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**POPULATION PECULIARITIES IN THE PREVALENCE OF
EAR, THROAT AND NOSE CHRONIC DISEASES
IN RURAL INHABITANTS OF KHAKASIA REPUBLIC.**

V.A.Kishteeva, T.A.Kapustina

State Education Establishment for Professional Training

V.F.Voino-Yasenezkiy's Krasnoyars State Medical University

of Public Health and Social Development Ministry;

State Medical Scientific Research Institute for Northern Problems

of Siberian Division of Russian Academy of Medical Sciences

Introduction

The population research was carried out for different groups, living under the same climatic geographical conditions and made it possible to evaluate the influence of genetic factors upon the peculiarities of functioning of physiological systems in an organism, to reveal predisposition to definite pathology [2, 11]. There are the following factors, which determine intra structure in the population in terms of predisposition to diseases: genotypic, provided by inherited characteristics of a subject, phenotypic, connected to their modulation in ontogenesis process, activities and the influence of environment [1].

At present some detailed research were executed for studying the prevalence of ear, throat and nose diseases in different ethnic groups, inhabiting central Russia, Far East, under moderate and cold conditions of Eastern Siberia [3, 6, 7, 10, 12]. The same research based on ethnic differentiation had not been held for the population of Khakasia Republic. Necessity of region and population approach to studying human health state and pathology is caused by the formation of morphofunctional, psycophysiological and metabolic peculiarities, which are specific for every population under the influence of environmental factors [2, 4].

Availability of true data on morbidity is important for determining the approach to the development of health protection system; evaluation of the efficiency of medical and social events aimed at health protection; planning different types of specialized assistance. Medical aid appealability statistics alone does not give actual pattern for studying the morbidity because such statistics greatly depends upon availability of medical assistance, medical knowledge and activity of population itself and other factors. The aim of the research was to study ethnic

peculiarities of chronic ENT pathology prevalence in Mongoloid and Europoid rural population of Khakasia Republic.

Materials and Methods.

The present research was carried out during 2004 – 2008 years. Subjects were adults in ages from 17 to 70 years. The analysis of chronic ENT pathology prevalence in rural native Khakas and alien Europoid population of Khakasia Republic was carried out after otorhinolaryngological examination for 2 023 subjects. There were 1 376 Europoids of anthropologic type and 647 natives, representatives of Mongoloid anthropologic type.

Otorhinolaryngological examination included questionnaire, collecting complains and medical history, endoscopic examination. We collected information on medical hygienic situation in every residential place. While performing ENT examination we took into account all chronic diseases of ENT organs in accordance with statistical classification for diseases, traumas and death causes (MKB-10). Diagnosis for chronic diseases was carried out according to semiotics of the diseases generally accepted by otorhinolaryngologists. We did audiologic examination to determine the state of hearing function in subjects having: complaints to ear pathology; anamnesis pointing to ear diseases in the past; true signs of middle ear chronic diseases.

The formation of population sample of rural alien Europoid and native inhabitants was carried out by “nest” method. We had chosen the most typical villages in terms of social economic features, medical aid, age/ gender structure. We performed randomized epidemiologic examination for the minimum quantity of subjects chosen by V.I.Paniotto method [5].

The analyzed qualitative variables are represented as comparative frequency with 95% tolerance interval (TI). The estimation of the meaningfulness of differences between relative values was carried out by z-criterion and Fischer criterion.

Research Results and Discussions.

Rural Europoid adults of Khakasia Republic showed higher level of the prevalence of ENT chronic diseases as compared to the inhabitants of other Russian regions with less extreme environmental factors and more favorable economics. In Russian central European part ENT chronic diseases were revealed in 188 - 230 subjects per 1 000 inhabitants [7, 8, 9, 10]. At the same time rural Russian inhabitants of Khakasia Republic ENT diseases were found in 385 subjects per 1 000 inhabitants (in 38.5 %, 95 % TI 35.5 – 38.3). Less frequently ($p=0.002$) ENT

chronic pathology was marked in native Mongoloids (the Khakas) showing the level of 31.5 % (95 % TI 28.0 - 35.1).

Taking into account the finding of two and more ENT chronic diseases in a number of the examined subjects, we can calculate the total of the revealed diseases in the Khakas and Europoids as 250 and 637 cases respectively. In 8 representatives of alien population rare ENT diseases were found such as different tumors, otosclerosis and ENT-organs anomaly. So without these cases we revealed in Europoids 629 subjects with chronic ENT diseases.

Analysis of ENT chronic diseases structure in rural Europoids and natives of Khakasia Republic showed that the disease of nose and paranasal sinuses are the most prevalent (Table 1). The share of pharynx diseases was only slightly less. Third position in both populations belonged to ear and mastoid diseases. Larynx diseases share was insignificantly low in both populations.

Having performed comparative analysis of the prevalence of chronic ENT-diseases in rural inhabitants of Khakasia in accordance with localization of pathology, we found pharynx diseases more frequently ($p=0.06$) in the Europoids, that is in 15.7 % cases (in 216 subjects, 95 % TI 13.8 - 17.7). In 9 of them we diagnosed 2 pharynx diseases in each. In the Khakas chronic pharynx pathology was revealed in 12.5 % of the examined subjects (in 77 patients, 95 % TI 10.1 - 15.2). In 3 representatives of mongoloid population we found 2 diseases of this localization in each.

The frequency of revealing the diseases in nose, paranasal sinuses, ear, mastoid and larynx didn't differ much in Mongoloids and Europoids ($p>0.1$) and approached 13.1 % (95 % TI 10.6 - 15.8) and 15.9 % (95 % TI 14.0 - 17.9), 8.8 % (95 % TI 6.8 - 11.1) and 9.2 % (95 % TI 7.7 - 10.7), 2.8 % (95 % TI 1.7 - 4.2) and 2.3 % (95 % TI 1.5 - 3.1) correspondingly.

In comparison with other chronic ENT diseases we diagnosed more frequently inflammatory pathology of middle ear, pharynx, nose and paranasal sinuses ($p=0.02$) in aliens: in 38.5 % (95 % TI 32.5 - 37.5) against 34 % (95 % TI 26.1 - 33.1) in the Khakas. The combination of several diseases of inflammatory genesis in one or several localizations was met practically with the same frequency ($p=0.9$) in both populations. In Mongoloids and Europoids 5.1 % (95 % TI 3.5 - 6.9) and 5.2 % (95 % TI 4.1 - 6.5) correspondingly.

In aliens the prevalence of pharynx inflammatory diseases differs statistically true ($p=0.05$) from this index in native Mongoloids and amounts to 15.6 % (95 % TI 13.7 - 17.5). In the Khakas we diagnosed pharynx, affected by inflammatory process in 12.4 % subjects (95 % TI 9.9 - 15.0).

Indices of prevalence of the mostly frequently diagnosed separate nosological forms of chronic diseases in ENT-organs are shown in Table 2. We revealed more frequently paranasal sinuses diseases ($p=0.04$), deflection of nasal septum ($p=0.05$) and chronic rhinitis ($p=0.05$)

among chronic pathology of nose in Europoids as compared to natives. Higher prevalence of chronic rhinitis in aliens was caused by increased frequency of catarrhal form, which was diagnosed in 3.0 % cases (95 % TI 2.1 - 3.9) against 1.2 % (95 % TI 0.5 - 2.2) in the Khakas ($p=0.01$).

Also we marked considerable differences in the prevalence of some chronic pharynx diseases, namely chronic tonsillitis. It was marked more often in aliens: in 5.3 % (95 % TI 4.2 - 6.6) against 3.4 % (95 % TI 2.1 - 4.9) in the Khakas.

Leading diseases in terms of prevalence in the examined population were chronic pharyngitis (stands 1-st), chronic sinusitis (stands 2-nd) and chronic rhinitis (stands 3-rd), regardless ethnic belonging.

Conclusion.

So, the prevalence of chronic ENT diseases in rural adult inhabitants of Khakasia Republic regardless their ethnos is higher than the level of chronic ENT morbidity in population of European (central) part of Russia.

The results of the research showed the presence of qualitative and quantitative ethnic factors in the prevalence of chronic ENT pathology in adult inhabitants of Khakasia rural districts. Peculiarities of epidemiology of chronic ENT diseases in the Europoids, sharing ecologic conditions in the same places of residence with native Khakas population are determined by more frequent chronic ENT pathology, including inflammatory, such as rhinitis, sinusitis, deflection of nasal septum and tonsillitis. The same trends were found after comparative analysis of prevalence indices for chronic ENT diseases in the Khakas and the Europoids, urban inhabitants of Khakasia.

The existence of ethnic factors in the prevalence of chronic ENT-pathology is explained by ecological conditions, which affect biological basis in a human and provide different influence upon groups of subjects with different gene sets. Genetic structure determines the peculiarities of the response to the influence of the same environmental factors and causes specific morphofunctional characteristics, including particular features of morbidity.

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Abstract

The article shows the indices of prevalence and structure in chronic otorhinolaryngologic pathology in rural native and alien people of Khakasia Republic. The authors examined 2030. subjects by random. The results of cross-section research revealed high prevalence of the pathology in Ear-Nose-Throat-organs in rural population of the republic irrespective of ethnic belonging. Comparative analysis of prevalence indices corresponding to the Europoids and the Khakass determined the range of ethnic peculiarities in epidemiology of chronic diseases of ear, nose and throat.

Key words: the prevalence, chronic diseases of ear, nose and throat, ethnic peculiarities, the Khakass, the Europoids.

Table 1.

Structure of Chronic Diseases of Ear, Troat and Nose in Rural Inhabitantsof Khakasia Republic.

Group of Diseases	Natives of Khakasia (the Khakas)		Aliens of Khakasia (the Europoids)	
	n	%	n	%
Ear and mastoid diseases	57	22.8	128	20.3
Nose and paranasal sinuses diseases	91	36.4	245	39.0
Pharynx diseases	84	33.6	225	35.8
Larynx diseases	18	7.2	31	4.9
ENT-diseases totally	250	100.0	629	100.0

Table 2.

The prevalence of some nosological forms of chronic ENT pathology in rural inhabitants of Khakasia.

Nosological forms	The Khakas (n=647)		The Europoids (n=1376)		Statistical significancy of the differences
	N	% (95% TI)	n	% (95% TI)	
Ear and mastoid diseases					
Chronic purulent middle otitis	27	4.2 (2.8-5.8)	48	3.5 (2.6-4.5)	0.5
Adhesive middle otitis	12	1.9 (1.0-3.0)	29	2.1 (1.4-2.9)	0.7
Sensorineural hearing loss	14	2.2 (1.2-3.4)	31	2.3 (1.5-3.1)	0.9
Nose and paranasal sinuses diseases					
Chronic rhinitis	40	6.2 (4.5-8.2)	97	7.1 (5.8-8.5)	0.05
Chronic sinusitis	42	6.5 (4.7-8.5)	125	9.1 (7.6-10.7)	0.04
Deflection of nasal septum	7	1.1 (0.4-2.0)	31	2.3 (1.5-3.1)	0.05
Pharynx and larynx diseases					
Chronic tonsillitis	22	3.4 (2.1-4.9)	73	5.3 (4.2-6.6)	0.05
Chronic pharyngitis	61	9.4 (7.3-11.8)	150	10.9 (9.3-12.6)	0.3
Chronic laryngitis	18	2.8 (1.7-4.2)	31	2.3 (1.5-3.1)	0.5

Notes: statistical significancy of the differences was determined by the Fischer's exact criterion.

Kishteeva Valentina Alekseevna – doctor otorrhino laryngologist of State Public Health Establishment “G.Y.Remishevskaya’s Republican Hospital of Khakasia”.

Kapustina Tatiana Anatolievna, full professor, leading scientist of Department for Ecology associated Pathology of State Medical Scientific Research Institute for Northern Problems of Siberian Division of Russian Academy of Medical Sciences.

Contact for correspondence:

Mrs. KAPUSTINA Tatiana Anatolievna,

Russia, 660017, Krasnoyarsk, ul.Dubrovinskogo, dom 106, kv. 193

Office tel. +7 (391) 228 06 58

Home tel. +7 (391) 227-50-39.

E-mail: TAK34@yandex.ru (home) and E-mail: rsimprn@scn.ru (office).

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