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# **1<sup>st</sup> International Conference of Medical Goes Public (ICON-MEGOPIC2021)**

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PP04

## CHANGES IN THE MICROBIOLOGICAL PARAMETERS OF THE ORAL CAVITY CAUSED BY USING ELECTRONIC CIGARETTES

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**Background.** Nowadays, the use of electronic cigarettes (EC) has become a very fashionable hobby of schoolchildren, and many teenagers who did not try smoking before develop interest in the new devices. The state of the local microbiota is affected by various factors, namely the temperature of the inhaled aerosol, the pH of the oral cavity, the nature of the diet, genetic and environmental factors, which can contribute to the development of oral dysbiosis, caries and periodontal disease. **Aim.** This study was conducted to describe the oral microflora of rats exposed to EC. **Methods.** 30 Wistar rats weighing 76-94g were divided into two groups, control (10 rats) and experimental (20 rats). The experimental group was exposed to EC aerosol for 90 days. **Results.** The EC exposure stimulated depletion of commensal microbes' colonies in the oral cavity of the rats from the experimental group. A greater incidence of atypical species, such as *Klebsiella pneumoniae*, *Acinetobacter lwoffii*, *Candida albicans*, was observed in experimental group compared to control group at day 90. The test of independence showed a statistically significant significance between the frequency distribution of opportunistic microbes and duration of EC exposure for *Klebsiella pneumoniae* ( $\chi^2 = 8.017$ ,  $p = 0.046$ ), *Candida albicans* ( $\chi^2 = 8.689$ ,  $p = 0.034$ ) and *Acinetobacter lwoffii* ( $\chi^2 = 36.772$ ,  $p = 0.001$ ). **Conclusion.** Our findings suggest that the aerosol formed by EC smoking changes the composition of the microflora. In the oral cavity, the number of pathogens increases, and the amount of normal microflora decreases.

**Key:** electronic cigarette, smoking, microflora, microorganisms, rats