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Parameters of Quality of Life in Patients with Chronic Obstructive Pulmonary Disease

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Abstract:
The aim of our work was to assess the impact of individual and group training on the autonomic nervous system and quality of life in patients with chronic obstructive pulmonary disease (COPD).

Keywords: quality of life parameters, patients with COPD.

Introduction

For the study, two groups of COPD patients were identified, with whom training sessions were conducted. In group 1, individual training was carried out with 20 patients, in group 2 with 18 patients, group training was conducted, and an educational program was conducted in the pulmonology department of the Research Institute of Phthisiology and Pulmonology. The topics of the classes were: familiarization with COPD, factors for the development of diseases and exacerbation, the fight against smoking, methods of monitoring the condition of patients with COPD and methods of self-control, the basic principles of treatment. Outcomes were assessed at 2 months of autonomic nervous system and quality of life (QoL). QoL was determined using the Seattle Questionnaire, which includes 29 questions assessing physical, emotional, professional fitness, and satisfaction with treatment.

The state of the autonomic nervous system was assessed by cardiointervalography (CIG) according to Baevsky (1976). The obtained data were processed statistically using the Student's test.

The results of the study showed that after 2 months in group 1, 80% of patients continued the prescribed therapy and repeated studies, in group 2, 44.4% of patients. It has been established that training in patients with COPD to a certain extent affects the initial autonomic tone (IVT) (Table 1).

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Changes in Initial Autonomic Tone in COPD Patients Influenced by Individual and Group Training Table 1

IHT Indicators	One-to-one tuition (n=16)		R	Group Learning (n=8)		R
	Initial %	After 2 months		Initial %	After 2 months	
ET	12.5 ± 8.2	43.7 ± 12.4	**<0,05**	25 ± 15.3	25 ± 15.3	-
CT	12.5 ± 8.2	37.5 ± 9.1	**<0,05**	50 ± 17.6	12.5 ± 11.6	**<0,1**
GTS	68.7 ± 11.5	6.25 ± 6.0	**<0,001**	25 ± 15.3	62.5 ± 17.1	**<0,1**
W	6.25 ± 6.0	12.5 ± 8.2	-	-	-	-

Note: ET-eutonia, TS-sympathicotonia, HST-hypersympathicotonia, VT-vagotonia.

As can be seen from the table, the number of patients with initial vegetative status characterized by eutonia and sympathicotonia in the group of patients increased 3.5 and 3 times in 2 months against the background of individual training. Whereas under the influence of group training, the number of eitonia did not change, and sympathicotonia decreased 4 times. The number of patients with hypersympathicotonia in the group of patients undergoing individual training significantly decreased by 10.9 times, amounting to 68.7±11.5% (11 patients) before training, and 6.25±6.0% (1 patient) after 2 months. Under the influence of group training, the number of patients in this group increased by 2.5 times.

The study showed that under the influence of individual training, not only the initial autonomic tone, but also the autonomic reactivity (VR) changed (Table 2).

Changes in autonomic reactivity in COPD patients under the influence of individual and group training Table 2

BP Metrics	One-to-one tuition (n=16)		R	Group Learning (n=8)		R
	Initial %	After 2 months		Initial %	After 2 months	
NVR	18.7± 9.7	37.5 ± 12	**>0,5**	62.5 ± 17	37.5 ± 17.1	**>0,5**
ASTVR	18.7± 9.7	-	-	-	-	-
GSTVR	62.5 ± 12	62.5 ± 12.1	-	37.5 ± 17.1	62.5 ± 17	**>0,5**

Note: NVR is normal autonomic reactivity, ASTVR is asympathicotonic autonomic reactivity, GSTRR is hypersympathetic autonomic reactivity.

Thus, in the group of patients conducting individual training, the number of patients with NVR significantly increased by 2.5 times. At the same time, the number of patients with NVR decreased by 1.5 times in group training. The number of patients with ASTVR, which characterizes the "failure of adaptive capabilities" before training, was 18.7±9.7%, and after 2 months there was none. In group training, there was no training either before or after it. The number of patients with HSTVR, which characterizes the "strain of adaptive capabilities", did not change under the influence of individual training. And in group training, the number of patients increased 1.6 times.

Against the background of individual training, patients with COPD showed a significant improvement in all parameters of QOL (Table 3).

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Changes in quality of life parameters under the influence of individual and group learning (in points) Table 3

Options QoL	One-to-one tuition (n=16)		R	Group Learning (n=8)		R
	Initial %	After 2 months		Initial %	After 2 months	
FS	2.04± 0.14	2.96± 0.09	<0,01	1.98± 0.19	2.28± 0.25	**>0,5**
ES	2.46± 0.18	4.5±0.28	<0,001	2.35±0.47	3.60±0.27	<0,01
PM	2.43± 0.17	4.54± 0.21	<0,001	2.68±0.31	3.31± 0.37	**>0,5**
ST	1.84±0.14	3.75±0.17	<0,001	1.68±0.18	2.62±0.18	<0,01

Note: PS is physical condition, ES is emotional state, PP is professional fitness, UL is satisfaction with treatment.

Thus, in group training of quality-of-life parameters, only emotional state and satisfaction with treatment significantly improved. Physical condition increased by 0.3 points, and in the group individual training was 0.9. Professional suitability for individual training increased by 2.1 points, respectively, with group training - by 0.6 points.

Thus, the education of patients with COPD, especially individual training, significantly affects the initial vegetative tone, and vegetative reactivity, increases the adaptive capabilities of the body. The number of patients with hypersympathicotonia in the group of patients undergoing individual training decreased by 10.9 times. And eutonia increased 3.5 times. Against the background of individual training, patients with COPD showed a significant improvement in all parameters of QOL.

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