American Journal of Medicine and Medical Sciences 2025, 15(11): 3915-3917
DOI: 10.5923/j.ajmms.20251511.33

Improving the Treatment and Prophylaxis of Nicotine Palatal Leukokeratosis Under the Influence of Electronic Cigarettes

Komilova Zamira Abdurashidovna

Bukhara State Medical Institute named after Abu Ali Ibn Sina, Uzbekistan

Abstract Electronic cigarettes are distinguished by their multifaceted effect on the body. Dental diseases caused by electronic cigarettes occupy a special place due to their widespread prevalence, complexity of diagnosis and treatment. Studies conducted in scientific sources over the past decade have shown that oral diseases caused by electronic cigarettes occur in up to 22.4% of cases, and in combination with various syndromes, these diseases occur in up to 39.3%. At the same time, the prevalence of nicotine palatine leukokeratosis caused by electronic cigarettes and occurring in 19.7% to 31.4% of cases indicates the high prevalence of pathology.

Keywords Nicotine leukokeratosis of the palate, Tobacco, Oral cavity, Smoking, Gingivitis, Toothpastes

1. Introduction

According to WHO, the prevalence of nicotine leukoceratosis among e-cigarette users was: Uzbekistan -12.5%, Europe -9.8%, Russia -15.3%, USA -18.7%, Korea -11.1%. As can be seen, according to world statistics, Uzbekistan ranks 3rd. Both cigarettes and vaping systems have a detrimental effect on health. But if we know almost everything about nicotine, there has been a fierce struggle with smoking in recent years and there are positive results, then the popularity of electronic cigarettes and vapes is not decreasing yet, and although there is more information about them, the full impact has not yet been fully studied [1,3].

Of particular concern among doctors and scientists is the popularity of vaping among teenagers. A person who is "hooked" on this product uses it more often, as the flavors make it easier to smoke, which means that the load on the body increases. And it's not just about the respiratory organs. It is known that vaping liquids include propylene glycol, glycerin, nicotine, diacetyl, aromatic additives, and when inhaling steam, heavy metal ions such as tin, nickel, and others enter the body. For example, pentabromobiphenyl esters, which are responsible for keeping the device warm, disrupt the production of thyroid hormones that regulate the functioning of the heart and brain [3-6]. In addition, vaping abuse can lead to a decrease in male testosterone levels and a decrease in sperm count. The negative impact of vaping steam systems on the female reproductive system, especially during pregnancy, has been revealed [6].

Flavorings and heavy metals have a carcinogenic effect on the endocrine glands, hormones with high biological activity that ensure the processes of growth, development, reproduction, adaptation, and behavior. Therefore, it is especially dangerous to use vapes in adolescence, when the body has not yet experienced such a load. In the presence of diabetes, the use of vaping systems is an additional factor in the more severe course of this disease. Therefore, even if a vape does not contain nicotine, it can be dangerous. The legislative equating of vapes with traditional tobacco products, the prohibition of their promotion and use in public places seem to be reasonable actions on the way to public health [3].

2. The Purpose of the Study

In recent years, the incidence of nicotine palatal leukokeratosis has been increasing among the population, which causes medical, social, and economic problems. In particular, the development of this pathology with the use of tobacco products is of particular importance, as it creates difficulties in their diagnosis and treatment. There are several types of electronic cigarettes. Electronic cigarettes are distinguished by their multifaceted effect on the body. Dental diseases resulting from the effects of electronic cigarettes occupy a special place due to their widespread prevalence and complexity in diagnosis and treatment [1,4].

Scientific sources have shown that the prevalence of oral diseases caused by e-cigarettes is up to 22.4%, and in combination with various syndromes, up to 39.3%. At the

* Corresponding author:
abdurashidovnazamira192@gmail.com (Komilova Zamira Abdurashidovna)
Received: Oct. 21, 2025; Accepted: Nov. 12, 2025; Published: Nov. 14, 2025
Published online at http://journal.sapub.org/ajmms

same time, the prevalence of nicotine palatine leukokeratosis caused by e-cigarettes, which ranges from 19.7% to 31.4%, indicates the high prevalence of the pathology. This is explained by the fact that the initial stages of the disease proceed without clear symptoms, the lack of sufficient information about changes in both clinical and laboratory tests, and the lack of a single etiopathogenetic approach among specialists. This indicates the need to improve methods of treatment and prevention of the problem [2,7].

Particular attention is paid to scientific research aimed at improving the treatment of oral diseases that occur as a result of an unhealthy lifestyle among the world's population. In this regard, it is of particular importance to identify the clinical and functional characteristics of the specific course of diseases associated with oral diseases that develop as a result of electronic cigarettes in modern dentistry; assess the role of dental and physiotherapeutic measures in the complex treatment process; develop a comprehensive step-by-step approach plan that takes into account the somatic condition of patients; propose preventive treatment methods based on the dysfunction of the oral cavity organs caused by electronic cigarettes; and improve the development of methods for assessing the effectiveness of treatment [4,9].

The aim of the study is to improve the modern approach to detection, early diagnosis and prevention of nicotine palatal leukokeratosis caused by electronic cigarettes.

3. Material and Method of Research

As the object of the study, 115 e-cigarettes, addressed to the admission Department of the Central ASIAN MEDICAL UNIVERSITY Ti clinic, resulted in patients with nicotine palate leukokeratosis and 65 volunteers of the same age contingent free of this disease for the control group.

An analysis in literary sources showed that the effects of oral diseases, treatment of dental diseases and their prevention were studied as a result of e-cigarettes. The conduct of a number of research works devoted to the study of this problem testifies to the impact of diseases caused by patients as a result of e-cigarettes and the imperfection of the traditional method of treatment of disease complications.

4. The Results Obtained and Their Discussion

Cigarette smoking is precisely the main cause of the development of chronic bronchitis and emphysema. The rate of incidence and death from chronic bronchitis and pulmonary emphysema in kashandas is directly related to the duration and intensity of smoking. Pulmonary emphysema has been reported to occur 12.9 times more often in kashans than in non-smokers, while in 82% of cases of chronic bronchitis, smoking is the chief etiological factor. Depending on the degree of exposure to tobacco smoke, smoking men find 4-25 times more deaths than non-smoking men from infections of the upper respiratory organs.

In smokers, deviations from norm are more common in functional lung tests than non-smokers, including lung tissue elasticity test, permeability of large and fine air-carrying pathways, and diffusion capacity. Weakly expressed obstruction of the small respiratory tract is even noted in smoking adolescents. Studies of the pathogenesis of pulmonary emphysema suggest that smoking leads to an increase in the amount of proteases capable of damaging lung tissue in the lungs. This injury is most likely due to the separation of elastases from pulmonary leukocytes, which have increased amounts, as well as the inactivation of pulmonary antiproteases with oxidants, which are part of tobacco smoke. Tobacco smoking leads to an increase in the frequency of the development of respiratory infection diseases, as well as an increase in the frequency of deaths of kashans from pneumonia and influenza. Chronic laryngitis and tracheobronchitis develop more in them than in non-smokers [3,4,5].

Cigarette smoking can be considered the cause of the development of cancer in the hoarseness, mouth and esophagus. According to foreign scientists, tobacco smokers have a relative risk of developing cancer in the esophagus 2.1 times higher than non-smokers, and when smoking is combined with alcohol consumption, this risk increases 8.1 times. It is known that alcohol consumption has a synergistic effect with smoking, increasing the risk of developing oncological diseases.

In the process of smoking, the organs and tissues of the oral cavity undergo excitatory, thermal, toxic and carcinogenic effects. The intensity of the effect is determined by many factors, including the individual morphological and functional characteristics of the oral mucosa, the duration of smoking, as well as the intensity. The physical and chemical wound that tobacco smoke delivers depends on the type and quality of tobacco, its growth (use of mineral fertilizers, pesticides) and drying conditions. Temperature indicators are of great importance in the mechanism of traumatic action on the tissues of the oral cavity [3,5].

Smokers are 22 times more susceptible to lung cancer during their lifetime than non-smokers. Tobacco smoking is a major cause of lung cancer, causing more than two-thirds of worldwide lung cancer deaths each year and causing about 1.2 million deaths. Non-smokers also do not lose the chance of developing lung cancer if they are exposed to passive smoker smoke at home or at work every fifth tobacco smoker develops chronic obstructive pulmonary disease throughout their lives, especially those who start smoking in childhood or adolescence, since tobacco smoke significantly slows down the growth and development of the lungs [4,7].

Smoking leads to inflammation and disruption of the walls of air bags called alveoli and disrupts the lung's ability to breathe oxygen and release carbon dioxide. It also leads to the accumulation of purulent mucus, which causes a painful cough and difficult breathing [1,5].

Thus, the results of the retrospective analysis show that the frequency of chronic catarrhal stomatitis, chronic catarrhal goitre, leukoplakia, and minor salivary gland damage among other diseases of the mucous membrane of the oral cavity is 44.3% (out of 442 patients). Associated diseases of chronic catarrhal stomatitis, chronic catarrhal gout, leukoplakia, and minor salivary gland lesions are diabetes in 14.80±2.54% of cases, thyroid diseases in 6.12± 1.71% of cases; cardiovascular pathology (atherosclerosis in 4.08±1.41% cases, hypertensive disease in 6.63±1.78% cases), diseases of the gastrointestinal tract (chronic gastritis in 15.82±2.61 cases (A, B); chronic cholecystitis in 8.67± 2.01 cases; chronic hepatitis (A, B, C) in 11.22±2.25 cases; chronic pancreatitis in 6.12±1.71 cases). Diseases of the urinary system were found in 11.73±2.30% of cases. At the same time, among all forms of chronic catarrhal stomatitis, chronic catarrhal goitre, leukoplakia and minor salivary gland damage, the erosive-ulcer form was found in 33.67± 3.38% (66) patients, and 68.8% in people aged 51-60 years and older. % (135) increases. The most common location of morphological elements, in 95 (48.5%) patients is the lung mucosa, in the retromolar area - 30.1% (59). Low efficiency of traditional local treatment, high tolerance to treatment of patients with chronic catarrhal stomatitis, chronic catarrhal goitre, leukoplakia and minor salivary gland lesions prompts to search for new methods and means of pathogenetic treatment.

5. Conclusions

It has been proven that tobacco smokers develop metaplasia of epithelial cells in the bronchial mucosa, the degree of their expression depends on the number of cigarettes smoked. These changes are assessed by many authors as changes that have received cancer. The risk of developing lung cancer is associated with the effects of quantitative cigarette smoke. In men who smoke a pack of cigarettes a day, this risk increases by 10 times compared to non - smokers, and in men who smoke two packs a day-more than 25 times. For the last 50 years, women's cigarette consumption has grown dramatically, and currently, among them, deaths from lung cancer are growing faster than in men.

REFERENCES

[1] Danilevsky N.F., Leontev V.K., Nesin A.F., Rakhniy J.I. Zabolevaniya slizistoy obolochki polosti rta. - M.: Izdatelstvo OAO "Stomatolo¬giya", 2001.-272 p.

[2] Kulik I.V., Mirgorodskaya L.V. HIV infection. Proyavleniya v polosti rta. Journal: Institute Dentistry. - 2001. - No. 2. - S. 36 - 40.

[3] Kurenie kak factor causes pain in the periodontium, caries and poteri zubov. // Stomatologicheskoe obozrenie. - 2003. - No. 2. - S. 3 - 4.

[4] Leukoplakia slizistoy obolochki polyosti rta/ P.V. Goncharik, R.N. Suprunovsky, G.D. Panasyuk - 2019.

[5] Leukoplakia slizistoy obolochki polosti rta: aspect of clinical diagnostics and lecheniya/ Ron G.I., Kostromskaya N.N., Chernysheva N.D. // Problemy stomatologii. - 2006.

[6] Rasprostranennost leukoplakii Tappeinera sredi kurilshchikov tabaka/ Titarchuk L.V. // Molodyoj, nauka, meditsina: materialy 61-y Vseros. mejvuzovskoy studencheskoy nauchnoy conference, posvyashch. 70th Anniversary of Victory in the Great Patriotic War. – 2015 Nicotine stomatitis in a heavy smoker man with chronic psychosis / H. Aktas // Mucosa – 2019.

[7] Sharipova Gulnihol Idiyevna. DISCUSSION OF RESULTS OF PERSONAL STUDIES IN THE USE OFMIL THERAPY IN THE TREATMENT OF TRAUMA TO THE ORAL MUCOSA// European Journal of Molecular medicine volume 2, No. 2, March 2022 Published by ejournals PVT LTDDOI prefix: 10.52325 Issued Bimonthly Requirements for the authors.

[8] Sharipova Gulnihol Idiyevna. The effectiveness of the use of magnetic-infrared-laser therapy in traumatic injuries of oral tissues in preschool children // Academic leadership. ISSN 1533-7812 Vol: 21 Issue 1.