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### International Trends in Science and Technology

# **Proceedings of the IX International Scientific and Practical Conference**

## **International Trends in Science and Technology**

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E-mail:  
rsglobal.poland@gmail.com

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## GALITOSIS, AS PROBLEM OF CLINICAL DENTISTRY: FREQUENCY AND DIFFICULT ON THE STAGES OF ORTHOPEDIC TREATMENT

*Fedotova O. L., Yanishena Yu. I., Pogorila A. V., Bogatyrenko M. V., Dolya A. V.*  
*Ukraine, Kharkiv, Kharkiv National Medical University*

**Abstract.** *The presence of bad breath has long been recognized as a serious medical and dental problem. This symptom, on the one hand, is seen as the manifestation of any pathology in the human body, and on the other - as a low level of care of the oral cavity.*

*In the study of the level of self-assessment of the presence of gallitosis, a dense relationship was found between the medical and social aspects of this problem. This required the development of a scheme for the treatment and prevention of gallitosis, which would improve the quality of dental care. It was also found that the severity and frequency of gallitosis depend on the age of patients and prevail in people with chronic generalized catarrhal gingivitis, the presence of dentures and people with poor oral hygiene.*

**Keywords:** *gallitosis, gingivitis, periodontal disease, oral hygiene.*

**Introduction.** The presence of bad odor from the oral cavity has long been recognized as a serious medical and dental problem [1]. From ancient times known symptom of unpleasant odor from the mouth, which, on the one hand, was considered as the manifestation of any pathology in the human body, on the other - as a low level of care of the oral cavity. Even in the II century B.C. the philosopher Apuleius stated that there is nothing more controversial in the appearance of a man of free and noble, than slovenly mouth [2].

The aesthetic side of human life and its mutual relationship with others have always been regarded as the most important elements of human status in society, and one of the components of such relationships was the freshness of breath [3]. When characterizing chronic unpleasant odor from the oral cavity, physicians and researchers are increasingly using the term "halitosis", synonyms are possible: ozostomy, stomatodisodysia, foetor oris or foetor ex ore [4].

In the survey of population groups, 50% of respondents called the presence of bad smell of the oral cavity as a factor that significantly damages the successful careers of its owner (especially if the professional activity is related to communication), and 20% have identified halitosis as one of the most vulnerable physiological manifestations of human the person. This indicates a dense relationship between the medical and social aspects of this problem [5].

It is believed that halitosis belongs to the category of "social disability", because for a certain group of people it is often the reason for limiting the communication of people suffering from this ailment [6].

The frequency of manifestations of gallitosis in the European population is 50-65% [7]. According to the American Association of Dentistry, in the United States, this disease affects 30% of the population, and the fight against gallitosis consumes nearly \$ 10 billion a year [8]. In the survey of 1551 Kuwaiti residents J.M. Al-Ansari et al. [9], found that 23.3% of the respondents suffered from gallitosis. Belgian scientists V. Debaty and E. Rompen [10], in studying the problem of galitis, found that 60% of the population was concerned about an unpleasant odor, and 90% of them indicated that their main cause was inflammation of periodontal tissues.

Many authors confirmed the relationship between the prevalence of galitosis in patients with periodontal disease and paralleled the age, social class, sex, and indices of oral hygiene [11].

To date, the classification of gallitosis has been developed, which includes the following concepts: pseudogallitosis, gallitofobia, true gallitosis. The latter may be physiological and pathological, oral and extraoral [12].

However, despite the growing importance of the problem, the level of knowledge about gallitosis, its prevalence and therapy is not high enough not only among patients but also among dentists, since not all of its effective prevention, diagnosis and treatment issues are fully resolved [13].

In connection with this, the necessity of using the objective method of research of gallitosis increases, which will allow obtaining the exact quantitative expression of excretions with exhaled air, volatile sulfur compounds and low molecular weight amines in unstimulated oral fluid [14].

In addition, the main components of the treatment of galitosis are not identified in combination with the treatment of somatic and dental diseases [15].

**The objective of the study.** To study the frequency and severity of gallitosis in patients who applied to the university dental center of the KhNMU at the stages of orthopedic treatment.

**Materials and methods of research.** The study was carried out at the clinical base of the Department of Orthopedic Dentistry of the KhNMU among 470 patients from 18 to 74 years old, which were divided into 4 groups.

Patients were asked to complete a questionnaire, answering 16 questions to determine the level of self-assessment of the presence of galitis.

**Questionnaire**

1. Name, surname
2. Age.
3. Gender: m / f.
4. Place of work.
5. Do you have chronic illnesses?
6. Are you on the dispensary account?
7. How many times a day do you clean your teeth?
8. What toothpaste do you prefer?
9. Do you clean the tongue?
10. Do you use rinses, toothpicks, dental floss?
11. Do you think that you smell from your mouth?
12. What do you associate with the smell of your mouth?
13. Would you like to find the cause of your smell?
14. Do you have bad habits?
15. Do you have oral dentures?
16. Have you been treated before at an orthopedic dentist?

**Organoleptic mark evaluation.** Organoleptic odor determination was carried out using the method of R. Seemann. The presence of odor was assessed during a history and examination of the patient and noted in the map of the survey. Four degrees of severity of galitosis are defined:

Degree 0 - the patient pronounces the sound "A" at a distance of 10 cm from the doctor, an unpleasant smell from the mouth is not felt.

Degree 1 - the patient pronounces the sound "A" at a distance of 10 cm, there is an unpleasant smell.

Degree 2 - during a conversation at a distance of 30 cm there is an unpleasant smell.

Degree 3 - during a conversation at a distance of 1 m there is an obvious odor.

A total of 470 surveys were conducted.

**Instrumental measuring of odor from the oral cavity.** Measurement of the amount of volatile sulfur compounds in exhaled air was carried out using the device "Halimetry". The device is based on the principle of gas chromatography using a semiconductor sensor of zinc oxide or tin. The interval between measurements is at least 90 seconds. In the process of taking the sample, nasal breathing has been applied. After turning on the instrument, the display shows the value  $0 \pm 0,1$ . The first indicator illuminated. The display counted 3 minutes - this is the time of trial accumulation, during which the patient's mouth should be closed. After that, a straw was inserted into the patient's mouth. The loop was considered complete when the sampling indicator was switched off. The evaluation of the level of indicators of galitosis was 3 times.

The averaging indicator lights up after the completion of the three sampling. The display shows the value and average of the peak values of the samples. The test criterion was normally 80-120 ppb. A total of 1410 measurements were conducted.

**Research results.** In the study of the level of self-assessment of the presence of galitosis, the findings in the groups of patients 36-55 years exceed the rates of all the study groups. For the prevention and treatment of gallitosis, the following measures are required:

1. If you find a persistent odor from your mouth, you should contact a dentist.
2. Timely pass oral hygiene.
3. Elimination of inflammation of odontogenic infection, removal of damaged teeth that can not be restored, as well as wisdom teeth in violation of eruption (partial retention).
4. Passage of the course of professional oral hygiene with the removal of super-lacrimal and subacute dental deposits.
5. Using the dentist to master the skills of individual oral hygiene, teeth and tongue cleansing.

Taking into account the variations in the norm of the indicators of a galitometer in the range of 80-120 ppb and the difference between them within 40 ppb, we proposed degrees of severity of galitis with a difference of 40 ppb (Table 1).



Table 1.

Indicator	Degree of gravity			
	Norm 0	Light 1	Medium 2	Hard 3
ppb	80-120	121-160	161-200	>200
18-22 years	23	38	27	1
23-35 years	18	57	68	3
36-55 years	12	61	80	21
56-74 years	2	36	17	6

Distribution of volatile sulfur compounds content by severity of galitosis: norm 0 (80-120 ppb), light 1 (121-160 ppb), medium 2 (161-200 ppb), hard 3 (> 200 ppb).

Table 2. Distribution of indicators of the frequency of manifestations of galitosis

	Age of patients	18-22 years	23-35 years	36-55 years	56-74 years	Total
Frequency of manifestations	Number of patients	89	146	174	61	470
	%	19,0	31,0	37,0	13,0	100

The frequency of galitis (Table 2) depends on the age (18-22 years – 19,0%, 23-35 years – 31,0%, 36-55 years – 37,0%, 56-74 years – 13,0%), with inflammation of periodontal tissues and combined with the presence of dentures.

**Conclusions:** 1. Studies of the level of self-assessment of the presence of galitosis revealed a close relationship between the medical and social aspects of this problem and requires the development of a scheme of treatment and prevention of galitosis, which will improve the quality of dental care.

2. Indicators of severity of galitosis are dominated by persons with chronic generalized catarrhal gingivitis, the presence of dentures in unsatisfactory condition.

3. The incidence of galitosis depends on the age of patients with inflammation of periodontal tissues and is associated with the presence of dentures and poor oral hygiene.

**Development prospects.** The studies of the frequency and severity of galitosis in patients who applied to the Department of Orthopedic Dentistry at the University Dental Center of the KhNMU for treatment allow to develop a scheme of complex treatment of galitosis and will justify the appointment of antigalitosal drugs and influence on existing somatic pathology, which will increase the effectiveness of orthopedic treatment.

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