



Toshkent tibbiyot akademiyasi Urganch filiali “Jamoat salomatligi va umumiy gigiyena” kafedrasini mudiri, Ibadulla Qochkarovich Abdullayevning 70 yilligiga bag‘ishlangan “Sog‘liqni saqlash tizimida menejmentning zamonaviy muammolari va istiqbollari” mavzusidagi xalqaro ilmiy-amaliy anjuman 2025-yil 20-21 oktabr

STUDYING EXTERNAL RESPIRATORY INDICATORS IN PATIENTS WITH COPD.



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Annotatsiya: Ushbu maqolada OSOK bilan og‘rigan bemorlarda tashqi nafas olish parametrlari bo‘yicha statistik ma‘lumotlar va xalqaro markazlarning ilmiy tadqiqotlari natijalari keltirilgan. OSOK bilan og‘rigan bemorlarni davolash usullari ham ko‘rib chiqiladi.

Kalit so‘zlar: nafas qisilishi, gemoptiz, obstruksiya, bronxial shilliq qavatning shikastlanishi.

Аннотация: В статье представлен статистические данные результатов показателей внешнего дыхания у больных с ХОБЛ и результаты научных исследований международных центров. Также изучены особенности лечения больных ХОБЛ.

Ключевые слова: одышка, кровохарканье, обструкция, повреждение слизистой оболочки бронхов.

Abstract: This article presents statistical data on external respiration parameters in patients with COPD and the results of scientific studies from international centers. Treatment considerations for patients with COPD are also examined.

Key words: dyspnea, hemoptysis, obstruction, bronchial mucosal damage.

Relevance. According to available data, pulmonary hypertension (PH) develops in about 20% of patients with chronic obstructive pulmonary disease (COPD) who have been hospitalised[4,13]. In COPD with severe, pronounced clinical manifestations, PH is observed in more than 50% of cases[1,12]. PH is a multifactorial pathophysiological condition involving vasoconstriction of the pulmonary artery walls, obstructive remodelling, inflammation, biochemical changes, and several other processes[8,10]. Among these, vasoconstriction occurs early in the development of PH, with the pathological activity of potassium channels in smooth muscle cells and endothelial dysfunction being of particular importance[5]. In 1995, the American Thoracic Society recognised COPD as a separate nosological form and suggested conducting objective epidemiological studies in this



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area[3,7]. When describing COPD, one can understand the profound impairment of bronchial conductivity. In COPD, the effects on aortic and sino-carotid zone chemoreceptors due to hypoxaemia caused by chronic heart failure (CHF) lead to tachycardia and hypervolaemia. Hypervolaemia, hypercapnia, and hypoxaemia contribute to an increase in aldosterone levels in the plasma and excessive retention of sodium and water in the body. This results in an increase in cardiac output and disruption of its rheological properties, secondary polycythaemia, increased intrathoracic pressure, and impaired respiratory muscle function, all of which contribute to the development of CHF. According to recent data, CHF developed due to lung diseases or hypoxaemia ranks second in prevalence, following the secondary form of CHF developed due to left heart pathology. Impairment of external respiratory function in OSA is of significant importance and is considered one of the main factors contributing to the exacerbation of pulmonary hypertension[13].

Research objective. Pulmonary function indices were studied in 120 patients suffering from COPD.

Research methods and materials. The study involved 120 patients with a history of COPD from the pulmonology department of VKTTM. The patients were divided into 3 groups: the first group included 60 patients with COPD and pulmonary hypertension, the second group included 60 patients with COPD and severe pulmonary hypertension, and the third control group included 30 healthy individuals. The groups were selected randomly. The study was conducted with informed consent.

Results: The indicators of external respiratory function were studied in the patients included in the study. We analysed the spirometric parameters of the examined patients in 3 groups. The results of the analysis of external respiratory function indicators are presented in Table 1.

Spirometry indicators in patients ($M \pm m$)

Indicators	1st group with OSA + pulmonary hypertension, (n=60)	Group 2 consists of patients with OSAK + pulmonary hypertension, (n=60)	3-3-control group (n=30)	p (1–2)	p (1–3)	p (2–3)
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FEV ₁ , % criterion	49,6 ± 8,4	62,3 ± 9,1	98,2 ± 5,6	<0,01	<0,001	<0,001
FVC, % criterion	72,1 ± 7,8	80,4 ± 8,5	101,5 ± 4,9	<0,05	<0,001	<0,001
FEV ₁ /FVC, %	56,2 ± 6,5	64,7 ± 7,1	82,3 ± 3,8	<0,01	<0,001	<0,001
PEF (л/с)	3,1 ± 0,8	4,2 ± 0,9	6,8 ± 1,1	<0,01	<0,001	<0,001
MEF ₅₀ , %	42,5 ± 6,9	55,6 ± 7,4	92,4 ± 5,2	<0,01	<0,001	<0,001

Conclusion: According to the research results, spirometry indicators differed significantly across all groups. In Group 1 (COPD + pulmonary hypertension), the most severe impairment of respiratory function was observed: FEV₁ was 49.6 ± 8.4%, significantly lower than in Group 2 (p<0.01) and the control group (p<0.001). Specifically, the FEV₁/FVC index in Group 1 was 56.2 ± 6.5%, indicating the severity of ventilatory limitation. In Group 2 (COPD without pulmonary hypertension), the indicators were lower than in the control group but better than in Group 1. For example, PEF was 4.2 ± 0.9 l/s, significantly higher than in Group 1 (p<0.01) but lower than in healthy individuals (p<0.001). In Group 3, all indicators were within the normal range, showing stable superiority



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compared to Groups 1 and 2. These results indicate a severe decline in respiratory function in patients with COPD, especially when pulmonary hypertension is present.

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