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ИЗУЧЕНИЕ РАСПРОСТРАНЕННОСТИ ПАТОЛОГИИ СЛИЗИСТОЙ ОБОЛОЧКИ РТА У РАБОТНИКОВ ПРОМЫШЛЕННЫХ ПРЕДПРИЯТИЙ ОСОБОЙ ЭКОНОМИЧЕСКОЙ ЗОНЫ

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Аннотация

Предмет. Заболевания слизистой оболочки рта занимают особое место в структуре стоматологической заболеваемости в связи с особенностями этиологии и патогенеза, склонностью к рецидивам, достаточно высокой степенью малигнизации. До настоящего времени они считаются наименее изученной медицинской и социальной проблемой стоматологии как в нашей стране, так и за ее пределами. **Цель** — оценка распространенности и структуры заболеваний слизистой оболочки рта среди работников особой экономической зоны Республики Татарстан. **Методология.** Для проведения клинического исследования использованы результаты комплексного стоматологического обследования 370 сотрудников особой экономической зоны «Алабуга» (Республика Татарстан, Елабужский район) в возрасте 22–58 лет. Диагностику патологии слизистой оболочки рта с соблюдением онконастороженности проводили методом люминесцентной диагностики с использованием излучателя ОЛДД-01.

Статистический линейный регрессивный анализ данных и интерпретация полученных результатов выполнялись с использованием компьютерного обеспечения IBM и пакета программ SPSS (PASW Statistics 20). **Результаты.** У 18,7 ± 1,2%% обследованных лиц промышленного предприятия в структуре заболеваний слизистой оболочки рта в 8,2% случаев превалировали хроническая трещина красной каймы губ ($p < 0,1$) и ангулярный хейлит ($p < 0,1$), в 2,8% кандидозный стоматит ($p < 0,05$), в 2,5% — десквамативный глоссит ($p < 0,05$), в 2,2% другие формы стоматита ($p < 0,1$), в 1,9% — лейкоплакия ($p < 0,1$). В результате внедрения комплекса лечебно-профилактических мероприятий происходило снижение распространенности поражений слизистой оболочки рта спустя 6 месяцев в среднем в 1,6 раз (12,7%), через 12 месяцев — в 2,7 раз (7,0%) и через 18 месяцев — почти в 4,7 раз (4,2%). **Выводы.** Использование данных, полученных среди работников промышленных предприятий, дает возможность изучить распространенность патологии слизистой оболочки рта, а также спланировать эффективность оказываемых лечебно-профилактических мероприятий. Данное исследование способствует модернизации стоматологической медицинской помощи работникам промышленных предприятий особой экономической зоны.

Ключевые слова: *слизистая оболочка рта, лейкоплакия, кандидоз, хейлит, глоссит, стоматит, особая экономическая зона, онконастороженность, профилактика, диспансеризация*

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STUDY OF THE PREVALENCE OF THE ORAL MUCOSA PATHOLOGY IN WORKERS OF INDUSTRIAL ENTERPRISES OF THE SPECIAL ECONOMIC ZONE

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Annotation

Research subject. Diseases of the oral mucosa occupy a special place in the structure of dental morbidity due to the peculiarities of etiology and pathogenesis, a tendency to relapse, a fairly high degree of malignancy. Currently, they are considered the least studied medical and social problem of dentistry, both in our country and abroad. **The objective is to** assess the prevalence and structure of diseases of the oral mucosa among workers of the special economic zone of the Republic of Tatarstan. **Methodology.** To conduct a clinical study, the results of a comprehensive dental examination of 370 employees of the special economic zone «Alabuga» (Republic of Tatarstan, Yelabuga district) aged 22–58 years were used. The diagnosis of pathology of the oral mucosa in compliance with oncological alertness was carried out by the method of luminescent diagnostics using the OLDD-01 emitter. Statistical linear regression analysis of the data and interpretation of the results obtained were performed using IBM computer software and the SPSS software package (PASW Statistics 20). **Results.** In 18.7 ± 1.2% of the examined persons of the industrial enterprise, in the structure of diseases of the oral mucosa, in 8.2% of cases, chronic fissure of the vermilion border ($p < 0.1$) and angular cheilitis ($p < 0.1$) prevailed, in 2.8% oral thrush ($p < 0.05$), in 2.5% benign migratory glossitis ($p < 0.05$), in 2.2% other forms of stomatitis ($p < 0.1$), in 1.9% leukokeratosis ($p < 0.1$). As a result of the introduction of a complex of therapeutic and preventive measures, the prevalence of lesions of the oral mucosa decreased after 6 months by an average of 1.6 times (12.7%), after 12 months by 2.7 times (7.0%) and after 18 months by almost 4.7 times (4.2%). **Conclusions.** Thus, the use of data obtained among employees of industrial enterprises makes it possible to study the prevalence of pathology of the oral mucosa, as well as to plan the effectiveness of medical and preventive measures provided. The conduct of this study contributes to the modernization of dental medical care for employees of industrial enterprises of the special economic zone.

Keywords: *oral mucosa, leukokeratosis, candidiasis, cheilitis, glossitis, oral thrush, special economic zone, oncological alertness, prevention, medical examination*

The authors declare no conflict of interest.

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Introduction

Dental morbidity is an important problem of dentistry due to its high prevalence, socio-economic aspect, and expensive treatment. Currently, domestic and foreign studies have significantly increased interest in the study of the relationship between dental health and factors affecting their development among workers involved in industrial production. The data presented in the literature show that the high prevalence of dental diseases among this contingent of workers is a problem of many economically developed and especially developing countries. It should be noted that a significant number of industrial workers, the peculiarities of their professional work, socio-economic significance require preferential medical and sanitary services for this category of the population. The authors emphasize the need to develop measures to improve dental care for employees of industrial enterprises.

The analysis of local and foreign literary sources shows that the works devoted to the study of dental diseases among workers of industrial enterprises reveal various aspects of this problem. The prevalence and intensity of major dental diseases in workers of industrial enterprises were studied [4, 6, 8, 9, 11–13].

Pathology of the oral mucosa remains one of the urgent problems of modern dentistry due to the difficulties of diagnosis, the similarity of the clinical picture and the tendency to progression and malignization [5, 10].

Currently, among the workers of industrial enterprises, the issues of determining the prevalence of dental pathology, including the pathology of the oral mucosa, are important [1–3, 7], which determines the relevance and purpose of our study.

The objective is to assess the prevalence of oral mucosal pathology among workers of the special industrial zone «Alabuga» of the Republic of Tatarstan.

Materials and methods. At the initial stage of the study, 370 employees of the SEZ «Alabuga» (Republic of Tatarstan, Yelabuga district) the initial level of prevalence of oral mucosal pathology was studied and analyzed based on the data of the initial examination. To conduct a clinical study, the results of a comprehensive dental examination according to WHO were used. For diagnostic examination of the oral mucosa, luminescent diagnostics using an OLDD-01 emitter was used. A culture study was carried out — a method of laboratory diagnostics for suspected fungal infection.

The second stage included monitoring the effectiveness of the developed and implemented therapeutic and preventive measures carried out during the intermediate control in 6, 12 and 18 months. A model of functioning of a dental office equipped with one workplace of a dentist in the departmental territory of the enterprise is proposed and implemented. The scheme of therapeutic and preventive measures included sanitation of the oral cavity, correction of oral hygiene, the use of antiviral, anti-candidiasis drugs, vitamin therapy, immunomodulatory, desensitizing therapy, applicative agents with keratoplastic, analgesic properties and antiseptics.

Statistical linear regression analysis of the data and interpretation of the results obtained were performed using IBM computer software and the SPSS software package (PASW Statistics 20).

Results and discussion

As a result of the first stage of a comprehensive dental examination of 370 employees of an industrial enterprise of the Republic of Tatarstan – a Special economic zone of industrial and industrial type (SEZ PPT) «Alabuga», pathology of the vermilion border and the pathology of the oral mucosa itself was revealed in 18.4 ± 1.2% of cases.

Pathology of the mucous membrane in the form of a chronic labial fissure (ICD-10 By 13.08 Other unspecified lip diseases) was diagnosed in 4.1% of cases, angular cheilitis (ICD - 10 B37.06) was detected in 4.2% of cases, oral thrush (ICD-1037.0) in 3.8% of cases. Leukoplakia of the oral mucosa (ICD-10 K13.2 Leukokeratosis and other changes in the mucosal epithelium, including the tongue) was initially diagnosed in 2.9% of the examined individuals. The respondents also revealed other forms of stomatitis (ICD-10 K12.1), respectively, 2.9% of cases, which is also not statistically different ($p > 0.1$). Independent diseases of the tongue in the form of desquamative glossitis (ICD-10 To 14.1 Geographical glossitis) occur in 2.5% of cases of clinical observations ($p < 0.05$).

At the next stage, we obtained and statistically processed information about the structure of diseases of the oral mucosa after carrying out a complex of therapeutic and preventive measures. According to the data presented in Table, at the stages there is a dynamic decrease in the prevalence of all previously identified forms of diseases of the oral mucosa.

In the second stage of the study, in a group of employees of the SEZ «Alabuga» enterprises, the effectiveness of the developed and implemented therapeutic and preventive measures carried out at the terms of intermediate control in 6, 12 and 18 months was monitored. A model of functioning of a dental office equipped with one dentist's workplace on the departmental territory of the enterprise was proposed and implemented.

After 12 months, only the incidence of oral thrush decreased statistically significantly at $p < 0.1$, while also at the significance level of $p < 0.1$, the total number of diseases of mucous membrane decreased.

After 18 months, the number of patients with mucous membrane pathology decreased statistically significantly at $p < 0.01$. Despite the non-statistically significant dif-

ferences 18 months after the implementation of the program of therapeutic and preventive measures for certain diseases of the mucous membrane, in total, the decrease in diseases already manifests itself after 12 months (2.7 times, $p < 0.1$) and is fixed after 18 months (3.3 times, $p < 0.05$) (Figure 1).

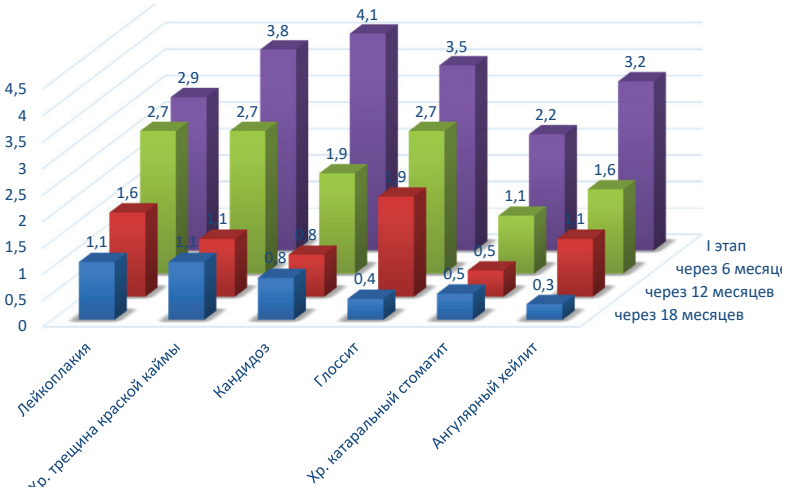

Fig. 1. Dynamics of the frequency of prevalence of pathology of the oral mucosa

Рис. 1. Динамика частоты распространенности патологии слизистой оболочки рта

The preservation of some forms or changes of the oral mucosa may be associated with an increase in the duration of the recovery period, a reduced motivation of the respondents to perform medical procedures independently, and the irregularity of their conduct.

Thus, as a result of the introduction of a complex of therapeutic and preventive measures, the prevalence of lesions of the oral mucosa decreased after 6 months by an average of 1.6 times (12.7%), after 12 months by 2.7 times (7.0%) and after 18 months by almost 4.7 times (4.2%) (Figure 2).

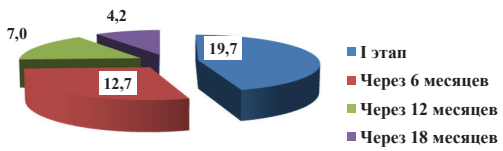

Fig. 2. The frequency of the prevalence of diseases of mucous membrane in the main group

Рис. 2. Частота распространенности заболеваний СОР в основной группе

Table

Dynamics of indicators of the prevalence of pathological conditions of mucous membrane during primary and subsequent examinations

Таблица. **Динамика показателей распространенности патологических состояний СОР при первичном и последующих обследованиях**

Pathological conditions of mucous membrane	*Study group (n = 370)*							
	Stage I		*Stage II*					
	Before therapeutic and preventive measures		*after 6 months.*		*after 12 months.*		*after 18 months.*	
	Total	*%*	*Total*	*%*	*Total*	*%*	*Total*	*%*
Leukokeratosis (flat form) (ICD-10 K13.2 Leukokeratosis and other changes in the epithelium of the mucosa, including the tongue)	7	1,9	10	2,7	6	1,6	5	1,1
p-level according to Mcnimar	-		1,00		0,327		0,207	
Chronic fissure of the vermilion border (ICD-10 By 13.08 Other unspecified lip diseases)	15	4,1	10	2,7	5	1,1	5	1,1
p-level according to Mcnimar			0,534		0,163		0,163	
Oral thrush	14	3,8	7	1,9	3*	0,8	3*	0,8
p-level according to Mcnimar			0,130		0,079		0,079	
Benign migratory glossitis (K 14.1 Geographical glossitis)	9	2,5	10	2,7	7	1,9	4*	0,4
p-level according to Mcnimar			0,672		0,258		0,089	
Other forms of oral thrush (ICD-10 12.1)	8	2,2	4	1,1	2	0,5	2	0,5
p-level according to Mcnimar			0,366		0,112		0,112	
Angular cheilitis (ICD -10 37.06)	15	4,1	6	1,6	4	1,1	3	0,3
p-level according to Mcnimar			0,233		0,017		0,037	
Total	68	18,4	47	12,7	27*	7,3	22*	5,9
p-level according to Mcnimar			0,115		0,07		0,045	

**, ** – the differences are statistically significant at $p < 0.1$ and at $p < 0.05$, respectively*

Conclusion

Analyzing the above data, it should be noted that workers of the special industrial zone «Alabuga» of the Republic of Tatarstan in 8.2% of cases revealed pathology of the vermilion border, in 2.5% of cases anomalies and independent diseases of the tongue, in 7.9% of cases pathology of the mucus membrane ($p < 0.1$, $p < 0.05$), which determines the need of this category of persons for qualified dental care.

Observation of the effectiveness of the developed and implemented therapeutic and preventive measures allowed to reduce the prevalence of pathology of the red border of the lips and the own oral mucosa in the near term of observation (6 and 12 months), respectively 1.6 ($p > 0.1$) and 2.7 ($p < 0.01$) times, in the long term of observation (18 months) in 4.7 times ($p < 0.001$).

Thus, for the early detection of pathology of the vermilion border and the mucus membrane in employees of a special industrial economic zone, it is advisable to create a departmental treatment and prevention office with the involvement of dentists.

Литература/References

1. Березин В.А., Исмагилов О.Р., Старцева Е.Ю. Анализ стоматологического статуса у работников промышленно производственных предприятий (обзор литературы). Уральский медицинский журнал. 2017;9(153):75-81. [V.A. Berezin, O.R. Ismagilov, E.Zu. Startseva. Analysis of dental status in workers of industrial production enterprises (Literature review). Ural Medical Journal. 2017;9(153):75-81. (In Russ.)]. https://elibrary.ru/item.asp?id=30546345
2. Березин К.А., Старцева Е.Ю. Выбор и обоснование возможностей использования иммуногистохимического метода исследований в диагностике ранних проявлений кератотических процессов слизистой оболочки рта (обзор литературы). Уральский медицинский журнал. 2019;1(169):30-33. [K.A. Berezin, E.Yu. Startseva. Choice and substantiation of possibilities of immunohistochemical method of research in diagnostics of early manifestations of keratotic processes of oral mucosa (review of literature). Ural Medical Journal. 2019;1(169):30-33. (In Russ.)]. https://doi.org/10.25694/URMJ.2019.01.36
3. Березин К.А., Шулаев А.В., Березин В.А. Совершенствование организации стоматологической помощи работникам промышленно-производственных предприятий. Клиническая стоматология. 2018;1:92-95. [K.A. Berezin, A.V. Shulaev, V.A. Berezin. Improving the organization of dental care for workers of industrial enterprises. Clinical dentistry. 2018;1:92-95. (In Russ.)]. https://www.elibrary.ru/item.asp?id=32759426
4. Галикеева А.Ш., Бутова В.Г., Вагнер В.Д. Медико-экономический анализ стоматологической помощи работникам, занятым на производстве с вредными и опасными условиями труда. Клиническая стоматология. 2016;3(79):69-71. [A.Sh. Galikeeva, V.G. Butova, V.D. Vagner. Medico-economic analysis of dental care for employed workers in manufacturing with harmful and dangerous working conditions. Clinical dentistry. 2016;3(79):69-71. (In Russ.)]. https://elibrary.ru/item.asp?id=26644608
5. Луцкая И.К., Зиновенко О.Г., Черноштан И.В. Структура заболеваний слизистой оболочки полости рта взрослого населения на стоматологическом приеме. Современная стоматология. 2018;1(70):43-46. [I.K. Lutskaya, O.G. Zinovenko, I.V. Chernoshtan. Structure of oral mucosal diseases of the adult population at dental appointments. Modern stomatology. 2018;1(70):43-46. (In Russ.)]. https://elibrary.ru/item.asp?id=32736394
6. Ризаев Ж.А., Назарова Н.Ш., Кубаев А.С. Особенности течения заболеваний полости рта у работников производства стеклопластиковых конструкций. Вестник науки и образования. 2020;21(99);1:79-82. [Zh.A. Rizaev, N.Sh. Nazarova, A.S. Kubaev. Features of the course of oral diseases workers' of production of fiberglass structures. Bulletin of Science and Education. 2020;21(99);1:79-82. (In Russ.)]. https://doi.org/10.24411/2312-8089-2020-12102
7. Березин К.А., Цыплаков Д.Э., Шулаев А.В., Старцева Е.Ю. Оценка иммуногистохимических изменений тканей периодонта у людей молодого возраста. Морфология. 2018;3(153):40-41. [K.A. Berezin, D.E. Tsyplakov, A.V. Shulayev, Ye.Yu. Startseva. The evaluation of the immunohistochemical changes of the periodontal tissue in the individuals of young age. Morphology. 2018;3(153):40-41. (In Russ.)]. https://elibrary.ru/item.asp?id=35593197
8. Ражабов О.А., Турдиев М.Р., Сохибова З.Р., Замонова Г.Ш. Сравнительная характеристика изменений состояния органов полости рта рабочих и населения до и после проведения оздоровительных мероприятий. Российская стоматология. 2016;9(1):112. [O.A. Razhabov, M.R. Turdiev, Z.R. Sohibova, G.Sh. Zamonova. Comparative characteristics of changes in the oral cavity of workers and the population before and after the health measures. Russian dentistry. 2016;9(1):112. (In Russ.)]. https://elibrary.ru/item.asp?id=26005941
9. Сабитова Р.И., Кабирова М.Ф., Шакиров Д.Ф. Гигиеническое состояние полости рта и уровень гигиенических знаний у работников нефтехимического производства. Проблемы стоматологии. 2016;12(4):23-27. [R.I. Sabitova, M.F. Kabirova, D.F. Shakirov. Hygienic condition of the oral cavity and the level of hygiene knowledge among workers of petrochemical production. Actual problems in dentistry. 2016;12(4):23-27. (In Russ.)]. https://doi.org/10.18481/2077-7566-2016-12-4-23-27
10. Старикова И.В., Дибцева Т.С., Радышевская Т.Н. Анализ обращаемости пациентов с заболеваниями слизистой оболочки полости рта. Актуальные научные исследования в современном мире. 2018;2-3(34):82-85. [I.V. Starikova, T.S. Dibtseva, T.N. Radyshevskaya. Analysis of patients with diseases of the oral mucosa. Current scientific research in the modern world. 2018;2-3(34):82-85. 9In Russ.)]. https://elibrary.ru/item.asp?id=32530597
11. Юсупов З.Я., Дабуров К.Н., Ирсалиев Х.И. Аналитическая оценка стоматологической заболеваемости среди работников предприятий с опасными условиями труда. Вестник Академии медицинских наук Таджикистана. 2019;9:4(32):430-437. [Z.Ya. Yusupov, K.N. Daburov, Kh.I. Irsaliev. Analytical assessment of dental morbidity among employees of enterprises with dangerous working conditions. Academy of Medical Sciences of Tajikistan. 2019;9:4(32):430-437. (In Russ.)]. https://doi.org/10.31712/2221-7355-2019-9-4-430-437
12. Юсупов З.Я., Ашуров Г.Г. Распространенность заболевании слизистой оболочки полости рта у работников алюминиевого производства. Вестник последипломного образования в сфере здравоохранения. 2021;4:94-98. [Z.Ya. Yusupov, G.G. Ashurov. Prevalence diseases of the mucous of oral cavity between workers of the aluminum production. Bulletin of Postgraduate Education in Health Care. 2021;4:94-98. (In Russ.)]. https://elibrary.ru/item.asp?id=48225628
13. Gordeeva A.V., Akhtyamova L.A., Sitdikova I.D. et al. Methodological aspect of forming the system of indicators in medical ecology // Indo american journal of pharmaceutical sciences. – 2018;5(10):10343-10347. https://doi.org/10.5281/zenodo.1467369