

## EVALUATION OF THE EFFECTIVENESS OF A PREVENTIVE ALGORITHM FOR SMOKING TOBACCO PRODUCTS

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**Abstract.** Today, tobacco smoking is widespread throughout the world. Tobacco smoking (TS) leads to huge irreparable losses for public health. The number of people who smoke is projected to rise to 1.6 billion by 2025. Globally, 47% of men and 12% of women currently use tobacco, while in Europe alone, about 30% of adults smoke. Much of the growth of the tobacco epidemic in recent decades is due to an increase in the proportion of people who smoke in developing countries. Purpose of the study was to evaluate the developed algorithm for providing dental care to patients using a steam cocktail while smoking. The study involved 104 patients aged 18 to 44 years, with at least one year of smoking experience. All patients were divided into 3 groups depending on their smoking history.

**Keywords:** tobacco smoking (TS), smoking index (SI), steam cocktail (hookah), gingivitis index (GI), temporomandibular joint (TMJ), papillary-marginal-alveolar index (PMA), periodontal index (PI).

**Relevance.** Today, tobacco smoking is widespread throughout the world. Tobacco smoking (TS) leads to huge irreparable losses for public health. The number of people who smoke is projected to rise to 1.6 billion by 2025. Globally, 47% of men and 12% of women currently use tobacco, while in Europe alone, about 30% of adults smoke [2, 7, 13]. Much of the growth of the tobacco epidemic in recent decades is due to an increase in the proportion of people who smoke in developing countries. According to statistical calculations, TS is the cause of more than 17% of deaths in Russia. It is also known that TS is associated with 43% of all deaths of men aged 35-69 years from malignant tumors and 89% from lung cancer.

In recent years, tobacco smoking using a hookah (steam cocktail) and the use of electronic cigarettes have increased significantly [8, 15]. Hookah smoking is a new trend in tobacco use that is associated with a variety of health problems, including addiction.

Health care providers should be aware of new tobacco trends that may affect patients, such as waterpipe smoking, which is a potential gateway to nicotine addiction [1, 9].

Improving methods of prevention, early diagnosis and modern methods of treating dental diseases will help preserve the health of the country's population. The results of the study correspond to the area specialty research.

**Purpose of the study:** evaluate the developed algorithm for providing dental care to patients using a steam cocktail while smoking.

**Materials and methods of research.** The clinical study was carried out on the basis of the Department of Maxillofacial Surgery of Samarkand State Medical University in accordance with the purpose of the study to solve the assigned problems. The study involved 104 patients aged 18

to 44 years, male and female, with at least one year of smoking experience. The comparison group included 49 patients aged 18 to 44 years, male and female, who do not use or have not previously used tobacco mixtures. All patients were divided into 3 groups depending on their smoking history: Group 1 (n=51) smoking experience less than 5 years, Group 2 (n=53) smoking experience more than 5 years, Control group (n=49) non-smokers.

To objectively assess the condition of the oral cavity in smokers, we examined salivary fluid before the study and after using the management algorithm we developed. We took the secretion of the salivary glands from all subjects using a salivary collector (Sarstedt D-51588 Numbrecht). In order to assess your smoking status, you need to fill out three questionnaires.

To determine the patient's status and evaluate the effectiveness of the prevention, the following were used:

1. Fageström test - to assess the degree of nicotine addiction;
2. Modified D. Horn questionnaire - to determine the type of smoking behavior;
3. Table assessing the degree of motivation to quit smoking steam cocktail.

To effectively assess the intensity of dental caries damage and to facilitate control over the effectiveness of preventive measures, the CFR index was determined.

To assess the severity of gingivitis, the papillary-marginal-alveolar index (PMA) of Parma (1960) was used, which made it possible to record the dynamics of the lesion.

Using clinical examination methods, the condition of periodontal tissues was assessed, the following were carried out: external examination of the patient, examination of the oral cavity, determination of the PI index (complex periodontal index). The PI index is necessary to further determine the volume of preventive and curative care. The hygienic state of the oral cavity was determined using the Tureski index (S. Tureski et al., 1970).

Based on the studies of three groups, an algorithm for providing dental care to people who use steam cocktails while smoking was developed.

Statistical processing of the obtained data was carried out using the IBMSPSS program, version 21.0. Descriptive statistics of the research results are presented for qualitative values in the form of percentages and their standard errors, for absolute values - in the form of arithmetic means (M) and standard deviations ( $\sigma$ ). Median (Me) and quartiles (Q25, Q75) were used in descriptive statistics in cases where there was no normal distribution of characteristics.

When confirming the normal distribution of variable values in the study groups, the statistical significance of the differences was checked using the Student t-test for independent samples. The reliability level was at least 95%.

**Research results and discussion.** When analyzing the degree of dependence in groups 1 and 2, we obtained the following results: In both groups, a decrease in the degree of dependence was noted throughout the study. In the first group from high dependence to moderate dependence. In the 2nd group from average to weak dependence. Moreover, an interesting fact is that the longer the experience of using steam cocktails, the weaker the patients' assessment of addiction. As a result of the preventive program, we saw a statistically significant ( $p < 0.05$ ) decrease in the smoking index. Moreover, in the first group it was 46.9% and in the second 48.2%.

The type of smoking behavior in both the first and second groups remained at the same level throughout the study. The only difference is that in the first group this type corresponded more to "playing with a cigarette", and in the second group it corresponded to "relaxation".

When analyzing the CFR data in each of the groups, we note stable values. But when comparing the groups, it is clear that this parameter had minimal values in the control group; in the first group, this parameter ( $p < 0.05$ ) had large values (by 30.2%). The second group was superior ( $p < 0.05$ ) to the control group by 46.8%.

The PMA index in the control group was stable throughout the study and amounted to  $21.06 \pm 2.27$ . Before the start of the study, this parameter had significantly higher values in both the first (52.8%) and second (56.5%) groups ( $p < 0.05$ ). Subsequently, there was a tendency towards a decrease in this parameter by the end of the year, but the value of this index could not approach the value in the control group ( $p < 0.05$ ).

The PI index in the control group also had stable values at all stages of the study. In groups 1 and 2, this parameter at the beginning of the study had large values ( $p < 0.05$ ). Subsequently, there was a tendency for this parameter to decrease by the end of the study in both the first (60.7%) and second (75.5%) groups ( $p < 0.05$ ).

Moreover, this parameter in group 2 at all control points had statistically significant ( $p < 0.05$ ) prevailing values.

The Turesky index in the control group at all control points was  $1.80 \pm 0.19$ . In the first group, before the study, this parameter prevailed by 31.0% over the index of the control group ( $p < 0.05$ ). Subsequently, this parameter decreased to  $1.98 \pm 0.57$ . In the second group, this index prevailed by 47.8% over the control group before the study ( $p < 0.05$ ). And by the end of the study it also reached a value of  $1.98 \pm 0.46$ .

When analyzing the results of the questionnaires, we obtained the following results. The degree of dependence before the start of the study was  $5.35 \pm 1.91$ . After 6 months, this parameter in patients, statistically significantly ( $p < 0.05$ ), decreased to  $4.37 \pm 0.74$ . At the 12th month of the study, the degree of dependence decreased ( $p < 0.05$ ) to  $3.51 \pm 0.64$ .

The smoking index before the study was  $1025.88 \pm 307.64$ , and by 2 months it decreased ( $p < 0.05$ ) to  $531.77 \pm 36.26$ . The mean values of smoking behavior type across all three control points averaged 3.24. The only difference was the variability of the values. The parameters had the greatest variability in the group before the study.

The smoking index before the study was  $1458.11 \pm 381.94$ , and by the 2nd month it decreased ( $p < 0.05$ ) to  $774.34 \pm 328.27$ .

The prevalence of dental caries in patients who do not use smoking mixtures reached 100%, the average caries intensity [according to the CFR index] was  $6.82 \pm 0.24$ . Average "C" indicators are  $3.31 \pm 1.16$ . After 6 months they became  $1.88 \pm 0.93$ . After 12 months –  $0.49 \pm 0.68$ .

The complex periodontal index also had stable parameters at the control periods of the examination and amounted to  $1.78 \pm 0.16$ . When analyzing the dependence before the study, a pronounced direct dependence was noted, the dependence of the PMA index on the smoking index, the degree of smoking and the type of smoking behavior influenced to a lesser extent.

Thus, a biochemical study of saliva in a group of people who used smoking mixtures for less than 5 years allowed us to determine a significant increase in the number of thiocyanates and a change in the enzyme composition of saliva. However, after the measures taken, the parameters are approaching normal, which indicates the effectiveness of the measures.

**Conclusions.** The developed algorithm for providing dental care to patients using a steam cocktail when smoking tobacco has proven its effectiveness and has reduced the intensity of major dental diseases and improved the biochemical parameters of saliva.

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