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FREQUENCY OF MAJOR BRONCHOPULMONARY DISEASES AMONG MILITARY PERSONNEL

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Abstract: The issue of chronic bronchitis and chronic obstructive pulmonary disease (COPD) is considered one of the most challenging problems in therapeutic practice due to the high prevalence of bronchopulmonary diseases. Chronic nonspecific lung diseases range from 14.8% to 60% and are associated with increased mortality rates. The aim of this study is to analyze the prevalence and structure of major bronchopulmonary diseases among military personnel and improve preventive measures. The study examined cases of community-acquired pneumonia, chronic bronchitis, bronchial asthma, and COPD among military personnel in the Central Military Clinical Hospital. Comprehensive examinations, including general tests, radiography, and spirometry, were conducted. It was found that the prevalence of chronic nonspecific lung diseases and community-acquired pneumonia among military personnel is lower compared to the general population.

Keywords: pneumonia, chronic bronchitis, chronic obstructive pulmonary disease

ЧАСТОТА ОСНОВНЫХ БРОНХОЛЕГОЧНЫХ ЗАБОЛЕВАНИЙ СРЕДИ ВОЕННОСЛУЖАЩИХ

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Аннотация: проблема хронического бронхита и обструктивной болезни легких - одна из наиболее трудноразрешимых проблем в терапевтической практике, связанная с высокой распространенностью бронхолегочных заболеваний - наблюдается от 60% до 14,8% среди хронических неспецифических заболеваний легких, с повышенным уровнем смертности. Цель работы: распространение основных бронхолегочных заболеваний среди военнослужащих, изучение их структуры, совершенствование профилактических мер. В Центральном военном клиническом госпитале были обследованы военные, находящиеся на амбулаторном лечении с заболеваниями хронического бронхита, бронхиальной астмы, хроническими обструктивными заболеваниями легких. Всего были проведены общие анализы крови, рентгенограммы, спирометрия. Заболеваемост хроническими

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неспецифические заболеваниями легких среди военнослужащих и внебольничной пневмонией наблюдалось намного реже в отличии от заболеваемости населения .

Ключевые слова: пневмония, хронический бронхит, хроническое обструктивное заболевание легких.

The issue of chronic bronchitis and chronic obstructive pulmonary disease (COPD) is considered one of the most challenging problems in therapeutic practice. This is due to the high prevalence of bronchopulmonary diseases—among nonspecific chronic lung diseases, they range from 14.8% to 60%—and are associated with an increasing mortality rate (GOLD, 2021). In many cases, the progression of chronic diseases in bronchopulmonary pathology leads to worsening symptoms, making diagnosis more difficult [8; 7].

Despite the high health standards of military personnel and their continuous medical supervision, signs of chronic diseases begin to appear after the age of 40. The late diagnosis of these conditions contributes to an increase in pulmonary and bronchial exacerbations, a rise in disability rates, and higher mortality. At all levels of military medicine, preventive measures should be prioritized in military units and garrison medical facilities.

In the Armed Forces of Uzbekistan, conditions exist to reduce disease rates, improve the sanitary-epidemiological situation, and implement modern diagnostic and preventive measures.

Research Objective: To study the structure and clinical course of respiratory diseases in patients treated at the Central Military Clinical Hospital and to improve preventive measures.

Bronchopulmonary diseases were observed in 67% of cases, with 33% being chronic nonspecific pulmonary and bronchial diseases and 34% consisting of community-acquired pneumonia and acute respiratory diseases. Chronic non-infectious diseases were identified in 33% of military personnel and retirees. Among these diseases, the most common were gastrointestinal diseases (29.4%), pulmonary and bronchial diseases (28.9%), and cardiovascular diseases (8.2%).

Among chronic nonspecific lung diseases, 44% were chronic bronchitis, 35% were bronchial asthma (BA), and 21% were chronic obstructive pulmonary disease (COPD), mainly at the first and second stages. The prevalence of chronic bronchitis among the studied military personnel was 14.3%, which was lower than the 2017 national average—12% in Tashkent city, 8% in Tashkent region, and 17.8% nationwide [2]. The prevalence of COPD among military personnel was 7%, lower than international research findings, where COPD prevalence was 7.95% [1]. In Uzbekistan, the prevalence of COPD ranges from 67 to 168 per 10,000 population [4;3]. According to literature, COPD in Uzbekistan has been recorded at 4.8 cases per 100,000 population [6].

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Among military personnel with chronic nonspecific lung diseases, bronchial asthma accounted for 11.3%, which is lower than the national average of 17.5% [9;5].

This study involved 273 military personnel from the Tashkent Central Military Clinical Hospital, categorized into the following age groups: under 29, 30-39, 40-49, and 50 and above. Due to the small number of 60- and 70-year-olds, they were not classified into a separate group.

Among them, 33% (92) had no lung diseases and were considered relatively healthy military personnel, 34% (92) had pneumonia, and 33% (89) had chronic nonspecific lung diseases (Figure 1).

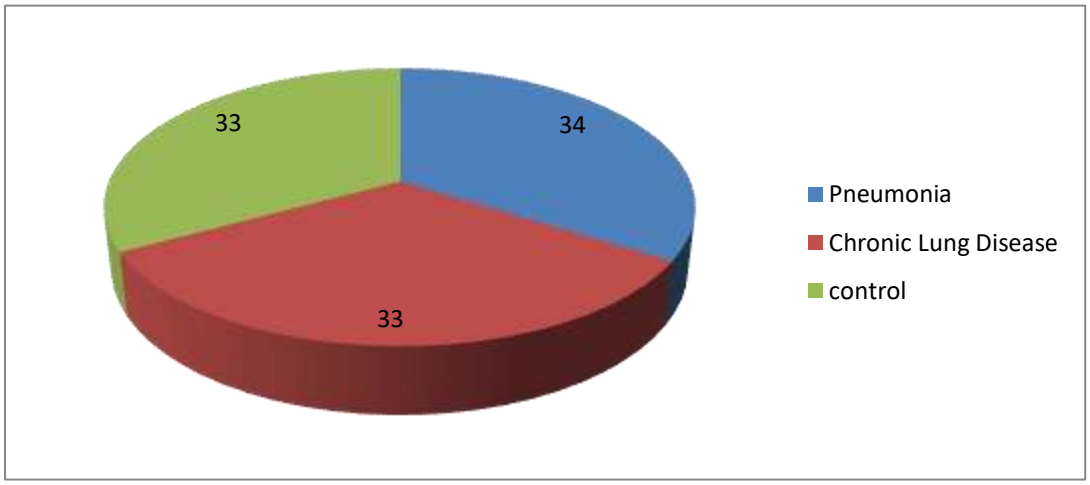

Figure 1. Structure of the Studied Group

The study groups were also classified based on military ranks. As shown in the table, pneumonia was observed in 41.8% of newly enlisted personnel, 31.5% of sergeants, 37.2% of officers, and 20.9% of retirees. The prevalence of chronic nonspecific lung diseases (CNSLD) in these groups was 9.1%, 38.4%, 33.3%, and 44.8%, respectively. However, the significantly higher incidence of pneumonia among newly enlisted personnel—twice as high compared to other military ranks—and the higher prevalence of CNSLD among retirees (44.8%) suggest a correlation between these conditions and the nature of military service or lifestyle ($p<0.01$) (Table 2).

Table 1.

Classification of Study Groups by Military Rank

	Groups			
Ranks	Control N = 92	Pneumonia, N = 92	CNSLD, N = 89	Total: N = 273
new recruits	27 (49,1%)	23 (41,8%)	5 (9,1%)	55 (20,2%)
Sergeants	22 (30,1%)	23 (31,5%)	28 (38,4%)	73 (26,7%)
Officers	29 (37,2%)	23 (29,5%)	26 (33,3%)	78 (28,6%)

Retirees	14 (20,9%)	23 (34,3%)	30 (44,8%)	67 (24,5%)

When viewing the following table as an image, it becomes easier to distinguish the differences.

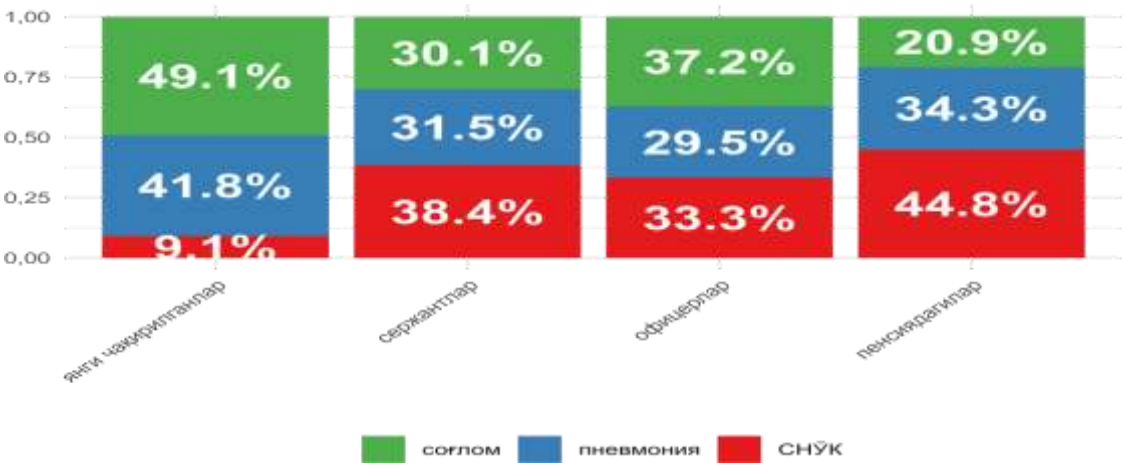

Figure 2. Classification of Study Groups by Military Rank

Table 3.

Classification of Study Groups by Age

Age Groups	control, n = 92	Pneumonia, n = 92	CNSLD, n = 89	Total, n=273	p-value
<29	35 (46,7%)	32 (42,7%)	8 (10,6%)	75(27,5%)	<0,001
30-39	25 (36,8%)	22 (32,3%)	21 (30,9%)	68(24,9%)	
40-49	19 (27,9%)	24 (35,3%)	25 (36,8%)	68(24,9%)	
50+	13 (21,0%)	14 (22,6%)	35 (56,4%)	62(22,7%)	

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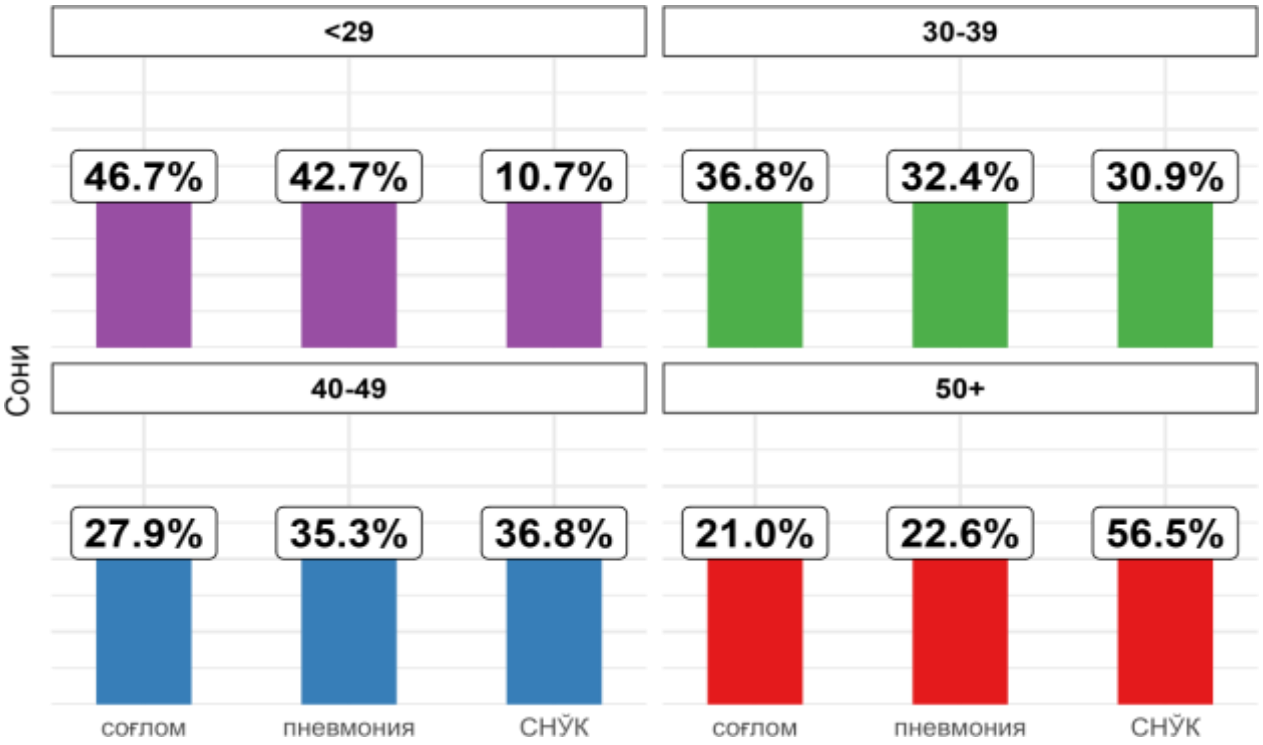
Figure 3.3. Classification of Study Groups by Age



In the military personnel group aged up to 29 years, the pneumonia incidence rate is 34.8%, and the incidence of Chronic Nonspecific Lung Disease (CNSLD) is 29.2%, indicating a similarity between these rates. In the 30-39 and 40-49 age groups, the incidence rates of both diseases remain stable, suggesting no significant differences in these age categories. For the 30-39 age group, the odds ratio (OR) is 1.51, with a 95% confidence interval (CI) ranging from 0.77 to 2.96, showing no significant difference compared to the reference group under 29 years old (p-value = 0.232). In the 40-49 age group, the OR is 2.26 (95% CI: 1.13, 4.59), which is statistically significant (p-value = 0.022). Meanwhile, in the 50+ age group, the OR is 3.30, with a 95% CI ranging from 1.57 to 7.25, which is also statistically significant (p-value = 0.002) and indicates an increased risk of pneumonia.

Therefore, in older age groups, the incidence of CNSLD is higher, while pneumonia rates remain stable up to the age of 50. However, in the 50+ age group, the likelihood of developing pneumonia increases, which may be associated with age-related changes or other contributing factors. When analyzing major bronchopulmonary diseases, it was observed that officers, warrant officers, and retired officers rarely suffer from acute respiratory diseases (3.05%), while pneumonia affects 29-32% of them. This may be attributed to their strong immune systems, regular physical exercise, and preventive measures implemented in military units. Among military

personnel without chronic lung diseases, acute respiratory viral infections (ARVI) occur once a year in 44% of cases, 1-2 times per year in 47% of cases, and 3-4 times per year in 8% of cases.

However, in military personnel with chronic bronchitis, the frequency of acute respiratory infections doubles, occurring in 35%, 48%, and 17% of cases, respectively (p=0.002). Among the general population, this rate is higher, with ARVI occurring in 39.0% of cases (Drozdov I.V., 2004). In conclusion, the prevalence and development of major bronchopulmonary diseases among military personnel are lower compared to the general population.

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