

ASSESSMENT OF THE CONDITION OF BUCCAL EPITHELIUM IN SMOKERS

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Introduction. Vaping is the process of smoking electronic cigarettes, vaporizers and other similar devices. Is an alternative way to consume nicotine. The transition to vaping is due in most cases to the belief in less harm to health compared to smoking, and some people use these gadgets to quit smoking.

The aim of the study. The buccal epithelium is an available experimental model for studying the toxic effects of various substances on a living organism.

Materials and methods. The aim of the study was to compare the condition of the buccal epithelium in healthy non-smoking volunteers and volunteers who smoke nicotine-free vaping or regular cigarettes, with the subsequent possibility to draw conclusions about safety or adverse health effects. The study involved 24 students of NUPh, both sexes. Collection of buccal epithelium was performed in the subjects by taking cells with a spatula on the inside of the cheek. The resulting native material was stained with a 1% solution of trypan blue. The morphological characteristics of the cells were evaluated and after 15-20 minutes the percentage of dead cells with damaged membrane, which were stained with a bright blue dye, was calculated. Quantitative determination of cells was performed in Goryaev's counting chamber. The study compared groups of people who smoked only e-cigarettes (n = 8), healthy non-smokers (n = 8) and smokers (n = 8).

Results. The study compared the condition of the buccal epithelium in healthy non-smoking volunteers and volunteers who smoked nicotine-free vaping or regular cigarettes. The results of this study on the morphological changes of the buccal epithelium showed statistically significant differences ($P < 0.05$) between smokers, e-cigarette consumers and the control group. Microscopic studies of the condition of the buccal epithelial cells in the control group showed that the cells remain viable even after transfer to saline. The percentage of dead cells in this group was in the range of 6-9%. Conglomerates in the form of cell groups did not occur. In smokers, some special features of the cells were identified, in particular the phenomenon of hyperkeratosis, and an increase in the percentage of dead cells to 34% was noted. People who used vaping also had an increase in the percentage of dead cells to 22%, but probably lower than people who smoked regular cigarettes. It should be noted that in persons who smoke only electronic cigarettes, the phenomena of hyperkeratosis of the buccal mucosa were also noted. The identified symptoms are due to the toxic effects of tobacco products, as well as vaping on the differentiation and keratinization of the buccal epithelium

Conclusions: The obtained evidence indicates that nicotine-free vaping still has a detrimental effect on the condition of the buccal epithelium, violates the hygienic properties of the oral cavity, but in comparison with the harmful effects of tobacco products found in cigarette smokers, has some relative advantages.