

FREQUENCY OF ORAL MYCOSES IN PATIENTS WITH CHRONIC CONDITIONS

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Abstract: The aim of the paper is to highlight the clinical changes (mainly mycoses) in the tongue in patients with general conditions as well as the possible etiopathogenic mechanisms and the correlation between them and local and general risk factors. The method is represented by a rigorous study conducted on 500 patients of both genders between 2010 and 2013. General conditions as well as primary or associated lingual lesions were clinically detected in 221 patients. The results indicated a high rate of primary or associated glossitis as well as a significant number of other types of lingual disorders. The data of the study are presented in graphs and tables. The important conclusion of the paper is the high rate of primary or associated fungal glossitis in patients with a history of chronic disease, as well as the existence of comorbidity-related risk factors and aggravating local-regional factors. The rate of occurrence of other types of glossitis is significantly lower.

Cuvinte cheie: antecedente personale patologice (A.P.P.), glosite, factori de risc

Rezumat: Scopul lucrării îl reprezintă evidențierea modificărilor clinice ale limbii (și aici ne referim cu precădere la micoze) la pacienții cu afecțiuni generale, precum și a mecanismelor etiopatogenice posibile și corelarea acestora cu factorii de risc locali și generali. Metoda de lucru a constat într-un studiu derulat între anii 2010-2013, cu program de lucru riguros, pe un număr de 500 pacienți de ambele sexe examinați, 221 fiind decelați cu afecțiuni generale, și la care am decelat clinic leziuni linguale unice sau asociate. Rezultatele au indicat o frecvență crescută de glosite unice și glosite asociate și un număr semnificativ de alte tipuri de afecțiuni linguale. Datele studiului au fost prezentate în grafice și în tabele. Concluzia importantă a lucrării este frecvența crescută a glositelor micotice unice sau asociate la pacienții cu boli cronice în antecedente, existența factorilor de risc reprezentați de comorbidități și a factorilor loco-regionali agravanți. Celelalte tipuri de glosite au fost semnificativ mai puține numeric.

INTRODUCTION

Dental medicine is a medical specialty, structurally anchored in the Romanian medicine evolution, increasingly proving the gained quality of being integrated into the general health of patients.

It is well known that, today, dental medicine cannot be regarded as a specialty strictly limited to oral health and the dentist cannot be regarded as a practitioner in this field only.

The current concept and orientation of dental medicine is significantly marked by the dental practitioner concern for not only the functions of the organs affected by the oral cavity disorders but also for the discovery of the roots of the disease.

Experience and practice have shown that the dental practitioner should address the patient in a complex and comprehensive manner to have a thorough view of the clinical situation as well as of the therapeutic solution in relation to the health of the patient. Therefore, in such cases, multidisciplinary therapeutic approach and teamwork are increasingly indicated, especially when the dental practitioner competence is exceeded by the complexity of the case, appealing to the general practitioner who treats and/or look after the patient.⁽¹⁾

Starting from the idea of indissoluble links between general and oral pathology, we conducted a clinical-statistical study on a group of 500 patients of different ages and both

sexes. Some of them requested specialised assistance from the Faculty of Dental Medicine in Bucharest while other patients were hospitalised for various general conditions in different medical clinics in Bucharest.

This paper presents a part of the results of the study referring to the tongue disorders in the examined patients.

METHODS

Between 2010 and 2013, we examined 500 patients. 279 of them mentioned no general condition in their personal health record (PHR), being declared clinically healthy, and 221 patients were diagnosed with general conditions of different types, being under specialised treatment. This is graphically shown in figure no. 1.

Of the 221 patients with personal health history, 92, more exactly 46 men and 46 women, accounting for 41.62%, presented single or associated lingual lesions (figure no. 2).

Patients were divided according to gender and age in 5 groups between 20 and 60+ years of age.

It is noted that the largest number of patients was represented by the age group 60+ (26 patients, 12 women and 14 men), followed by the age group 41-50 (21 patients, 13 women and 8 men). There were 15 patients in the other age groups (figure no. 3).

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Figure no. 1. The number of clinically healthy patients and of those with PHR of the total of 500 examined patients

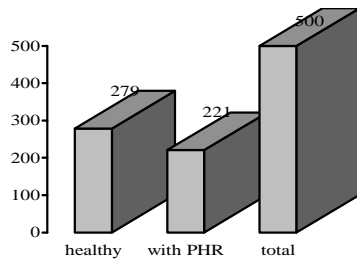


Figure no. 2. Patients with PHR and lingual lesions by gender

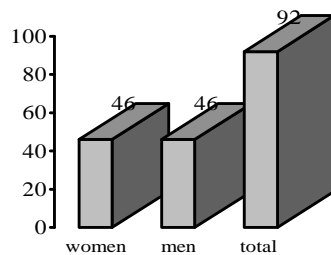
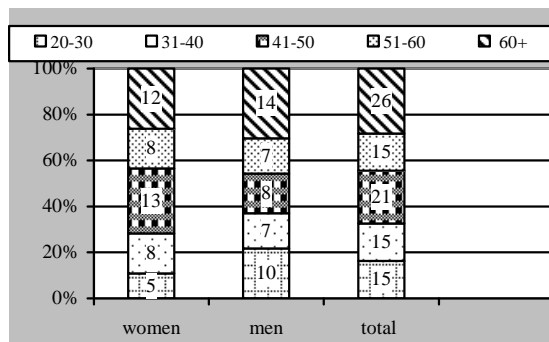


Figure no. 3. Distribution of patients with lingual disorders by gender and age

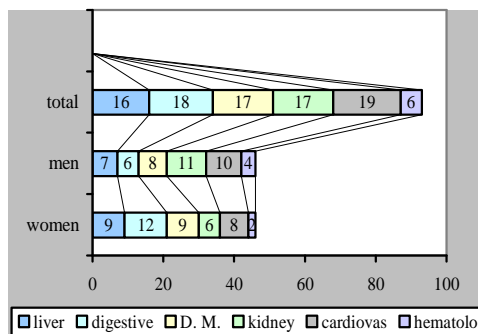


The examined patients suffered from conditions that affected different organs and functions as follows:

- 16 patients with liver disorders;
- 18 patients with digestive disorders;
- 17 patients with diabetes mellitus;
- 17 patients with kidney disorders;
- 18 patients with cardiovascular disorders;
- 6 patients with haematological disorders;

Situation schematically presented in figure no. 4:

Figure no. 4. Distribution of patients by condition and gender



The results of the statistical study performed and processed for each group, by general condition and gender, showed a slightly larger proportion of women among the patients with liver and digestive disorders as well as with diabetes mellitus, and a larger number of men among the patients with kidney, cardiovascular and haematological disorders. However, the differences in terms of gender were not highly significant. As for the age brackets considered, there were not important differences between patients. Nevertheless, the most affected age bracket was 41-50, except for cardiovascular disorders and diabetes mellitus that were more present in patients over 60.

The obtained results, in relation to each of the above-mentioned conditions, are shown in the graphs below, intended to point out their distribution by age, gender and general condition, as follows (figures no. 5,6,7,8,9,10):

Figure no. 5. Number of liver disorders by gender and age bracket

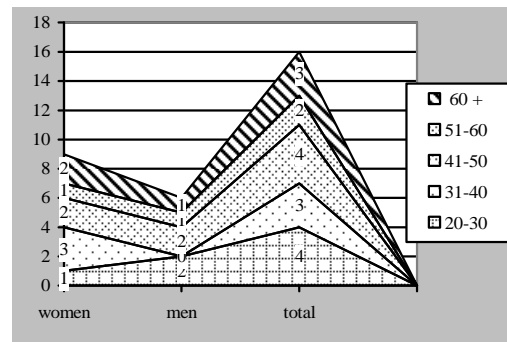


Figure no. 6. Number of digestive disorders by gender and age bracket

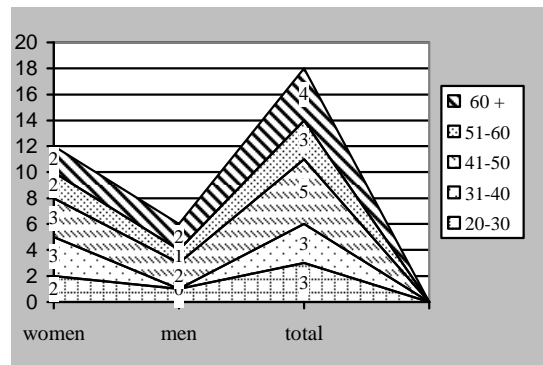
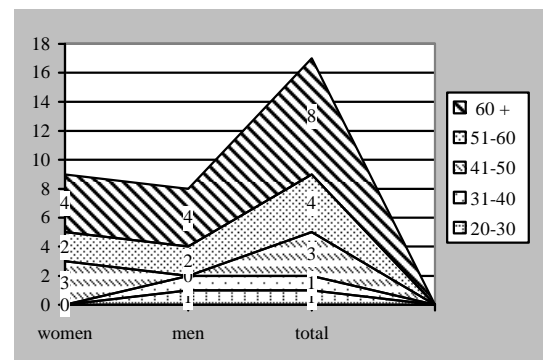


Figure no. 7. Number of cases of diabetes mellitus by gender and age bracket



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Figure no. 8. Number of kidney disorders by gender and age bracket

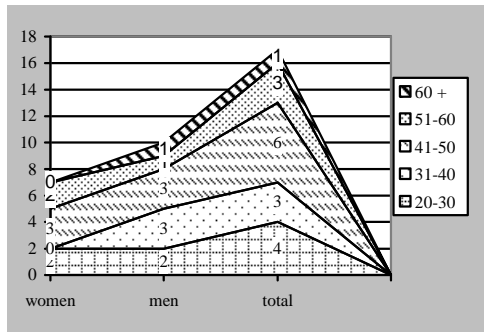


Figure no. 9. Number of cardiovascular disorders by gender and age bracket

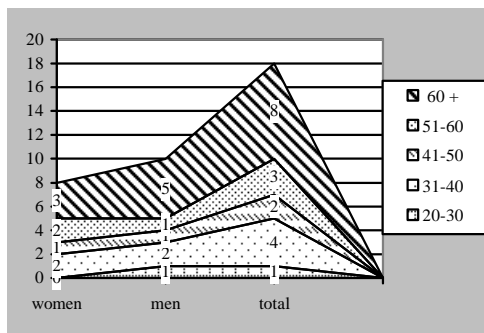
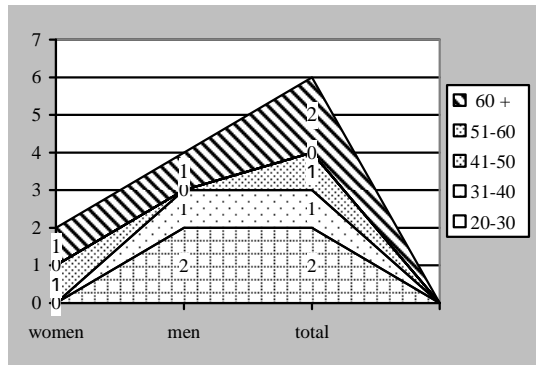


Figure no. 10. Number of haematological disorders by gender and age bracket



Following the clinical examination of patients, the below-mentioned tongue disorders were detected:

- single tongue disorders (table no. 1, figure no. 11 right, left):

- 1 – mycotic tongue,
- 2 – depapillated tongue,
- 3 – tongue ulcer,
- 4 – macroglossia,
- 5 – white tongue,
- 6 – pale tongue.

- associated tongue disorders (table no. 2, figure no. 12 right, left):

- 1 – macroglossia + mycosis,
- 2 – depapillated tongue + mycosis,
- 3 – depapillated tongue + ulceration,
- 4 – exfoliated tongue + mycosis,
- 5 – tongue ulcer + mycosis,
- 6 – pale tongue + mycosis,
- 7 – white tongue + mycosis.

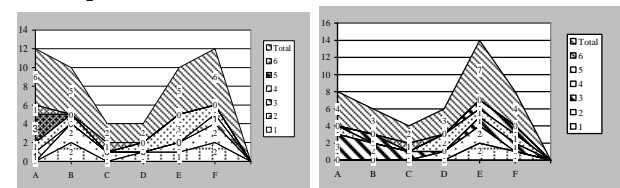
In table no. 1 and figure no. 11, it is noted that the most frequent single tongue disorders were macroglossia, ulcerative lesions and mycotic glossitis, with minimal variations by gender.

In relation to the patient general condition, more cases of glossitis were in patients, especially female ones, with digestive (6 cases), cardiovascular (6 cases), liver and kidney (5 cases each) disorders. As for male patients, the lesions were predominantly found in patients with kidney disorders (7 cases).

Table no. 1. Distribution of single tongue disorders by general condition and gender

Types of single glossitis	General conditions											
	General conditions		Total		General conditions		Total		General conditions		Total	
Gender	F	B	F	B	F	B	F	B	F	B	F	B
Mycotic tongue	0	0	2	0	0	0	1	0	1	2	2	1
Depapillated tongue	0	0	2	0	1	0	0	1	1	2	2	0
Tongue ulcer	1	3	0	2	0	1	0	0	0	1	1	1
Macroglossia	1	1	1	0	0	0	1	2	3	1	1	1
White tongue	3	0	0	1	0	0	0	0	0	1	0	1
Pale tongue	1	0	0	0	1	1	0	0	0	0	0	0
Total	6	4	5	3	2	2	2	3	5	7	6	4
	10		8		4		5		12		10	

Figure no. 11. Single tongue disorders distribution in relation to the general condition: left – female patients, right – male patients

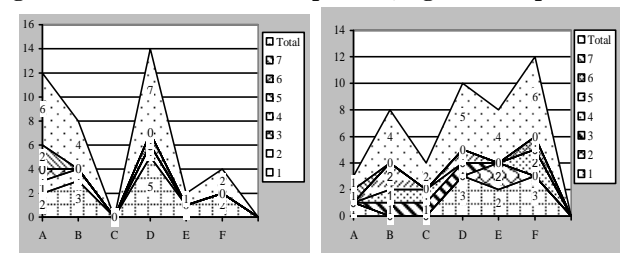


Legend:

- | | |
|-------------------------|------------------------------|
| 1 - mycotic tongue | A - digestive disorders |
| 2 - depapillated tongue | B - liver disorders |
| 3 - tongue ulcer | C - haematological disorders |
| 4 - macroglossia | D - diabetes mellitus |
| 5 - white tongue | E - kidney disorders |
| 6 - pale tongue | F - cardiovascular disorders |

As for the frequency of the cases of glossitis with associated manifestations, as it is shown in table 2 and figure 12 (left and right), our study allowed us to highlight the large number of cases of macroglossia associated with mycosis (22 cases, accounting for 51.16% of the total of 43 associated glossitis, 13 of them in female patients) and a number of 7 cases (16.2%) in patients with diabetes mellitus and digestive disorders, and 6 cases (13.95%) in patients with cardiovascular disorders. Otherwise, the number of cases in relation to the general condition showed no significant values.

Figure no. 12. Associated tongue disorders in relation to the general disease: left – female patients, right – male patients



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Table no. 2. Distribution of complex tongue disorders in relation to the general condition and gender

Types of associated lesions	General conditions												Total
	Digestive		Liver		Haematological		Diabetes mellitus		Kidney		Cardio-vascular		
	F	B	F	B	F	B	F	B	F	B	F	B	
Gender													
Macroglossia+mycosis	2	1	3	0	0	0	5	3	1	2	2	3	22
Depapillated tongue + mycosis	1	0	1	0	0	0	1	0	0	2	0	0	5
Depapillated tongue + ulceration	1	0	0	1	0	1	0	1	0	0	0	0	4
Exfoliated tongue + mycosis	0	0	0	1	0	1	0	0	0	0	0	2	4
Tongue ulcer + mycosis	0	0	0	2	0	0	1	1	0	0	0	0	4
Pale tongue + mycosis	0	0	0	0	0	0	0	0	0	0	0	1	1
White tongue + mycosis	2	1	0	0	0	0	0	0	0	0	0		3
Total	6	2	4	4	0	2	7	5	1	4	2	6	43
	8		8		2		12		5		8		

DISCUSSIONS

The results of the presented studies regarding the interrelationships between tongue disorders and a number of risk factors, such as the diseases analysed by us in the present paper, as well as the study of the frequency of various clinical forms of glossitis in relation to the patient general condition, gender, and age highlight a number of elements that require comments and discussions.

Therefore, following the study of a batch of 221 patients that had various general conditions in their personal health record, only 92, representing 41.62% were diagnosed with single or associated forms of glossitis. The frequency of mycotic nature of glossitis was high as they were present in 49 cases, representing 53.26% of the 92 cases of glossitis. Among them, there were 9 cases (18.36%) of single mycotic glossitis and 39 cases (79.59%) of associated glossitis.

The analysis of the patients according to nosology led to data that were similar to those in previous papers related to conditions such as nephropathy and diabetes mellitus (1,2,3,4), as well as cardiovascular disorders.(5)

The results obtained following the analysis of the batch of 92 patients allowed for the presentation of the risk represented by general conditions in determining the frequency of oral lesions, with direct reference to lingual ones. Mention should be made that the value of the data should be considered in direct relation to the way the batch was established, based on clinical diagnosis criteria, therefore the frequency of glossitis occurrence may be under the real level. Regardless of the mechanism that lies at the basis of the interrelationships between the frequency of mycotic glossitis, by far the most frequent in our study, and oral conditions in general (oral biocenosis disruption, vitamin and/or enzymatic imbalance, allergies, side effects etc.), antibiotic therapy appears to be the dominant risk factor in oral mycoses.

The large number of Candidiasis glossitis appears to be directly proportional to the toxicity of antibiotics. Among them, tetracycline has the greatest number of side effects, being thus the most important cause of oral mycoses.(4) The results obtained by us are similar to those presented by other authors.(2,3,6,7,8)

As far as the clinical forms of glossitis are concerned, among the single forms (49-53.26%), macroglossia is dominant – 12 cases representing 24.48% of the total number of cases of single glossitis, followed by ulcerative lesions located on the sides of the tongue, 10 cases (20.4%), and by mycotic and depapillated tongue, 9 cases (18.36%) each. As for the cases of associated glossitis (43 – 46.73%), mycotic macroglossia was predominant – 22 cases representing 61.15% of the total number, followed by depapillated tongue associated with mycosis, 5 cases (11.62%), exfoliated or ulcerative tongue, all

associated with mycosis, 4 cases (9.30%) each, 3 cases of white tongue with mycosis (6.90%), and 1 case of pale tongue with mycosis (2.40%).

It seems reasonable to assume that the occurrence of mycotic glossitis is related to the antibiotic therapy without protection against fungi, while the other forms of glossitis may be related to the general condition that leads to the decrease in the general and local body defence capability. In this regard, an important role is played by local-regional factors such as: irritating factors (carious lesions with sharp edges, dentures with sharp hooks, incorrect dentures), presence of large edentulous areas without dentures, poor oral hygiene etc.

The forms of glossitis detected by us in the conducted study are not specific to these cases only, as they frequently occur in other clinical situations when the patient immunity is low because of different causes.

CONCLUSIONS

The following ideas emerge from the research conducted by us:

- antibiotic therapy represents the most important risk factor responsible for the occurrence and frequency of mycotic glossitis by endogenous infection with potentially pathogenic yeasts;
- debilitating general conditions, as the ones analysed by us in the present paper, also represent important risk factors for the occurrence and frequency of tongue lesions, although they are far below the mycotic ones;
- the most frequent clinical forms of glossitis are represented by the single ones, which can be often associated with other types of glossitis;
- the lesions detected by us in the analysed general conditions are not specific forms, as they can also occur in other disorders, being in fact the consequence of the decrease in the body defence capability and the low immunity caused by the conditions in the personal health record.

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