

Summary

Cigarette smoking is considered to be a serious public health problem and is associated with increased morbidity and mortality. The alternative to the above were to be modern devices that deliver nicotine to the body: e-cigarettes and "heat-not-burn products", giving the user an experience similar to regular smoking. Currently, the idea that the above-mentioned devices are less harmful is becoming more and more controversial. It has been shown that the aerosol inhaled during inhalation of these modern devices contains a number of substances with scientifically proven harmful effects on the body's health.

The oral cavity is the first place of contact of inhaled cigarette smoke and e-cigarette aerosols/heat-not-burn products with the human body.

Therefore, the aim of the doctoral thesis was to assess the effects of smoking traditional cigarettes and modern nicotine delivery devices (e-cigarettes and heat-not-burn products) on the concentration of selected salivary lipids and their peroxidation products, as well as the concentration of salivary cytokines, chemokines and growth factors.

The study included young adults (aged 18-30) with a nicotine addiction duration of not less than one year and not more than 3 years. Smokers were divided into 3 equal groups (25 people in each): smokers of traditional cigarettes, smokers of e-cigarettes and smokers of "heat-not-burn products". People classified into one of the above study groups could use only one of the three above methods of delivering nicotine to the body and were characterized by the absence of inflammation in the oral cavity, normal BMI range, occasional alcohol consumption, and no history of using psychoactive substances. The control group consisted of non-smokers with no history of smoking, matched in terms of the above requirements and gender to the participants of the study groups. Saliva, which constitutes diagnostic material, was collected by spitting method. Immediately after collecting the diagnostic material, the participants underwent a

dental examination, which included an assessment of the condition of the teeth and periodontium.

The concentration of selected sphingolipids, ceramides and lipid peroxidation products, as well as the concentration of salivary cytokines, chemokines and growth factors were assessed.

There was a significant decrease in the concentration of most of the sphingolipids in the unstimulated and stimulated saliva of smokers, regardless of nicotine delivery method, and increased concentrations of peroxidation products indicating a redox imbalance in the salivary glands of smokers.

Furthermore, it was shown that the use of both e-cigarettes and heat-not-burn products appears to significantly inhibit the local immune response in unstimulated saliva of smokers, while smoking traditional cigarettes only slightly increases the inflammatory response compared to non-smokers. The inhibitory effect on the synthesis or release of the tested cytokines from cells may be caused by the influence of menthol flavor for e-cigarettes and "heat-not-burn products".

The review summarizes reports on the impact of smoking traditional cigarettes on redox hemostasis of the oral cavity.

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