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EPIDEMIOLOGY OF UPPER RESPIRATORY TRACT DISEASES IN THE REPUBLIC OF UZBEKISTAN

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ANNOTATION

A retrospective analysis of the statistical material on the detection of ENT(Ear, Nose, and Throat) pathologies (chronic pharyngitis, rhinopharyngitis, sinusitis, and rhinitis) for 2010-2019, obtained from the Department of Statistics of the Republic of Uzbekistan, was carried out. The analysis results indicated that during 2010-2019, there was an increase in ENT organ pathologies' detection rate by 1.1 times. The largest share of pathologies (1083.5) was noted in the age group 15-17 years old; in the age group 18 years old and older, it decreased by 1.5 times (716.4). The highest value of primary morbidity was noted in 2016 (1.7 times higher than in 2010), and by 2019 - a decrease of 1.3 times. The average values of the total morbidity for the study period were 1175.4 ± 29.6 . By 2019, the overall incidence has been reduced by 0.9 times.

Keywords: Epidemiology of ENT diseases, Rhinosinusitis, Chronic rhinosinusitis, Primary morbidity, General morbidity.

注解

乌兹别克斯坦共和国统计局2010-2019年ENT (Ear, Nose, Throat) 病理 (慢性咽炎、鼻咽炎、鼻窦炎、鼻炎) 检测统计资料的回顾性分析 执行。 分析结果表明, 2010-2019年, 耳鼻喉器官病理检出率提高了1.1倍。 15-17 岁年龄段的病理学比例最大 (1083.5); 在18岁及以上年龄组中, 下降了1.5倍 (716.4)。 原发病率的最高值出现在 2016 年 (比 2010 年高 1.7 倍), 到 2019 年下降了 1.3 倍。 研究期间总发病率的平均值为 1175.4 ± 29.6 。 到2019年, 总体发病率下降了0.9倍。

关键词: 耳鼻喉疾病的流行病学, 鼻窦炎, 慢性鼻窦炎, 原发性发病率, 一般发病率。

INTRODUCTION

Although chronic rhinosinusitis (CRS) is one of the most common chronic diseases in the

population, epidemiological data on the prevalence of this disease are due to the lack of a generally accepted definition of CRS and the variety of diagnostic criteria used (recording only when clinical manifestations of the disease, nasal radiography, and CT) taking into account the results of making a diagnosis based on the conclusion of diagnostic punctures of the affected nasal adjacent cavities) differs from each other [8]. According to the WHO, the upper respiratory tract's purulent-inflammatory diseases account for 70-80% of ENT organs' pathologies [9]. According to A.S. Lopatin (2018), CRS's prevalence has doubled over the last 20 years [6]. According to some scientists, general practitioners, as well as otorhinolaryngologists, did not use the endoscopic examination of the nasal cavity, which was often necessary to confirm the diagnosis of CRS in outpatient admissions, and mainly diagnose CRS based on identified clinical signs, leading to hyperdiagnosis of CRS (1-3,7).

The Aim of The Research

Analysis of the prevalence of diseases of the upper respiratory tract (chronic pharyngitis, rhinopharyngitis, sinusitis, and rhinitis) among the Republic population-based on materials obtained from the Department of Statistics of the Republic of Uzbekistan.

MATERIALS AND METHODS

Retrospective analysis of statistical materials obtained from the Department of Statistics to study the upper respiratory tract's epidemiological indicators (chronic pharyngitis, rhinopharyngitis, sinusitis, and rhinitis) was conducted in the territory of the Republic of Uzbekistan in 2010-2019. Some epidemiological data were collected by copying medical data

from the data. Primary morbidity and prevalence rates were calculated per 100.000 population per year. In calculating the prevalence indicators, all cases of the disease registered in the same year were taken into account, regardless of the initial diagnosis and the time of their occurrence. Data on the population's quantitative composition were obtained from the State Committee for Statistics of the Republic of Uzbekistan. Statistical processing of data was carried out using a practical statistical analysis program MS Excel for Windows XP. It involved calculating the arithmetic mean of the figure and the standard deviation. Assessment of the reliability of the difference in performance was conducted using the Student's parameter criterion. When $R < 0.05$, the differences were considered reliable.

RESULTS

According to the research plan, based on materials first obtained from the Department of Statistics, the incidence of chronic pharyngitis, nasopharyngitis, sinusitis, and rhinitis in 2019 and patients' age structure from this disease were analyzed (Table 1).

Table 1
The age structure of the population of the Republic of Uzbekistan suffering from chronic pharyngitis, pharyngopharyngitis, sinusitis, rhinitis (2019 status)

Age range	Population		Frequency of ENT diseases		
	Abs.	%	Abs.	%	Per 100.000 population
0-14 years old	9.599.917	28,9	81.322	34,1	847,1
15-17	1.517.975	4,6	16.447	6,9	1083,5

year s old					
Ove r 18 year s old	22.137.6 46	66, 5	14.0462	59, 0	634,5
Tota l	33.255.5 38	100	23.8231, 00	100	716,4

The data in Table 1 showed that the contingent under 18 makes up 33.5% of the total population. The prevalence of the studied pathologies averaged 41%, and the prevalence of the disease among children aged 0–14 years was approximately five times higher than among 15–17-year-olds. According to Bachert C. and co-authors (2015), CRS is recognized as a disease affecting approximately 10% of the adult population in industrialized countries (12). According to P.A.Shamkina (2019), the average prevalence of CRS in the world is $11.81 \pm 5.81\%$, the minimum is 1.01% (South Korea), and the maximum is 57.6% (India). In particular, the prevalence of CRS in the Russian Federation ranged from 1.42 to 35%, with an average of $16.42 \pm 10.89\%$. In comparison, in North America, these values ranged from 2 to 16.3% and $9.66 \pm 4.25\%$, respectively, 5.5–9.3% and $7.4 \pm 1.9\%$ in South America, 6–27.1% and $12.56 \pm 4.42\%$ in Europe, 1.01–57 in Southeast Asia, 6% and $6.67 \pm 2.19\%$ (excluding the highest rate in India) (9).

The population of the Republic of Uzbekistan in 2019 was 3.325.5538 people, 238.231 cases of chronic pharyngitis, nasopharyngitis, sinusitis, and rhinitis were detected among the population (81.322 cases in children aged 0-14 years, 16.447 cases in 15-17 years, -14.0462 cases in adults over 18 years). The highest proportion of pathologies detected per 100.000 population (1083.5) was recorded in the 15-17 age group, and a 1.5-fold decrease (716.4) was found in the

18-year-olds, consistent with the data of the authors below (1. picture). In a study of CRS prevalence in Pennsylvania (USA) by A.G.Hirsch and co-authors (2016), this figure averaged 11.9%, with a maximum prevalence between the ages of 50 and 59 (15.9%) and a minimum prevalence of 15.9%. - reported over 69 years of age (6.8%) (15). According to a study in Canada by Y. Chen and co-authors (2003), the prevalence of CRS increased from 3.4% to 5.7% in men (in women). CRS's prevalence was age-related, averaging 2.7% and 6.6% in the 20–29 and 50–59 age groups, respectively. After age 60, the prevalence of CRS decreased to 4.7% (14).

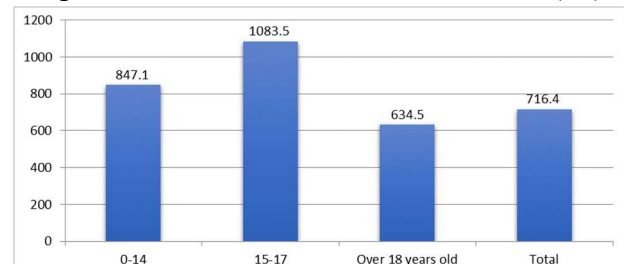


Figure 1. The age structure of patients with chronic pharyngitis, rhinopharyngitis, sinusitis, and rhinitis in Uzbekistan (as of 2019, per 100.000 population)

In 2019, the incidence of primary morbidity with ENT pathologies studied in the Republic of Uzbekistan amounted to 706.4 cases per 100.000 population. The mean incidence over the last five years was found to be 796.8 ± 63.7 . Data on the dynamics of primary morbidity with ENT pathologies studied over the years observed are presented in Figure 2.

The average incidence of primary disease over the ten years (per 100.000 population) was 539.2 ± 12.98 in the first five years (2010-2014) and in the next five years (2015–2019) grew to 796.8 ± 63.69 . During the first five years, there was an uneven distribution of morbidity per 100.000 population from 561.6 to

540.4 cases. Over the next five years (2015-2019), the incidence rate increased from 606.2 to 706.4 per 100.000 population. The mean value of primary morbidity over the ten years studied (667.99 ± 20.7) was found to be 1.2 times slower than the mean value over the last five years (796.8 ± 63.69) ($r < 0.05$).

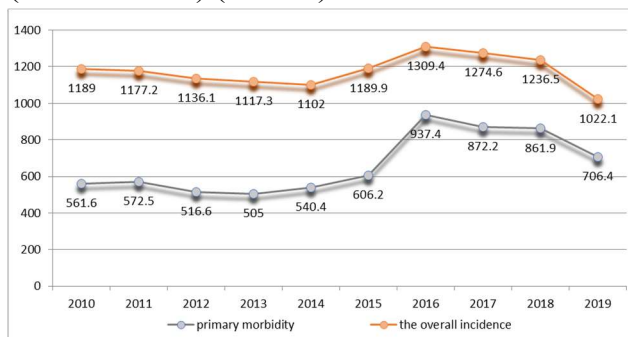


Figure 2. Indicators of primary morbidity and the overall incidence with chronic pharyngitis, nasopharyngitis, sinusitis, rhinitis in the Republic of Uzbekistan (per 100.000 population).

The highest figure for the years studied was recorded in 2016, an increase of 1.7 times compared to 2010 and a decrease of 1.3 times by 2019. It should be noted that the primary morbidity rate in the last ten years (in 2019 compared to 2010) had been found to increase 1.4 times.

Analysis of the overall incidence of chronic pharyngitis, nasopharyngitis, sinusitis, rhinitis in the Republic of Uzbekistan for 2010-2019 showed that these pathologies' dynamics were uneven (Figure 2). In the first five years, the overall morbidity decreased by 0.9 times, averaging 1144.3 ± 16.7 . An increase in the overall morbidity rate from 2015 was observed, and the maximum rate for the years studied was recorded in 2016 (an increase of 1.1 times compared to 2015). In recent years, there has been a decrease in morbidity rates (1.3 times

from 2016 to 2019), with an average of 1206.5 ± 55.3 over the last five years. The average morbidity rate for the ten years studied was $1,175.4 \pm 29.6$, and the morbidity rate in 2019 was found to be 0.9 times lower than in 2010.

A survey of the United States population found that 15.5% of respondents had experienced CRS clinical signs lasting more than three months in the past year (13). Simultaneously, the results of a statistical study conducted based on referrals to physicians note a significantly lower rate: only 2% of applicants were diagnosed with CRS according to the International Classification of Diseases¹⁰ (ICD 10) codes. It is confirmed based on endoscopic examination results, and CT data show that the prevalence of CRS is much lower (4-5, 16-17). In general, according to various studies conducted abroad, the prevalence of CRS varies from 1 to 9.6% and reflects only the proportion of CRS in hospitalized patients (10-11).

The discrepancy between the dynamics observed in primary morbidity, and the dynamics of general morbidity could be attributed to improved diagnostics (and in some cases also to observed hyperdiagnosis) and increased access to timely medical care and pathologies treatment.

CONCLUSION

Thus, based on materials obtained from the Department of Statistics of the Republic of Uzbekistan, a prospective analysis of data on the prevalence of diseases of the upper respiratory tract (chronic pharyngitis, rhinopharyngitis, sinusitis, and rhinitis) among the population of the Republic in 2010-2019 allowed to draw the following conclusions:

1. Chronic pharyngitis, rhinopharyngitis, sinusitis, and rhinitis were detected in 238.231 cases (2019) and amounted to 716.4 cases per

100.000 population. The highest proportion of pathologies (1083.5) was recorded in the 15-17 age group, and a 1.5-fold decrease (716.4) was found in the 18-year-olds.

2. It was found that the average incidence of primary disease for the first five years (2010-2014) increased from 539.2 ± 12.98 to 796.8 ± 63.69 (2015–2019) during the ten years studied. The mean value of primary morbidity (667.99 ± 20.7) was found to be 1.2 times slower than the mean value over the last five years (796.8 ± 63.69) ($p < 0.05$). The highest figure for the years studied was recorded in 2016, an increase of 1.7 times compared to 2010 and a decrease of 1.3 times by 2019. It should be noted that the primary morbidity rate in the last ten years (in 2019 compared to 2010) had increased by 1.4 times.

3. The dynamics of the overall morbidity rate were observed to be uneven. In the first five years, the overall morbidity decreased by 0.9 times, and since 2015, the overall morbidity rate has increased. The maximum rate for the ten years studied was recorded in 2016, and by 2019, the incidence rate had decreased 1.3 times. The average overall morbidity rate for the ten years studied was 1175.4 ± 29.6 , and the morbidity rate in 2019 was found to be 0.9 times lower than in 2010.

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