American Journal of Interdisciplinary Research and Development
ISSN Online: 2771-8948
Website: www.ajird.journalspark.org
Volume 07, Aug., 2022

ASSESSMENT OF THE PREVALENCE OF INFLAMMATORY DISEASES OF THE HARD AND SOFT TISSUES OF THE ORAL CAVITY IN CONTACT SPORT ATHLETES

Daminova N. R.
Tashkent State Dental Institute, Tashkent Uzbekistan

Makhkamova O. A.
Tashkent State Dental Institute, Tashkent Uzbekistan

Abstract
The purpose of this study was to study the relationship between oral diseases and functional disorders of the body of athletes engaged in contact sports against the background of intensive physical training. 64 professional athletes of various levels of fitness engaged in contact (wrestling, boxing) sports in the pre-competitive and competitive periods of the training process at the age of 16-24 years with a duration of sports experience - 2-5 years and 14 practically healthy persons not engaged in sports of the highest achievements were examined. The dental status was studied and a survey of all study participants was conducted using a developed specialized card and data were obtained on sports injuries of the maxillofacial region, as well as on the experience of using protective sports mouthguards. The highest prevalence of inflammatory diseases of the hard and soft tissues of the oral cavity was detected in representatives of contact sports such as boxing.

Keywords: sports dentistry, prevention of injuries and diseases of the dental system of contact sports.

Introduction

Today, in practical medicine, it is becoming an integral part of medical and hygienic programs to optimize therapeutic and preventive measures and all medical control in high-performance sports. At the same time, it is very important to note the fact of the growing popularity of various power and contact sports activities, and the increase in the frequency of injuries of the musculoskeletal system and the maxillofacial region for this reason (1,2,3,4). According to many experts in the field of sports medicine, the functional state of various body systems, including organs and tissues of the oral cavity, as the most important element and indicator of the overall health of professional athletes, should be accepted as a standard for participation in responsible and major international competitions (5,6,7,8). The purpose of this study was to study the relationship between oral diseases and functional disorders of the body of athletes engaged in contact sports against the background of intensive physical training.

Material and Methods of Research

In the period from 2017 to 2018, a dental examination was conducted of 64 professional athletes of various levels of fitness engaged in contact (wrestling, boxing) sports in the pre-competitive and competitive periods of the training process at the age of 16-24 years with a duration of sports experience - 2-5 years and 14 practically healthy persons not engaged in sports of the highest achievements. At the first stage of the study, a survey was conducted of all study participants using a developed specialized card and data were obtained on sports injuries of the maxillofacial region, as well as on the experience of using protective sports mouthguards. At the second stage of the study, the dental status of the examined highly qualified athletes was determined, the prevalence and intensity of major dental diseases, caries, non-carious lesions, inflammatory periodontal diseases, oral mucosa and lips were studied. The assessment of the dental status, prevalence and intensity of inflammatory periodontal diseases was carried out using WHO methods and criteria, or rather using the index of need for treatment of periodontal diseases - CPITN, 1980.

The results of the study were processed by the method of variation statistics. To characterize a group of homogeneous units, their arithmetic averages (M) and its standard error (m) were determined. The statistical difference between the groups was considered reliable at a value of $p<0.05$. Statistical processing of the obtained data was carried out on a personal computer using modern software and the Statistica 7.0 application software package.

Research Results and their Discussion

Clinical and epidemiological studies to identify the level of prevalence and intensity of inflammatory periodontal diseases among professional boxers revealed an increase in the frequency of pathological processes of an inflammatory and destructive nature in soft parotid tissues as the intensity and duration of the training process increase, that is, in the pre-competition period (Table 1).

Table 1. Frequency of periodontal diseases among professional boxers (CPITN index)

Age	Number of examined	Average number of sextants				
		Healthy periodontal	Bleeding	Dental stone	Periodontal pockets	
					4-5 mm	6 mm or more
16-19	34	0,72 ± 0,06	1,39 ± 0,12	1,48 ± 0,13	1,05 ± 0,09	0,33 ± 0,02
20-24	30	0,14 ± 0,01*	0,42 ± 0,04*	2,26 ± 0,14*	1,60 ± 0,14*	0,66 ± 0,05*

Note : *- the reliability of differences between age groups $P< 0.05$

Thus, the number of sextants with healthy periodontal disease began to decrease markedly with an increase in the level of skill and age of athletes and against the background of intensive physical training was less in the age group of 20-24 years - 0.14 ± 0.01. In this age group, on the contrary, the number of sextants with bleeding

and hard dental deposits increased, the indicators for which were 0.42 ± 0.04 and 2.26 ± 0.14, respectively. In terms of the number of pathological periodontal pockets, comparatively smaller values were recorded compared to the previous observation group. The maximum data on the structural elements of the studied index, reflecting the clinical manifestations of inflammatory diseases of periodontal tissues of moderate and severe degree, were revealed in the oldest age group of boxers.

Our studies have shown that the prevalence of caries and non-carious dental lesions in qualified athletes turned out to be higher than in people who do not play sports professionally. Among 64 athletes, the average number of subjects subject to dental hypoplasia in the youngest age group was 4.93 ± 1.76%, while in the older age group the indicators were significantly lower and were determined at 2.51 ± 1.25% (Table 2).

Table 2 Prevalence of non-carious dental lesions among boxers
(in % of the number of examined; M±m)

Age (years)	Number examination of bathrooms	Prevalence					
		fluorosis		hypoplasia		in total	
		abc.	%	abc.	%	abc.	%
16-19	34	4	3,66 ± 0,15	5	4,93 ± 0,76	9	8,59 ± 0,94
20-24	30	5	2,69 ± 0,31*	6	2,51 ± 0,25*	11	5,20 ± 0,67*

Note:*- the reliability of differences between age groups P< 0.05

Low indicators of the prevalence and intensity of dental fluorosis among the examined boxers in all age groups indicated normal indicators of the quantitative content of fluoride in drinking water in the regions of their permanent residence and professional activity. Therefore, among the athletes involved in the research, dental fluorosis is detected in almost very rare cases. For example, those in the first age group turned out to be an average of 3.66 ± 2.15% for all surveyed. Slightly more hypoplasia of teeth was detected in this group. Since both pathologies under study relate to non-carious lesions of the teeth and are caused by a violation of the formation of tooth enamel under the influence of exogenous and endogenous factors, we found it possible to investigate both factors simultaneously. As a result, on average, 5.20 ± 0.67% of boxers suffer from the above pathologies for all examined professional athletes.

Taking into account the specifics of the training process and mainly oral breathing during prolonged physical exertion, a study was conducted on the condition and frequency of prevalence of diseases of the mucous membrane of the oral cavity and lips among boxers (Table 3).

American Journal of Interdisciplinary Research and Development
ISSN Online: 2771-8948
Website: www.ajird.journalspark.org
Volume 07, Aug., 2022

Table 3. Age-related indicators of the prevalence of cheilitis in professional boxers

Age (years)	Number of examined	The prevalence of cheilitis	
		abc	%
16-19	34	14	42,54 ± 3,14
20-24	30	7	23,68 ± 3,71

On average, lip lesions, that is, cheilitis, were registered in every third athlete in the oldest age group and almost every second representative of professional boxing of youth age - 23.68 ± 3.71% and 42.54 ± 3.14%, respectively, for all age groups of athletes examined. Their lowest frequency occurred in the age group of 20-24 years, which, in our opinion, is due to the still insufficient level of adaptation of the body to intense and prolonged physical and psycho-emotional stress. In the course of clinical studies, in order to identify the relationship between violations of dental status and the orientation of the training process, a statistical analysis of the corresponding indicators was carried out in representatives of freestyle and classical types of wrestling - 20; professional boxers 64 and persons who made up the control group - 14.

When analyzing the prevalence of pathological changes in the tissues and organs of the oral cavity among professional athletes engaged in various sports, it was found that anomalies of the development of dentoalveolar anomaly (ZFA) were more often diagnosed in persons engaged in professional boxing - 72.1 ± 5.61% of cases. And in the same group, the maximum values for the frequency of occurrence of multiple dental caries and its complications were recorded - 52.5 ± 4.53% of cases (Table 4).

Table 4 The frequency of occurrence of major dental diseases and ZFA in representatives of different sports

Types of sports	Frequency of detection of dental diseases					
	caries		ZFA		periodontitis	
	abc	%	abc	%	abc	%
Fighting	20	48,0 ±3,76*	5	39,5 ±2,95*	15	67,5 ± 4,89*
Box	16	52,5 ±4,53*	30	72,1 ± 5,61*	18	72,0 ± 5,68*
Control	4	15,0 ± 1,64	3	9,51 ± 0,87	5	17,2 ± 1,64

Note *- the reliability of the differences relative to the control P< 0.05

According to the results of our clinical studies and diagnostics of the degree of development of the pathological process in periodontal tissues in all groups of athletes, compared with the control group, a high level of chronic generalized periodontitis of mild severity and chronic catarrhal gingivitis was determined. Thus, according to clinical observations and index evaluation, the average incidence of periodontal diseases in the examined contingent of athletes-boxers was 72.0 ± 5.68%, which was

markedly different from the indicators in the control group of 17.2 ± 1.64%. A healthy periodontal disease in the group of athletes was much less common.

In a comparative assessment of the results obtained, inflammatory changes in the parotid tissues were most often detected in freestyle wrestlers 67.5 ± 4.89%, respectively ($p<0.05$). The next place in terms of the prevalence of generalized forms of periodontitis and gingivitis was occupied by professional boxers using protective dental mouthguards in their sports activities.

Conclusions

The highest prevalence of inflammatory diseases of the hard and soft tissues of the oral cavity was detected in representatives of contact sports such as boxing.

References

1. Orekhova L.Yu. Possibilities of psychological diagnostics of the influence of chronic psychophysical stress on the occurrence of inflammatory periodontal diseases in athletes / L.Yu. Orekhova, I.N. Antonova, N.N. Rozanov [et al.] // Scientific notes. - 2005. - T XII, No. 2. - pp. 21-23
2. Ponomareva A.G. Saliva active acidity index as an integral indicator of psychoemotional and psychosomatic health in athletes / A.G. Ponomareva, E.Y. Poltavskaya // Dentist. - 2012. - No. 2. - pp. 3-9.
3. Statsenko E.A. Disease prevention and correction of the functional state of highly qualified athletes in the conditions of the training process / E.A. Statsenko. - Minsk: Smeltok, 2013. - 210 p.
4. Yagudin R.H. Dental morbidity of Olympic reserve athletes and ways to reduce it / R.H. Yagudin, Zh.I. Kuzmina, L.R. Mukhamedzhanova // Practical medicine. - 2013. - T 1, No. 1-2 (69). - pp. 148-151.
5. Araceli B. Cardiovascular Adaptation, Functional Capacity, and Angiotensin-Converting Enzyme I/D Polymorphism in Elite Athletes / B. Araceli // Rev Esp Cardiol. - 2010. - № 63 (7). - P 810-819.
6. Ozbay G. Incidence and prevention of traumatic injuries in pediatric handball players in Istanbul, Turkey / G. Ozbay, M. Bakkal, Z. Abbasoglu [et al.] // Eur. Arch. Paediatr. Dent. - 2013. - Vol. 14, № 1. - P 41-45.
7. Sant'Anna G.R. Sports dentistry: buccal and salivary profile of a female soccer team / G.R. Sant'Anna, M.R. Simionato, M.E. Suzuki // Quintessence Int. - 2004. - Vol. 35, № 8. - P 649.
8. Shephard R.J. Special feature for the Olympics: effects of exercise on the immune system: overview of the epidemiology of exercise immunology / R.J. Shephard // Immunol. Cell. Biol. - 2000. - Vol. 78, № 5. - P 485-495.