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ORIGINAL ARTICLE

EPIDEMIOLOGICAL SITUATION OF PRE-CANCER DISEASES OF THE ORAL MUCOUS IN UKRAINE

DOI: 10.36740/WLek202206105

Yulia G. Kolenko, Tetiana O. Timokhina, Olesya V. Lynovytska, Konstantin O. Mialkivskyi, Nina S. Khrol

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ABSTRACT

The aim: To conduct a prospective clinical study to assess the prevalence, structure, risk factors and features of clinical manifestations of precancerous diseases of oral mucosa and red lip in Kyiv residents and to analyze opportunities to improve the quality of their primary diagnosis.

Materials and methods: The examination of 423 patients with precancerous diseases of oral mucosa and red lip included clarification of the main complaints and anamnesis of the disease, objective assessment of the state of oral mucosa and red border of the lips according to visual, stomatoscopic, luminescent analysis, cyto-, histological studies.

Results: Attention is drawn to the prevalence among precancerous diseases of patients with leukoplakia - 41.37% and lichen planus - 44.21%. The levels of detection of precancerous diseases of the oral mucosa due to the current and preliminary history for individual nosological forms are almost identical, which indicates the reliability of the above indicators.

Conclusions: Promotion between the people about timely dental treatment for precancerous diseases of the oral mucosa and the use of radical technologies in their treatment will not only increase the effectiveness of treatment, but significantly limit the malignancy of these diseases.

KEY WORDS: oral mucosa, red border of the lips, precancerous diseases, primary diagnosis

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INTRODUCTION

The fight against malignant neoplasms is currently not only one of the most important problems of medicine, but also a very topical issue of the social life of society, since among the causes of death of the population in industrialized countries, malignant neoplasms occupy the 2nd–3rd place [1, 2].

Oral mucosal (OM) cancer accounts for 40% of all head and neck variations cancers [3] and 1–3.5% of all malignant tumors, and takes second place after laryngeal cancer [3, 4]. Latest figures show that around 6,000 new cases of mouth cancer a year are diagnosed in the Ukraine, 360 to 400 of which in Kyiv.

The standardized incidence rate per 100,000 population in Ukraine in 2007 was 2.7, including 2.4 in Kyiv. At first glance, the incidence rate is relatively low. At the same time, over the past 15 years, the number of patients with OM tumors has more than doubled, and exceeding 5–7 cases per 100,000 population [5]. However, it should be taken into account that in most patients, cancer of the oral mucosa and otolaryngeal region is diagnostic on late stages - for example, cancer of the oral mucosa, according to some reports diagnostic on late stage in more than 70% of cases. Such late diagnosis, as a rule, requires treatment in the form of complex traumatic surgical interventions, the results of which remain unsatisfactory, since the incidence and mortality from malignant neoplasms of the oral mucosa have a steady upward trend [6, 7].

Therefore, the actual task of dentistry is to increase the effectiveness of measures for the prevention and early di-

agnosis of cancer of the oral mucosa. In particular, early detection and adequate treatment of diseases such as benign tumors and precancerous diseases of the oral cavity are central [8; 9].

THE AIM

The main objective of the study is to conduct a prospective clinical study to assess the prevalence, structure, risk factors and features of clinical manifestations of precancerous diseases of OM and red lip in Kyiv residents and to analyze opportunities to improve the quality of their primary diagnosis.

MATERIALS AND METHODS

In the period from 2015 to 2020 on the basis of the Department of Therapeutic Dentistry of the National Medical University named after O.O. Bogomolets conducted a comprehensive dental examination and treatment of 423 patients aged 20 to 87 years with precancerous diseases of OMC and red lip.

The clinical examination of OM was performed in accordance with WHO recommendations (Kraemer J.R. et al., 1980). The examination included clarification of the main complaints and anamnesis of the disease, objective assessment of the state of OM and red border of the lips according to visual, stomatoscopic, luminescent analysis, cyto-, histological studies.

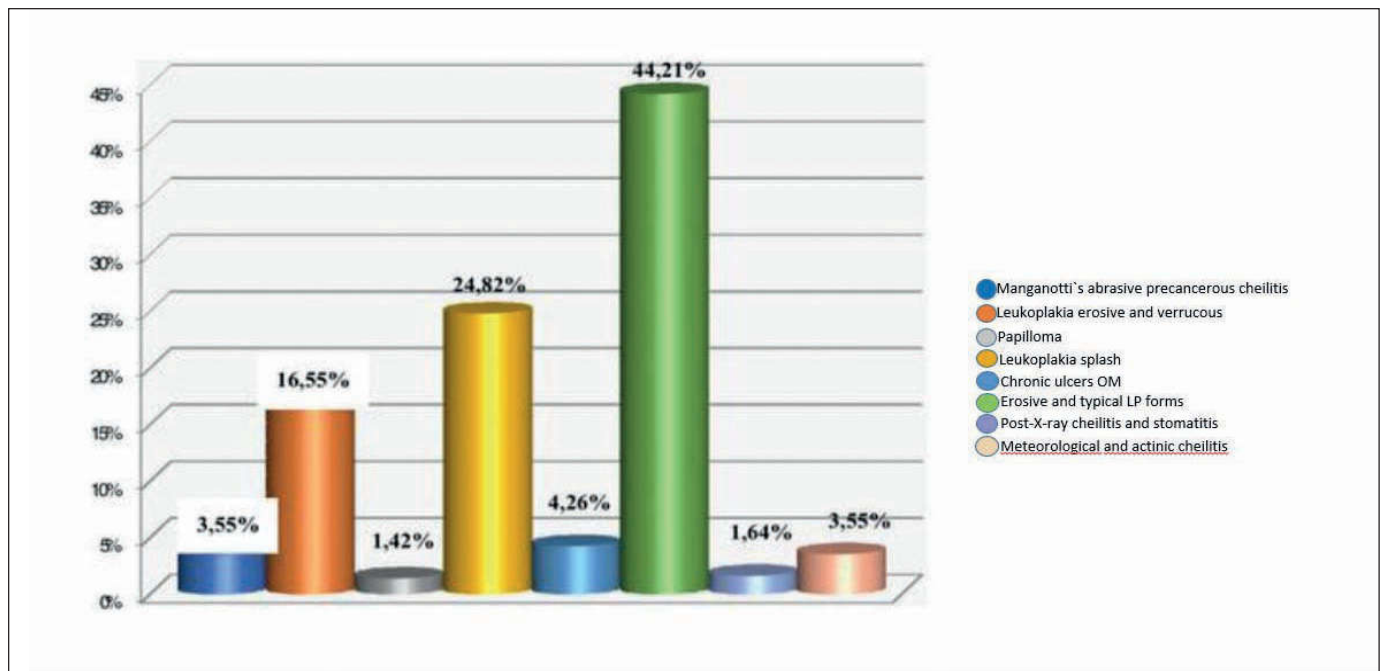


Fig. 1. The frequency of manifestation of precancerous lesions of the oral mucosa

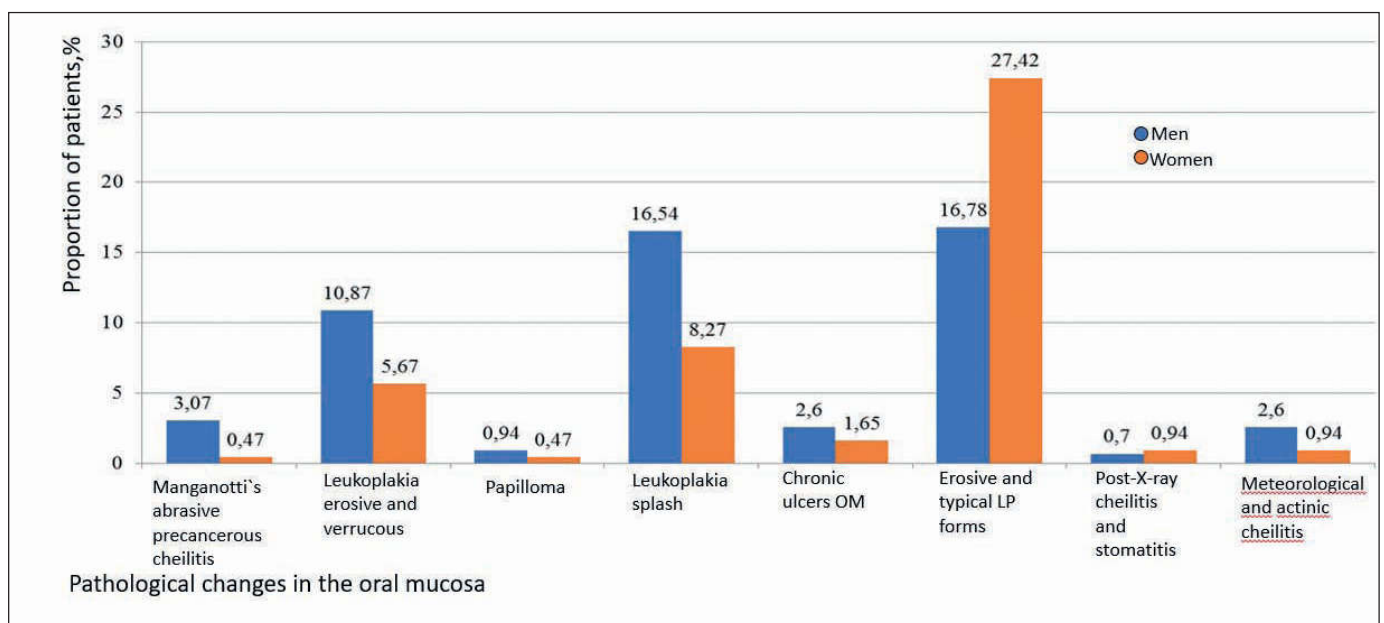


Fig. 2. Distribution of patients with precancerous diseases of oral mucosa by sex

The assessment of the quality of the primary diagnosis of the disease of oral mucosa was carried out by dropping a dental patient from the case histories, referrals from dentists and/or internists, and anamnesis data. Were determined the level (I-IV) of the primary diagnosis of the disease (B. Bates et al., 1997) and completeness of the formulation of the clinical diagnosis, that reflecting the whole variety of diseases of the oral cavity, maxillofacial area and dental diseases that were detected in the patient; was calculated the percentage of under examined patients, cases of overdiagnosis and direct diagnostic errors. Were analyzed the answers from the questionnaires with following blocks of questions: dental turnover, adherence to treatment and attitude to dental care; clinical manifestations of precancerous diseases of oral mucosa; the presence and

types of orthopedic structures in the oral cavity; food texture and temperature; nature of brushing teeth; bad habits; the level of knowledge on the prevention of dental diseases.

The results of the study were processed by the method of variation statistics using the indicator by the method of Fisher's angular transformation.

RESULTS

Residents of Kyiv city prevailed (79.5%) among the surveyed, 20.5% of patients lived in different regions of Ukraine. Public dentists (45.5%) or private (23.9%) dental clinics (offices) and specialists from medical institutions (15.3%) were sent for consultations with patients; 15.3% of

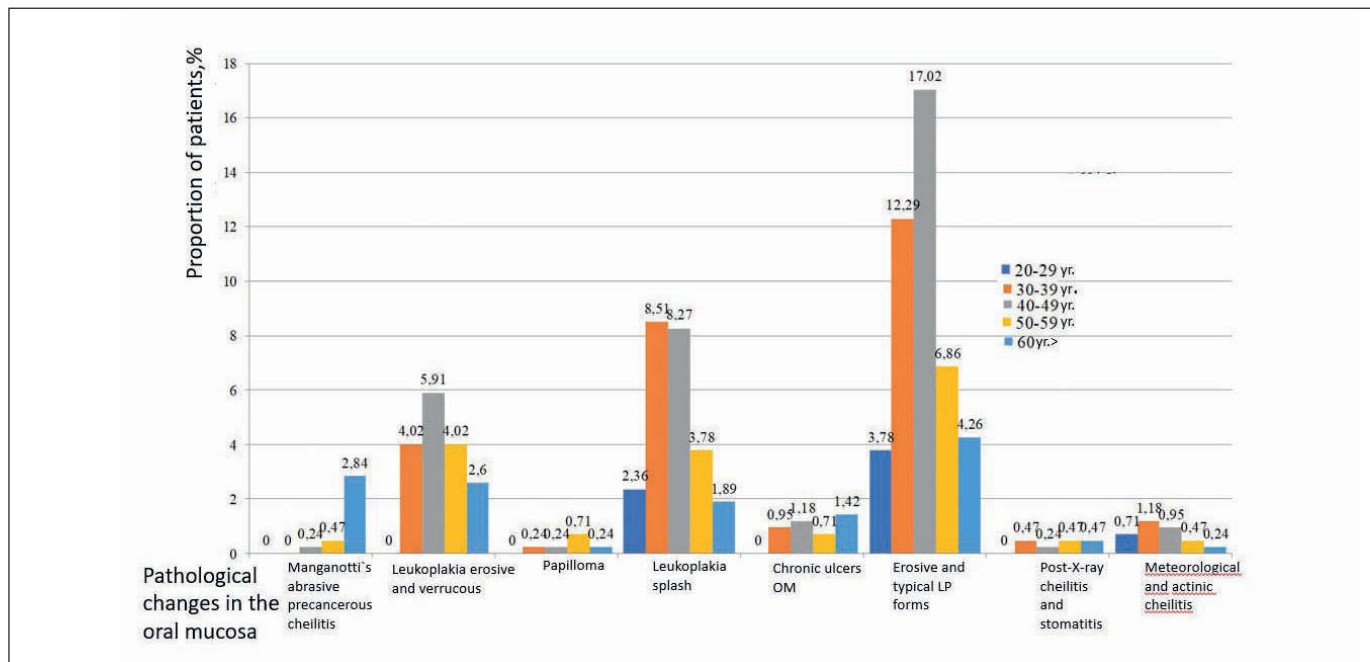


Fig. 3. Distribution of patients with precancerous diseases of oral mucosa by age

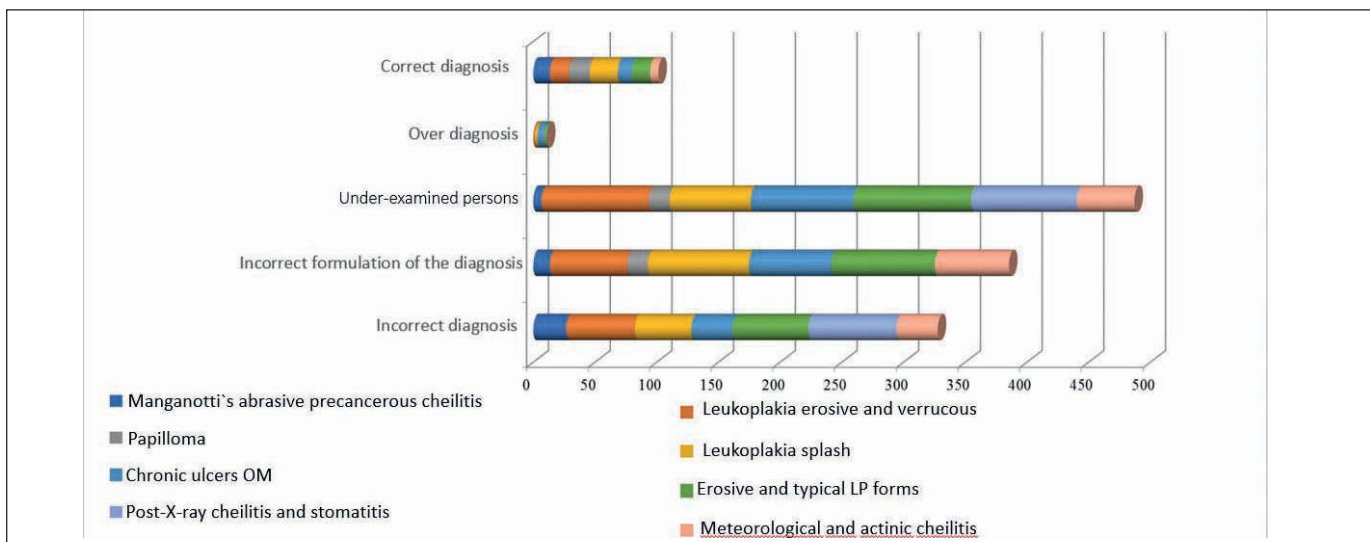


Fig. 4. Indicators that characterizing the level of diagnosis of precancerous diseases of the oral mucosa in dental institutions that referred patients for consultation

patients independently applied for medical and advisory assistance.

The structure and prevalence of precancerous diseases of the oral mucosa, identified as a result of a comprehensive examination of 423 patients, was as follows: erosive and hyperkeratotic (typical) forms of lichen planus - in 187 patients (44.21%), a flat form of leukoplakia - in 105 patients (24.82), erosive and warty (verrucous) leukoplakia - in 70 patients (16.55%), chronic mucosal ulcers - in 18 patients (4.26%), Manganotti's abrasive precancerous cheilitis - in 15 patients (3.55%), meteorological and actinic cheilitis - in 15 patients (3.55%), post-X-ray cheilitis and stomatitis - in 7 patients (1.64%), papilloma - in 6 patients (1.42%) (Fig. 1). 20 patients (4.51%) were diagnosed with OM cancer.

Prevalence of precancerous diseases of the oral mucosa averages 29.2±1.0%. These diseases have an adverse effect

on the dental status of urban residents. In particular, without causing any particular concern, OM diseases had a mild course in 118 out of 423 respondents (28.4 ± 1.8%). They did not seek dental care and self-treated with various dental rinses. In the remaining 305 surveyed diseases, OM had a course in clinical forms, accompanied by various ailments (soreness, mucosal roughness, dryness, etc.), difficulty in chewing food, difficulties in maintaining oral hygiene, and a long course of diseases (up to 14 days). All respondents applied for dental care, but, as a rule, it was already too late. This is probably why 224 out of 423 respondents (52.7 ± 2.4%) were dissatisfied with the quality and effectiveness of their treatment, since subsequently they experienced relapses of the OM, or the formation of new foci in other parts of the mucosa. This led to repeated dental visits and disability.

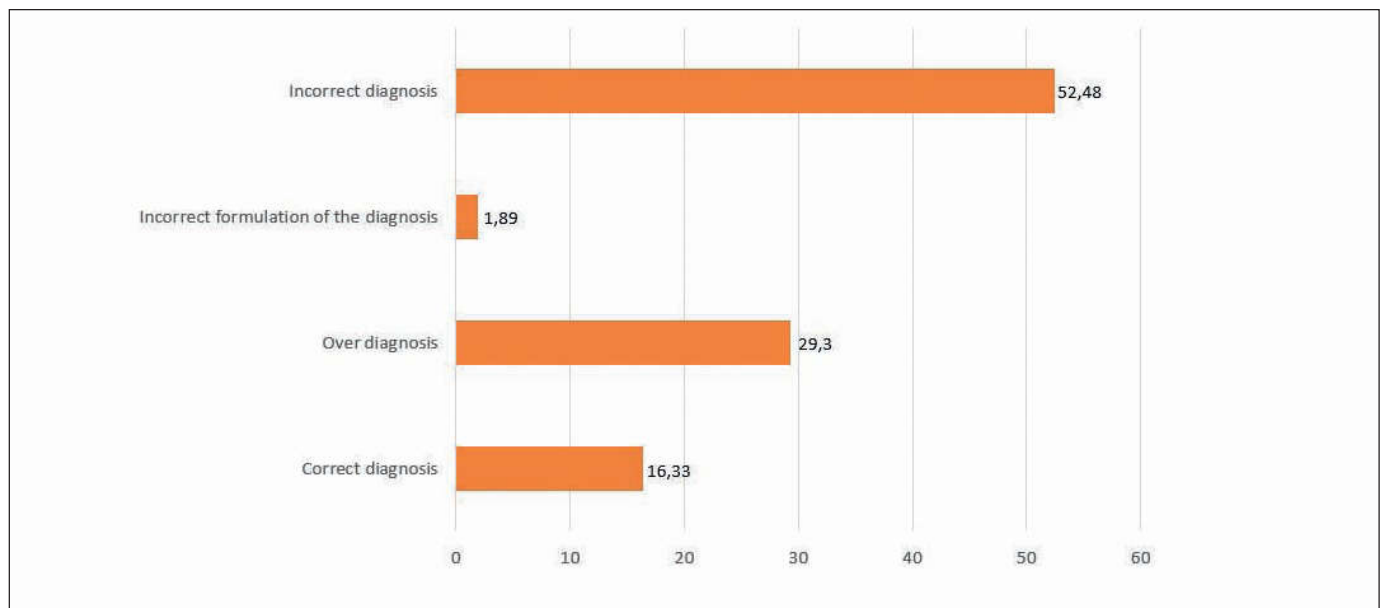


Fig. 5. Indicators that characterizing the general level of diagnosis of precancerous diseases of the OM in dental institutions that referred patients for consultation

There is a pronounced positive correlation between the age of the respondents and the level of OM disease ($r=+0.95\pm 0.04$). So, if in the group of respondents, whose age did not exceed 20 years, the indicator of the level of OM disease was $16.3 \pm 2.5\%$, then as the age of the respondents increases, it consistently grows and reaches $37.7 \pm 4.0\%$ for respondents of age older than 60 years ($t=4.53$; $p<0.001$).

Analysis of all the data obtained by questioning allows us to deduce some regularities. The first of them is related to the fact that in 266 out of 423 patients, were found various types of orthopedic structures during examination of the oral cavity ($62.6\pm 1.0\%$). The remaining 157 cases were observed precancerous diseases of the oral mucosa in patients who did not have orthopedic structures ($19.3\pm 1.4\%$; $t=8.22$; $p<0.001$). Therefore, with all probability, can be assume that orthopedic constructions injure the oral mucosa, violate its integrity and thereby create the possibility of developing precancerous diseases.

The second pattern is related to the fact that although among men and women with increasing age the level of precancerous diseases of the oral mucosa increases equally, the incidence rate in total among the former is significantly higher than among the others. Thus, cases of precancerous diseases of the oral mucosa were detected in 229 men ($54.1\pm 1.4\%$) and in 194 women ($45.9\pm 1.4\%$; $t=4.65$; $t=4.65$; $p<0.001$) out of 423 examined.

In a comparative analysis of the frequency of detection of precancerous diseases of the oral mucosa, depending on gender, it was found that significantly more often in men were found: leukoplakia (27.70% versus 13.95% in women, $p<0.05$), abrasive pre-cancerous cheilitis Manganotti (3.08% versus 0.24% in women, $p<0.05$), chronic ulcers of the oral mucosa (2.60% , $p<0.05$). In women, erosive and hyperkeratotic (typical) forms of lichen planus are significantly more common (27.42% versus 16.78% in men,

$p<0.05$) (Fig. 2).

Analysis of the incidence of OM, depending on age, gave the following results. In the group of patients aged 40–49 years, the incidence of erosive and warty forms of leukoplakia was $5.91\pm 0.08\%$, while among patients aged 50–59 and 30–39 years this figure was $4.02\pm 0.09\%$. ($p<0.05$). Also, the prevalence of erosive and hyperkeratotic (typical) forms of lichen planus was noted in the age group of 40–49 years compared with patients aged 30–39 years, while there were no significant differences in the disease of chronic ulcer of the oral mucosa (Fig. 3).

According to picture 4, most dentists who referred patients for medical counseling made direct errors in the diagnosis of post-X-ray cheilitis and stomatitis (71.43%), lichen planus (61.50%) and leukoplakia ($55, 71\%$) OM. The greatest difficulties in diagnosis were caused by lichen planus (83.96% of misdiagnosis) and flat leukoplakia OM (81.90%). Less frequently, direct errors were made in the diagnosis of chronic ulcers OM (66.67%), erosive and warty (verrucous) leukoplakia (62.86%), meteorological and actinic cheilitis (60.0%). It should be noted the high percentage of under-examined patients (both in terms of dental status and the general condition of patients). Thus, 95.19% of patients with lichen planus were examined, 87.14% - with erosive and warty (verrucous) leukoplakia and 85.71% - with post-X-ray cheilitis and stomatitis. There is a fairly high percentage (5.56%) of cases of over diagnostic of chronic OM ulcers, verified as “new OM”.

DISCUSSION

A special place among all diseases of the oral mucosa is occupied by precancerous diseases. Their prevalence is quite high and amounts to 12.5% of all diseases of the oral cavity and 26.6% of all neoplasms of the maxillofacial region [10, 11, 12]. According to WHO, the last decade has been marked by an increase in the prevalence of diseases in this

group and a change in the age structure of the incidence in the direction of increasing the group up to 35 years.

Precancerous diseases of the oral mucosa occur in 10–14% of outpatient dental patients, and the correct diagnosis detected in less than 45–65% of cases [13, 14, 15]. The variety of clinical manifestations of neoplastic diseases of the oral mucosa and the variability of signs of their transformation into a malignant tumor is a reason significant difficulties and errors in the diagnosis and correct choice of treatment tactics and clinical examination of patients [6, 16].

In general, in Ukraine there is a clear upward trend in the incidence of malignant neoplasms of oral mucosa, while detection at stages I-II is only 33.9% of those first registered. This indicates the low effectiveness of measures for the prevention and timely detection of cancer in the outpatient dental treatment network [5].

In this study, attention is drawn to the prevalence among precancerous diseases of patients with leukoplakia - 41.37% and lichen planus - 44.21%. The levels of detection of precancerous diseases of the oral mucosa due to the current and preliminary history for individual nosological forms are almost identical ($t = 2.03$; $p < 0.05$), which indicates the reliability of the above indicators (Fig. 1).

Considering that usually precancerous diseases of the OM, as well as cancer in the early stages, have an asymptomatic course, the importance of an integrated approach to their diagnosis, which includes a number of modern planned and emergency types of examination, becomes obvious [7-9, 15]. At the same time, J. Epstein (2008) emphasizes the primary role of primary care physicians and their oncological alertness in screening for precancerous diseases of the oral mucosa and pharynx, which makes it possible to prevent the development of cancer at an early stage [1].

Any disease with damage to the oral mucosa or its change in combination with a long course must be perceived as a potentially dangerous development of cancer of the OM.

When diagnosing diseases of the oral mucosa and lips, only in 30–35% cases showing correct diagnosis [3].

Obtained data analysis showed that in 52.48% of patients with precancerous diseases of the OM, errors were made in the diagnosis (Fig. 4.5). The completeness and correctness of the formulation of the diagnosis, which included the nosological form of the disease, the prevalence of the process indicating the areas of involvement, the stage and nature of the course of the disease, as well as its clinical form, did not meet the necessary requirements in the vast majority of cases (73.52%). In addition, 79.91% of patients were unexamined directly by the dentists themselves and were not referred to doctors of other specialties - none of the referrals, none of the extracts from the case histories contained data on the examination of patients by internists at the time of the examination. The correct diagnosis was made only in 69 patients (16.33%) with precancerous diseases of the oral mucosa (Fig. 5).

Thus, the diagnosis of precancerous diseases of the oral mucosa, carried out in dental institutions, only in 47.52% of cases corresponded to the minimum acceptable (I and

II) diagnostic levels, allowing, respectively, to determine the presence of a lesion of the oral mucosa and (or) identify the nosological form of the disease. Qualitative, according to III-IV levels, diagnosis of precancerous diseases of the oral mucosa with the formulation of a complete clinical diagnosis, form, topology, stage and nature of the process, caused difficulties in 73.52% of clinical situations. The low quality of diagnosis of precancerous diseases of the oral mucosa is also confirmed by the high number of unexamined patients (79.91%) and cases of over diagnosis (1.89%); The greatest difficulties in making a diagnosis were caused by post-X-ray cheilitis and stomatitis (71.43%).

CONCLUSIONS

Thus, using a number of diagnostic methods, were found a fairly high prevalence of precancerous diseases of the OM in residents of Ukraine. Among them, the erosive-ulcerative form of lichen planus and the erosive and warty forms of leukoplakia dominate. The prevalence of precancerous diseases, as well as cancer of the oral mucosa, increases with age. In general, it should be emphasized that the results obtained are obviously not conclusive. On the contrary, they indicate the need for a wider introduction into practice of new, modern screening methods for diagnosing precancerous and malignant diseases of the OM.

Presented data allow to recognize that precancerous diseases of the oral mucosa are one of the factors that worsen the dental status of the adult population. In the etiology of these diseases, an important role is played by the age and sex structure of the population, the presence of bad habits, as well as the technological quality of orthopedic structures and restorations.

Promotion between the people about timely dental treatment for precancerous diseases of the OM and the use of radical technologies in their treatment will not only increase the effectiveness of treatment, but significantly limit the malignancy of these diseases.

It was found that only in 16.33% of cases, the diagnosis of precancerous diseases of the oral mucosa, carried out in dental institutions, was of high quality, respectively, III-IV levels of diagnosis of precancerous diseases of the oral mucosa with the formulation of a complete clinical diagnosis, form, topology, stage and nature of the process. This indicates the lack of experience of doctors in the diagnosis of precancerous conditions of the oral mucosa. There are two main prerequisites for the late diagnosis of OM cancer. The first is due to the fault of the patient: delay in doctor visit, that is, only after the appearance of a pronounced pain symptom or after prolonged self-treatment and the absence of a positive effect; the second reason is due to the doctor's fault: the doctor's lack of alertness during the initial contact with the patient, and as a result, long-term treatment without identifying and eliminating the cause of the disease, which worsened the prognosis of treatment results in this situation.

Based on the study, we can conclude that for the early diagnosis of malignant tumors of the oral cavity, it is nec-

essary to carefully collect an anamnesis, focusing on the presence of risk factors for the development of precancerous diseases of the OM. A thorough history taking should be carried out even in the absence of complaints from the patient. Carrying out this stage of the clinical examination of a patient with a precancerous disease will allow early diagnosis of the first signs of its malignancy.

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