the International Classification of Functioning, Disabilities, and Health (ICF), a tool that provides a common language to describe functioning [1]. It has become the "gold standard" for assessing the quality of life and the provided medical services, substantiating the need, scope, and composition of individual rehabilitation measures.

Unlike other classification systems, such as the International Classification of Diseases (ICD), which focuses on the clinician's perspective, the ICF is based on the patient's functioning in his environment. The ICF complements the ICD by providing a way to document the consequences of diseases at various levels, with an emphasis on the patient's autonomy in daily life. Functioning and disability are considered as the result of the interaction between the patient's health status, environmental factors (barriers), and personal factors.

In June 2021, the updated Law 181 FZ "On Social Protection of the Disabled in the Russian Federation" came into force, which focuses on the comprehensive rehabilitation of people with disabilities, including all levels of functioning and health.

The concept of "complex rehabilitation" of patients with cardiovascular pathology includes a wide range of activities, including an assessment of the patient's clinical, cognitive, and mental states, the main instrumental parameters of hemodynamics, and the functional reserve of the body, as well as factors that limit rehabilitation measures.

The concept of "rehabilitation potential" represents an integral element of complex rehabilitation and is widely used in the ICF [2]. In the section on cardiovascular diseases, the rehabilitation potential is based on the assessment of a complex of functional parameters of systemic and local hemodynamics, which determines the indications for rehabilitation and the optimal amount of rehabilitation care. These parameters include the following:

- coronary heart disease (CHD), chronic heart failure (CHF), valvular heart disease, hypertensive disease;
- severity of heart and blood vessel damage;
- potential danger of pre-existing cardiac arrhythmias and conduction disorders;
- functional reserve of blood flow through the main vessels;
- complications after cardiovascular interventions that led to the underlying disease aggravation;
- symptomatic manifestations in multimorbidity;
- individual resources and compensatory possibilities of the cardiovascular system;
- contextual factors such as the psychological status and the degree of compliance of the patient, as well as social and domestic environmental factors.

RESULTS AND DISCUSSION

In the work of a medical and social expert and a rehabilitologist, the patient's rehabilitation potential assessment has become an essential element of effective decision-making, allowing the full range of existing methods and means of complex rehabilitation to its full extent. Therefore, identifying the levels of rehabilitation potential, namely high, medium, low, and extremely low levels concerning patients with cardiological disorders is advisable. The disease characteristic of **extremely low potential** includes the following:

- terminal heart failure, which persists in the course of optimal treatment for >3 months at the level of functional classes (FC) III and IV with extremely low (<30%) left ventricular ejection fraction and heart transplantation indications [1];
- FC IV stable angina with a low reserve of coronary blood flow, preventing revascularization due to a pronounced multimorbid background (for example, terminal chronic kidney disease, decompensated CHF, and advanced stage of cancer) or multiple critical proximal and distal stenoses (>90%) of the left coronary artery;
- potentially malignant cardiac arrhythmias (sustained ventricular tachycardia and symptomatic bradyarrhythmia with a pulse rate of <40 per min) with organic damage to the myocardium and the conduction pathways of the heart, for example, long *Q-T* syndrome, arrhythmogenic right ventricular dysplasia, and Brugada's syndrome without the possibility of implanting an artificial pacemaker (cardioverter-defibrillator);
- uncontrolled arterial hypertension with the development of end-stage chronic kidney disease and cerebral stroke with multiple focal neurological symptoms.

Assigning an extremely low-level rehabilitation potential to patients with stage III CHF (completely irreversible) was considered necessary the Vasilenko–Strazhesko classification to formulate the criteria for quantitative assessment of impaired body functions in cardiovascular system diseases in medical and social expertise following the current Order of Ministry of Labor of the Russian

Federation No. 585n. The same subgroup can include patients with cardiac disorders with a survival duration of <1 year (according to validated prognosis scales) due to the presence of concomitant potentially severe pathology, for example, according to the IPSS-R prognostic scale for assessing the severity and prognosis of myelodysplastic syndrome.

The following diseases and conditions are proposed to be classified as **low**-level rehabilitation potential:

- stage IIb CHF (FC III) and FC III stable coronary insufficiency, persisting in optimal treatment;
- a significantly reduced potentially fatal cardiac arrhythmias in patients with organic heart disease, achieved using implantable devices;
- successful heart transplantation within the first year after surgery in the absence of significant manifestations of the graft-versus-host disease;
- persisting symptoms of the underlying disease after surgical methods of treatment, namely revascularization, heart valve replacement, heart transplantation, and device implantation. This subgroup may also include less severe stages of cardiovascular disease with associated progressive pathology (e.g., diabetes mellitus, chronic obstructive pulmonary disease, and chronic kidney disease), which can become a competing disease.

This level of rehabilitation potential is suggested to include the advanced stages of CHF and CHD in patients who do not receive the standard recommended drug or surgical care due to various circumstances. The optimal approach of managing such patients can fundamentally change the disease course and prognosis. For example, at present, the average life expectancy of patients with dilated cardiomyopathy has increased from 2 to 10–15 years or more, not due to a change in the disease pathomorphosis, but the emergence of new drugs, such as antagonists/blockers of angiotensin II, its receptors and mineralocorticoid receptors, selective catecholamine blockers, a neprilysin inhibitor, and natriuretic peptide inducers, as well as drugs that affect the metabolism of cardiomyocytes (trimetazidine and dapagliflozin), etc.

The following forms of cardiovascular diseases are proposed to include as the level of **medium** rehabilitation potential:

- stage IIa CHF and FC II stable coronary insufficiency combined with a low stage of heart failure (up to IIa);
- treatment-compensated severe organic heart disease (e.g., large-focal or repeated small-focal myocardial infarction and chronic rheumatic heart disease);
- severe organic heart disease with relapses (myocardial infarction and cerebral stroke), which compensation is prevented only by the patient's low compliance.

Finally, the subgroup with a **high** rehabilitation potential with cardiovascular diseases with good hemodynamic compensation and disease symptoms that occur only with moderate exercise were included. Such patients do not need additional treatment methods, since they are ready to carefully follow the medical recommendations.

Following the ICF provisions, a rehabilitation diagnosis is coded with the participation of specialists from a rehabilitation interdisciplinary team. The codifier is based on the national standard of the Russian Federation, which includes the classifications of rehabilitation measures and technical means of rehabilitation for people with disabilities. The codifier is designed to assess the condition of a disabled person to form an individual rehabilitation or habilitation program, select the technical means of rehabilitation, and determine treatment efficiency. The codifier is represented by independent records (codes) that are combined into chains based on the categories of ICF domains with the corresponding qualifiers.

The block of categories, "Functions of the cardiovascular system," included in section 7, includes the b410–b429 codes. Block b4101 "Heart rate" contains functions that are related to heart contraction regularities.

Block b410, "Functions of the heart," includes pumping functions to maintain blood flow and pressure throughout the body in adequate or required amounts; functions of heart rate, rhythm, and ejection; force of the myocardial contraction; heart valve functions; pumping functions of the pulmonary circulation; and dynamics of return to the heart as tachycardia, bradycardia, irregular heartbeats as in heart failure, cardiomyopathy, myocarditis, and coronary insufficiency.

Block b415, "Functions of the blood vessels," describes the transport of blood to organs and tissues, namely the arterial functions, capillaries and veins; vasomotor functions; pulmonary arterial functions, capillaries, and veins; venous valve functions; and arterial blockage or narrowing as atherosclerosis, arteriosclerosis, thromboembolism, and varicose veins.

Block b420, "Blood pressure functions," comprises functions of maintaining blood pressure; increased and decreased blood pressure as hypotension, hypertension, and postural hypotension.

Specialists of the interdisciplinary rehabilitation team have the right not to use these codes and describe the patient's condition based on the ICF text. Blockwork enables the rehabilitation team to compile a list of problems in ICF categories and highlight the key problem that leads to health disorders and limitations, of which, the resolution will help restore the patient's functional status as a whole. Treatment is appropriate if dysfunction is the key problem; surgical intervention should be performed if there is a structural disorder; adaptation or retraining is required in case of activity restriction (social activity); and a change in the environment is appropriate in case with barrier factor.

Domains are evaluated by the severity of the restriction or impairment (not pronounced, mild, moderate, severe,

or absolute) in points. At the end of the rehabilitation measures, the expert repeatedly determines the severity of the disorder/limitation, analyzing the quality of the work of the rehabilitation team. Recording it in a rehabilitation diagnosis is required if helping a patient with an identified problem is impossible at this stage due to insufficient appropriate medical technologies. This problem may become a rehabilitation task at the next stage or in another clinic.

Thus, the main implication of the ICF is to improve the quality of rehabilitation diagnostics and effectively manage the work of an interdisciplinary team.

However, the ICF has several shortcomings that prevent its widespread use in clinical practice. Section 7, "Functions of the cardiovascular system," excludes several blocks that are directly related to cardiovascular pathology, namely block b455, "Exercise tolerance functions," and block b469, "Additional functions and sensations in the cardiovascular and respiratory systems." The specialist is forced to look for suitable categories in other sections among the 1454 identifiers.

Additionally, the clinician, rehabilitation specialist, and medical and social expert do not understand the principle of using additional blocks that largely duplicate the main blocks, but are included in sections that are not related to the function of the cardiovascular system, such as block b498, "Functions of the cardiovascular systems, blood system, and immune... system." Considering the functions of the blood and the immune system regardless of hemodynamic parameters is advisable.

Additional blocks in the ICF that are related to the competence of a cardiologist also raise questions, such as block b460, "Sensations associated with the cardiovascular and respiratory system functioning," which includes "sensations of cardiac and heartbeat malfunction and respiratory difficulty," which describe subjective "sensations of chest tightness, irregular heartbeat, dyspnea, shortness of breath, asphyxia, lump in the throat, spasm, and wheezing," and block b460, "Additional functions and sensations of the cardiovascular and respiratory systems, other specified and unspecified ones." In our opinion, the medical records of patients with organic heart and blood vessel diseases should contain data from physical examinations based on instrumental parameters of hemodynamics and not on the patient's sensations. More than 80% of episodes of coronary insufficiency in a patient with CHD are known as asymptomatic, malignant tachyarrhythmias are recorded only with daily electrocardiographic monitoring, and pronounced subjective sensations occur with benign cardiac arrhythmias (supraventricular extrasystoles).

Our main remark on the codifier structure in the section on cardiovascular diseases is the excessive detailing of ICF by blocks, which significantly increases the work time of the rehabilitation team, without increasing the complex rehabilitation efficiency. Additionally, the main block of cardiovascular diseases (CHD and CHF) exclude criteria that are fundamental for assessing the rehabilitation prognosis, such as exercise tolerance and key hemodynamic parameters (duration and severity of myocardial ischemia, myocardial contractility and rigidity, and the degree of myocardial remodeling), which more fully reflect the efficiency of medical interventions.

When preparing a rehabilitation diagnosis, the ICF proposes to select for each relevant classification domain the appropriate indicated definitions below in brackets (the xxx sign is indicated in place of the second-level domain code):

- xxx.0 NO problems (none, absent, negligible...) 0%–4%;
- xxx.1 MILD problems (minor, mild...) 5%–24%;
- xxx.2 MODERATE problems (medium, significant...) 25%–49%;
- xxx.3 SEVERE problems (high, intense...) 50%–95%;
- xxx.4 ABSOLUTE problems (complete...) 96%–100%;
- xxx.8 not defined;
- xxx.9 not applicable.

The proposed edition of the classification contains biased and descriptive terminology, such as "significant," "intense," and "complete," which significantly complicates the succession of prescriptions at the rehabilitation stages, therefore the members of a comprehensive rehabilitation team intend different meanings into definitions. Using this scale, the clinician will accurately assess the severity of CHF and stable CHD, but will not objectively determine the severity of disorders of heart rhythm, conduction, and arterial hypertension. The percentage of dysfunctions in this classification also does not correspond to the clinical data of cardiac diseases. "Severe" heart failure corresponds to stage IIb, whereas 50% corresponds to stage IIa, 75% or more to FC III coronary insufficiency, and 50% are not proposed.

The interpretation of the severity assessment of arterial hypertension is also noteworthy. In the ICF, arterial hypertension is represented by the b4200 domain, in which the block b42002 reflects a "moderate" increase in blood pressure. Russian and international standards do not use such concepts as "moderate" or "severe," since they are not included in the modern classification of hypertension stages.

CONCLUSION

Our comments will help limit the use of the current ICF edition in the Russian Federation. Improve several ICF provisions is considered necessary, especially those related to cardiological issues, to reduce the number of blocks that do not include objective data on the state of patients with

cardiovascular disease and increase the list of hemodynamic parameters used by clinicians to assess the disease severity and prognosis. This will simplify and concretize the evaluation of the patient's health. We suggest validating the proposed basic sets of domains by specialty [3] to reduce the search time in the ICF to make the work of the rehabilitation team more efficient.

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