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Algorithm of rehabilitation examination of children with bronchopulmonary diseases

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Purpose: *to develop the algorithm of rehabilitation examination for children with bronchopulmonary diseases.*

Material & Methods: *analysis, generalization, systematization and comparison of data of scientific and methodical literature on problems of physical rehabilitation at bronchopulmonary diseases.*

Results: *the offered algorithm of rehabilitation examination of children with bronchopulmonary diseases provides the consecutive application of such methods as: poll, physical examination, functional examination and method of indexes, which analysis allows defining the rehabilitation diagnosis, which is the basis of technology of the rehabilitation process.*

Conclusions: *rehabilitation examination is the compound of physical rehabilitation which is carried out for the purpose of definition of the rehabilitation diagnosis and is based on subjective, objective assessments and data of supervision. The consecutive carrying out of the complex rehabilitation examination on the offered algorithm and the detailed analysis of its results will promote the determination of rehabilitation potential, the reasons of violations from various systems of organism and individualization of the rehabilitation process of children with bronchopulmonary diseases.*

Keywords: *rehabilitation examination, bronchopulmonary diseases.*

Introduction

Physical rehabilitation is the integral part in treatment of diseases of respiratory organs. The display to its carrying out are sharp and chronic respiratory diseases which result from infection, inflammation, trauma, violation of mechanics of breath, deformation and operative measures on organs of a chest [15]. Renewal of the respiratory system at children and teenagers is a specific part of physical rehabilitation at bronchopulmonary diseases, at which the integrated approach has to be, which considers not only the requirements, caused by a disease, but also considering separate stages of physical and intellectual development of a child and natural physical activity [12].

The prime and integral component in the course of physical rehabilitation is carrying out rehabilitation examination for the purpose of definition of functional violations and establishment of the rehabilitation diagnosis [2; 7; 10] which will allow to create further the individual program of physical rehabilitation which adequate to needs of a patient [2; 8].

There is a change of focus of therapy on renewal of function at physical rehabilitation [11]. Therefore to understand functional problems of a patient and to define how to reduce these violations, it is necessary to define all factors which influence activity, especially those which can influence improvement of condition of a patient. And it demands the system approach to the analysis of dysfunction from this patient [14]. The certain departmental lack of regulation in respect of limits of its office competence and the available opportunities, which concern problems of purpose of additional methods of examination of a patient immediately, which completely are defined by a doctor, exists for today in practical activities of the Ukrainian specialists in physical rehabilitation [1]. However physical rehabilitolog has to exercise constantly control of physical condition of a patient in the course of work with a patient for the purpose of correction of the program of physical rehabilitation according to condition of a patient at the time of intervention. Therefore the rehabilitation diagnosis is formed on the basis of comprehensive examination of a patient who includes as the clinic-functional diagnosis (what is established by a doctor) but displays character and expressiveness of anatomic-physiological and functional violations, ratios pathogenetic and sanogenetic mechanisms at this stage of a disease (according to the clinical picture, the anamnesis and the nature of disease), and the characteristic of violations of habitual activity [2].

Communication of the research with scientific programs, plans, subjects

The work is performed on the subject of the Built plan of the research work in the sphere of physical culture and sport for 2011–2015, subject 4.2. "Physical rehabilitation of disabled persons with violation of activity of the musculoskeletal system" (number of the state registration is 0111U006471).

The purpose of the research:

to develop the algorithm of rehabilitation examination for children with bronchopulmonary diseases.

Material and Methods of the research

Research methods: analysis, generalization, systematization and comparison of data, scientifically-methodical literature on problems of physical rehabilitation at bronchopulmonary diseases.

Results of the research and their discussion

The expert of physical rehabilitation has to establish the rehabilitation diagnosis, respectively for this purpose he needs to conduct the examination of the patient in the clinical activity before starting the implementation of the rehabilitation program [7]. And here it should be noted that the patient comes to the specialist of physical rehabilitation in the conditions of sharp diseases for the direction of the doctor after the establishment of the diagnosis by it [11]. Therefore the rehabilitation examination has to help to find out the localization of the reason of the respiratory problem [13] and functional restrictions to physical rehabilitolog.

Carrying out the detailed analysis of application of the rehabilitation examination for persons with diseases of the musculoskeletal system, A. Hertsik notes three components of examinations, namely: observation, objective and subjective estimations [3].

Concerning the rehabilitation examination of children with bronchopulmonary diseases, it also includes both objective and subjective estimates, and observations which are interconnected among themselves.

The algorithm of the rehabilitation examination of children with bronchopulmonary diseases provides the consecutive application of such methods as: poll, physical examination, functional examination and method of indexes, which analysis allows defining the rehabilitation diagnosis, which is the subsoil of technology of the rehabilitation process (pic).

The poll is the subjective estimation of condition of the patient generally which includes complaints of the patient (main and additional), case history, life story, and existence of associated diseases, quality of life, psycho-emotional condition and addictions of an examined. The objective component of this method of examination is only the definition of passport data. Systematizing the data of the anamnesis of the child with respiratory diseases, it is necessary to pay special attention to the main complaints of the patient (cough, allocation of sputum, short breath, asthma, pain in the site of thorax). However you should not underestimate also the general complaints of the child which are connected with weakness, fatigue and so forth. In general all obtained data during the poll will significantly influence drawing up the program of physical rehabilitation of the child with bronchopulmonary diseases.

The objective tests give information on severity of disease and forecast concerning the function of lungs in addition to usual clinical data (cough, expectoration, frequencies of sharpening, state ofhealth, etc.) [9]. Speaking about objective data of examination, physical methods of the research are used which include the review, palpation, percussion and auscultation at bronchopulmonary diseases immediately [5]. However there is a wish to note that such methods as percussion and auscultation, the specialist in physical rehabilitation uses not on the purpose of the establishment of the clinical diagnosis (the doctor does it), and for the purpose of the definition (understanding) of the reasons which break the function of external breath and for the purpose of the definition of efficiency of the rehabilitation intervention and, if necessary, timely correction of the program of physical rehabilitation.

Carrying out the review of the child with bronchopulmonary diseases, physical rehabilitolog has to pay special attention to the examination of pasture [4; 15], form and symmetry of thorax (as at rest, and at deep breath), participations in the work of auxiliary respiratory muscles and the nature of breath (nasal/oral, free/hard, breath type, breath frequency and so forth). If it is necessary, it is possible to specify its form and movements, and also localization and degree not only pains in thorax, but also to define the existence of painful muscular consolidations, which are very important at the selection of exercises, and in particular respiratory, by the palpation method except the definition of resistance (elasticity) of thorax. And also to define indicators of HR.

The importance is taken away by the functional violation in pathogenesis of bronchopulmonary diseases [6]. Therefore spirometry (both static, and dynamic) which allows to understand better causes of infringement of function of external breath is widely applied, to define how involved reserve opportunities of organism of the child with respiratory diseases are; hypoxic tests, tests with exercise stress which give as the objective assessment of tolerance to exercise stress help to deal with the short breath reasons at exercise stress (e. g., as a result of detraining or factors which are connected with problems of actually respiratory system), and not less important the subjective estimation in the general understanding of functional condition of the child concerning the postponed loading and short breath by the patient in arsenal of physical rehabilitolog from functional tests.

The method of indexes supplements the data of the conducted examination and helps to individualize the program of physical rehabilitation for the specific child.

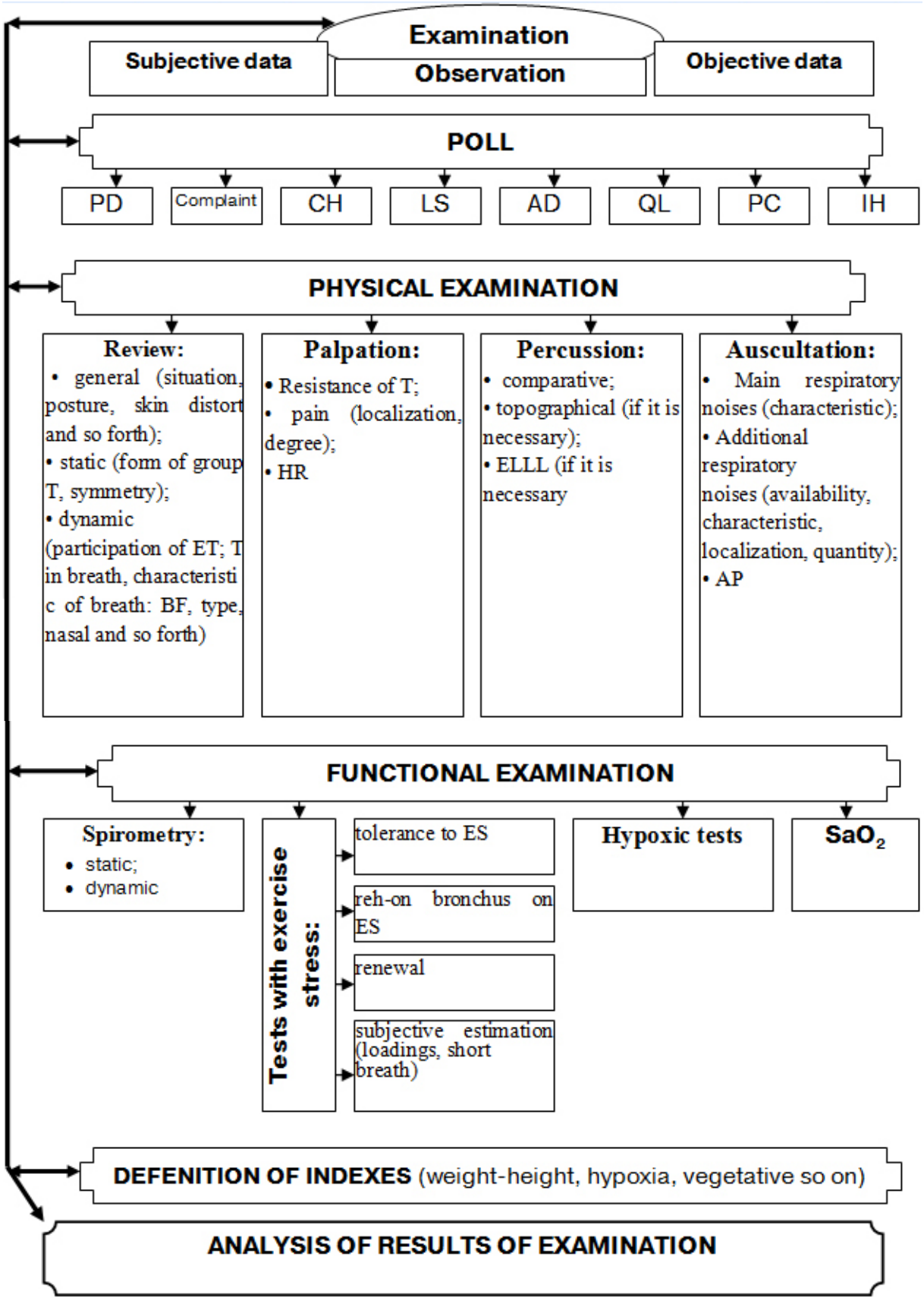
Concerning the observation, it begins with the moment when the rehabilitolog comes into chamber to the patient whether the patient to the hall to rehabilitolog also lasts constantly during the whole process of physical rehabilitation. And there is a wish to pay attention that these polls can sometimes contradict because we can observe (e. g., concerning the assessment of painful muscular consolidations, the patient can underestimate it, e. g., but its movements and mimicry will tell about a real condition).

If the condition of the patient is heavy, then we cannot conduct the whole examination for 1 time (for some patients even the ordinary conversation can you will be wearisome), then we need to correct as appropriate the activity and to come in addition for the purpose of the additional examination of this patient.

Conclusions

Rehabilitation examination is the component of physical rehabilitation which is carried out for the purpose of definition of the rehabilitation diagnosis and is based on the subjective, objective estimations and the data of observation. The consecutive carrying out of the comprehensive rehabilitation examination on the offered algorithm and the detailed analysis of its results will promote the determination of rehabilitation potential, the reasons of violations from different systems of organism and individualization of the rehabilitation process of children with bronchopulmonary diseases.

The prospect of the subsequent researches consists in the development of technology of physical rehabilitation for children with bronchopulmonary diseases.



Pic. Algorithm of examination of children with bronchopulmonary diseases: *PD – passport data; CH – case history; LS – life story; AD – associated diseases; QL – quality of life; PC – psycho-emotional condition; IH – injurious habits; T – thorax; ET – excursion of t; ELLL – excursion of lower lines of lungs; ES – exercise stress; AP – arterial pressure, HR – heart rate; BF – breath frequency; SaO_2 – oxygen saturation.*

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