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Kovačević Pavičić, Daniela; Braut, Alen; Pezelj-Ribarić, Sonja; Glažar, Irena; Lajnert, Vlatka; Mišković, Ivana; Muhvic Urek, Miranda

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# Predictors of oral mucosal lesions among removable prosthesis wearers

**DANIELA KOVAČEVIĆ PAVIČIĆ[1]**
**ALEN BRAUT[2]**
**SONJA PEZELJ-RIBARIĆ[3]**
**IRENA GLAŽAR[3]**
**VLATKA LAJNERT[1]**
**IVANA MIŠKOVIĆ[3]**
**MIRANDA MUHVIĆ-UREK[3]**

[1]Department of Prosthodontics,
School of Dental Medicine, University of Rijeka,
Rijeka, Croatia

[2]Department of Restorative Dentistry
and Endodontics, School of Dental Medicine,
University of Rijeka, Rijeka, Croatia

[3]Department of Oral Medicine and Periodontology,
School of Dental Medicine, University of Rijeka,
Krešimirova 40, Rijeka HR-51000, Croatia

**Correspondence:**
Miranda Muhvić-Urek
E-mail: miranda.muhvic.urek@medri.uniri.hr

## Abstract

**Background and purpose:** *The purposes of this study were to analyse the prevalence of oral mucosal lesions with an emphasis on oral regions and possible predictors for their occurrence among removable prosthesis wearers.*

**Materials and methods:** *The study included 125 removable prosthesis wearers (96 women and 29 men) who were divided into two groups: complete (n=86) and partial (n=39) denture prosthesis wearers. Predictors and oral mucosal lesions were assessed using a questionnaire and clinical oral examination. Multiple logistic regression was used to assess the association of oral lesions with predictors.*

**Results:** *Oral mucosal lesions presented in 74.40% of examinees and their occurrence was linked to the male gender (p=0.045, OR 3.72; 95% CI:1.03-13.39) and xerostomia (p=0.005, OR 4.472; 95% CI:1.56-12.79). The majority of the lesions were present on the tongue (50.40%) and palate (43.20%), with the least occurring on the oral cavity floor (2.40%). The occurrence of palatal lesions was linked to age (p=0.008, OR 1.097; 95% CI:1.03-1.18), prosthesis age (p=0.002, OR 1.817; 95% CI:1.72-1.93), prosthesis wearing at night (p<0.001, OR 13.01; 95% CI:1.82-18.98), smoking (p=0.033, OR 4.532; 95% CI:1.13-18.11) and xerostomia (p=0.003, OR 5.874; 95% CI:1.81-18.98). The occurrence of tongue lesions was linked to age (p=0.042, OR 1.135; 95% CI:1.02-1.25).*

**Conclusions:** *Increased care and frequent follow-ups need to be implemented among denture prosthesis wearers that are male, elderly, smokers, who wear prosthesis at night and patients with older prosthesis in order to diagnose and cure oral mucosal lesions in time.*

## INTRODUCTION

According to data by the World Health Organization (WHO), despite numerous oral-preventive measures and activities implemented in the past decade, there remains a large number of people worldwide with major or complete dental loss *(1)*. These problems are present not only in underdeveloped countries, but also in countries with high average annual incomes. The most common reason for tooth loss is still dental caries with the higher prevalence in the rural areas, than in developed European countries, where prevalence is low but not irrelevant *(2)*. The second most common reason for tooth loss is disease occurring in dental supportive tissues. Although a great deal of attention is given to the prevention of such disease and some literature data suggest a decrease in periodontal diseases incidence during the past 30 years, data vary significantly between countries, the problem of non-uniform types of research making data comparisons difficult *(3)*. Other reasons for

tooth loss that are noted in the literature include age, gender, lower socioeconomic status and education, malnutrition and generally poor health conditions *(4)*. These data lead to the conclusion that there remains a large number of people, especially those of older age, that require restoration not only of lost masticatory units, but also resorbed alveolar ridges, in order to rehabilitate the function and aesthetics of the lower third of the face.

Despite the increase of implato-prosthetic therapy, in daily practice, the need for partial and complete dentures will remains for several years to come *(5)*. The correct fabrication and maintenance of dentures is a precondition for good quality of life among the elderly *(6)*. In the literature, data are often found that link ill-fitting prosthesis with the incidence of oral mucosal lesions *(7)*. The aetiology of such occurrence is complex and multifactorial. The primary predisposing factors stated in the literature for such lesions are age, gender, degree of oral hygiene, general health, frequency and length of prosthesis wearing, and poor prosthesis retention and stability. This presents a clinical problem that is contributed also with the non-coherent data from the literature.

Dentures are made for elderly patients who often, as a result of systemic disease, experience problems with the finer movements of the hand and therefore have difficulty maintaining oral hygiene *(8-10)*. The immune system's defence is also weakened due to age and systemic diseases (like diabetes mellitus), and as a result, denture-related oral mucosal lesions (DROMLs) caused by opportunistic pathogens (most commonly, *Candida albicans*) occur *(7,11-13)*. When patients wear dentures not only during the day but also at night, they additionally increase the potential incidence of DROMLs, due to the lack of the protective action of saliva on oral mucosa *(14)*.

Numerous research studies have linked gender and DROMLs; however, the data nonetheless differs significantly. A smaller number of research studies have demonstrated greater incidence of DROMLs among the male gender, listing smoking, alcohol, malnutrition and bad oral hygiene as causal factors *(15, 16)*. However, the majority of research demonstrated greater incidence of DROMLs among women as a more important predictor. The aetiology is not clearly understood, but it is believed that as a result of a lack of sex hormones during menopause, the mucosa becomes thinner and more prone to the aforementioned conditions *(11, 17)*. Poor prosthesis stability and inadequate prosthesis retention, decreased vertical dimension and inadequate prosthesis occlusion are also significant factors that contribute to incidence of DROMLs.

Numerous research data indicate that elderly persons keep using, objectively poor fitted prosthesis, for a long time. As a result of years of wearing them, prosthesis retention weakens along with their stability and DROMLs occur (denture stomatitis, angular cheilitis, traumatic ul-

cer and inflammatory fibrous hyperplasia). The likely reason for this occurring is patient negligence, but also bad education on the part of therapists *(7, 8, 10, 13, 17, 18)*. The literature also presents findings noting that the prevalence of DROMLs is higher in the case of total rather than partial dentures, particularly in the upper jaw *(19)*. As stated in the previously mentioned research, DROMLs have a multifactorial aetiology and the literature data are often contradictory.

The purpose of this paper was to determine the prevalence of oral mucosal lesions among partial and complete removable prosthesis wearers, with an emphasis on oral regions and determining the predictors for the onset of oral lesions in particular regions, since the data pertaining to these issues are lacking.

## MATERIALS AND METHODS

This study was conducted on 125 patients (29 male and 96 female) with removable denture prostheses attending the Department of Prosthodontics and the Department of Oral Medicine at the Clinical Hospital Center Rijeka during the period from December 2015 to April 2016. All participants were informed about the study and those who agreed to participate signed a consent form. The Ethics Committees of the Clinical Hospital Rijeka and the School of Medicine, University of Rijeka, approved the study. Ethical guidelines as per the Declaration of Helsinki were followed during the study. The inclusion criteria was the presence of at least one prosthesis, while exclusion criteria were: not wearing the prosthesis, utilization of artificial saliva, use of topical or systemic antibiotics and antimycotics, local antiseptic solutions and topical steroids within the past month prior to the start of the study.

### Questionnaire and clinical examination

Data were collected using a checklist consisting of demographic characteristics (age and sex), type and age of prosthesis, frequency of prosthesis wearing, smoking, diseases and drug use.

Clinical data were collected while the patient was seated in a dental chair illuminated by a professional dental light and using standard dental tools. Intraoral examinations were performed by the one of the authors (MM-U). The inspection of the oral cavity was performed as a systematic procedure. A diagnosis of oral mucosal lesions was made on the basis of medical history and clinical features according to WHO guidelines *(20)* and the Color Atlas of Common Oral Diseases *(21)*. The diagnosis of a candida infection was made according to clinical criteria and microbiological analysis. In order to confirm certain diagnoses (lichen, lichenoid reaction and leukoplakia), a sample biopsy of the oral mucosa was performed (wherever appropriate).

**Table 1**. *Distribution of prosthesis wearers in relation to type of prosthesis worn and gender.*

| Denture prosthesis type | Total N (%) | Female N (%) | Male N (%) |
|---|---|---|---|
| Complete upper and lower prostheses | 54 (43.2) | 41 (42.70) | 13 (44.83) |
| Only complete upper prosthesis | 6 (4.80) | 3 (3.12) | 3 (10.34) |
| Only complete lower prosthesis | 1 (0.80) | 1 (1.04) | 0 (0.00) |
| Upper total and lower partial prostheses | 18 (14.40) | 10 (10.42) | 8 (27.59) |
| Upper partial and lower total prostheses | 7 (5.60) | 6 (6.25) | 1 (3.45) |
| Partial upper and lower prostheses | 22 (17.60) | 22 (25.58) | 0 (0.00) |
| Only partial upper prosthesis | 15 (12.00) | 12 (12.50) | 3 (10.34) |
| Only partial lower prosthesis | 2 (1.60) | 1 (1.04) | 1 (3.45) |
| Total | 125 | 96 | 29 |

Oral mucosal lesions were classified according the oral mucosal regions in six groups: lesions of (1) palatal mucosa; (2) buccal and labial mucosa; (3) tongue; (4) oral cavity floor; (5) gingiva and alveolar mucosa; (6) lips. Unstimulated saliva (WUS) was taken during five minutes in standardized conditions between 9:00 and 11:00, prior to which patients did not eat, drink, clean their teeth, or smoked for at least two hours *(22)*. Saliva flow rate was expressed in millilitres per minute. Xerostomia was considered when the WUS volume was lower than 0.2 ml per minute; when it was 0.2-0.4 ml per minute, it was considered as reduced salivation and when over 0.4 ml per minute, it was considered normal salivation *(23)*.

Immunosuppression was identified based on patient's history and medical documents. Inclusion criteria were: (a) patients that are under systemic steroids, immunosuppressive drugs, cytostatics or biological therapy (due to autoimmune diseases, cancers or transplantations), (b) patients affected by immunosuppression diseases (HIV/AIDS infection or hypogammaglobulinemia), (c) patients on haemodialysis.

Depending on the types of prostheses the patients were classified into two groups:

– A complete denture prosthesis (CDP) group that included: (a) wearers of complete dentures in the upper and lower jaw; (b) wearers of complete dentures only in the lower jaw; (c) wearers of complete dentures only in the upper jaw; (d) wearers of complete upper and partial lower dentures; (e) wearers of partial upper and complete lower dentures.

– A partial denture prosthesis (PDP) group that included: (a) wearers of partial upper and lower dentures; (b) wearers of only partial upper dentures; (c) wearers of only partial lower dentures *(24)*.

## Statistical analysis

Commercial statistical software SPSS (version 22.0, IBM) was used for data analysis. The data distribution was analysed using the Kolmogorov-Smirnov normality test. The Man-Whitney U test was used to assess differences between age groups. The chi-square test and Fisher's exact test were used to assess differences in the prevalence of oral mucosal lesions between the two groups. The results are expressed as mean and standard deviations, median (5th and 95th percentile) and frequency as appropriate.

Additionally, multiple logistic regression was used to assess the association of oral lesions with age, gender, type of prosthesis, smoking, prosthesis-wearing at night, xerostomia, diabetes mellitus and immunosuppression. Odds ratios (OR) were calculated at 95% confidence intervals. P values< 0.05 were considered statistically significant.

## RESULTS

### Demographic data

The study included 125 participants with a mean age of 69.7±8.8. The CDP group consisted of 86 participants (25 men and 61 women) with a median age (5th-95th percentile) of 73 (56-84) and the PDP group consisted of 39 participants (four men and 35 women) with a median age (5th-95th percentile) of 66 (53-81). There was a statistically significant difference in age between the two groups (p=0.003).

### Denture prosthesis types

The distribution of prosthesis wearers in relation to types of denture prostheses and gender is presented in Table 1. Most of the participants had complete dentures in both jaws (54.2%). Twenty-two percent of participants had partial dentures in both jaws. With regard to gender, female participants had the most common complete denture prostheses in booth jaws (42.7%), followed by partial denture prostheses in booth jaws (25.58%), while male participants had the most common complete denture prostheses in booth jaws (44.83%), followed by upper total and lower partial prostheses (27.59%).

**Table 2**. *Distribution of oral mucosal lesions in relation to group of denture prosthesis type.*

| Oral lesions | Total N (%) | CDP group N (%) | PDP group N (%) | P value |
|---|---|---|---|---|
| Oral mucosal lesions – at least one | 93 (74.40) | 67 (77.91) | 26 (66.67) | 0.182* |
| Oral mucosal lesions – 2 and more | 56 (44.80) | 41 (47.67) | 15 (38.46) | 0.337* |
| Denture related oral mucosal lesions | 57 (45.60) | 40 (46.51) | 17 (43.59) | 0.761* |
| Denture stomatitis | 49 (39.20) | 36 (41.86) | 13 (50) | 0.366* |
| Angular cheilitis | 27 (21.60) | 18 (20.93) | 9 (23.08) | 0.787* |
| Irritation fibroma | 5 (4.00) | 5 (5.81) | 0 (0.0) | 0.149** |
| Traumatic ulcer | 6 (4.80) | 4 (4.65) | 2 (5.13) | 0.610** |
| Other oral mucosal lesions | 86 (68.80) | 63 (73.26) | 23 (58.97) | 0.110* |
| Coated tongue | 42 (33.60) | 30 (34.88) | 12 (30.77) | 0.652* |
| Geographic tongue/exfoliative glossitis | 18 (14.40) | 11 (12.79) | 7 (17.95) | 0.447* |
| Fissured tongue | 5 (4.00) | 4(4.65) | 1 (2.56) | 0.490** |
| Atrophic tongue | 3 (2.40) | 2 (2.33) | 1 (2.56) | 0.678** |
| Median rhomboid glossitis | 5 (4.00) | 4 (4.65) | 1 (2.56) | 0.490** |
| Candidiasis/soor | 2 (1.60) | 2 (2.33) | 0 | 0.472** |
| Lichen planus | 12 (9.60) | 9 (10.47) | 3 (7.69) | 0.450** |
| Lichenoid reaction | 4 (3.20) | 4 (4.65) | 0 | 0.219** |
| Leukoplakia | 2 (1.60) | 1 (1.16) | 1 (2.56) | 0.528** |
| Leukoedema | 3 (2.40) | 2 (2.33) | 1 (2.56) | 0.678** |
| Oral pigmentation | 11 (8.80) | 8 (9.30) | 3 (7.69) | 0.533** |
| Fibroma | 10 (8.00) | 7 (8.14) | 3 (7.69) | 0.620** |
| Haemangioma | 2 (1.60) | 0 (0.0) | 2 (5.13) | 0.096** |
| Petechial lesions | 2 (1.60) | 2 (2.33) | 0 (0.0) | 0.472** |
| Perioral dermatitis | 5 (4.00) | 5 (5.81) | 0 (0.0) | 0.149** |

CDP- complete denture prosthesis; PDP- partial denture prosthesis.
*Chi square test; **Fischer's exact test

## Oral mucosal lesions

Nineteen different oral mucosal lesions (OMLs) were recorded. The average number of lesions in the complete denture prosthesis group was 1.8±1.44 and in the partial denture prosthesis group, this was 1.67±1.4. There was no significant difference in the number of mucosal lesions between groups (p=0.623). A single oral lesion was found in 77.91% of patients in the CDP group and in 66.67% of patients in the PDP group. The most common denture related oral mucosal lesion in both groups was denture stomatitis. Denture stomatitis was also the most common oral mucosa lesion. Less common lesions included angular cheilitis, traumatic ulcer and irritation fibroma. Although the prevalence of DROMLs was higher in the CDP group than in the PDP group, the difference was not significant (46.51% vs. 43.59%). The most common other oral mucosal lesion (OOML) in both groups was coated tongue. Results regarding oral mucosal lesions are summarized in Table 2.

Table 3. presents the distribution of oral lesions in relation to oral regions. The highest rate of oral lesions was observed on the tongue in both groups (54.65% in the CDP group vs. 41.03% in the PDP group). The lowest rate of oral lesions was found on the mouth floor (3.49%

in the CDP group vs. 0.0% in the PDP group). Although the prevalence of oral lesions according to regions was higher in the CDP group than in the PDP group, the difference was not statistically significant (p> 0.05 for all investigated regions).

## Predictors of oral lesions

A logistic regression model was employed to analyse the variables associated with oral lesions. Independent variables included in the multivariable analysis were: age, gender, type of prosthesis, smoking, prosthesis age and prosthesis-wearing at night, xerostomia, diabetes mellitus and immunosuppression. The results of the logistic regression are presented in Table 4.

Denture related oral mucosal lesions were positively linked to patient age, the age of the prosthesis, prosthesis-wearing at night, xerostomia and smoking. Smokers had a 3.6 time higher likelihood for developing DROMLs than non-smoker. Patients with xerostomia had approximately a three-time higher likelihood for developing DROMLs. Patients who wore their prosthesis at night were twice as likely to develop DROMLs. An increase in patient age and prosthesis age increased the likelihood of

**Table 3**. *Distribution of oral mucosal lesions in relation to oral regions.*

| Oral lesions | Total N (%) | CDP group N (%) | PDP group N (%) | P value |
|---|---|---|---|---|
| Palatal lesions | 54 (43.20) | 41 (47.67) | 13 (33.33) | 0.134* |
| Buccal and labial lesions | 40 (32.00) | 28 (32.56) | 12 (30.77) | 0.843* |
| Tongue lesions | 63 (50.40) | 47 (54.65) | 16 (41.03) | 0.402* |
| Oral cavity floor lesions | 3 (2.40) | 3 (3.49) | 0 (0.0) | 0.322** |
| Gingiva and alveolar lesions | 6 (4.80) | 3 (3.49) | 3 (7.69) | 0.275** |
| Lips lesions | 20 (16.00) | 15 (17.44) | 5 (12.82) | 0.514* |

CDP- complete denture prosthesis; PDP- partial denture prosthesis.
*Chi square test; **Fischer's exact test

**Table 4**. *Association between oral lesions and variables according to the multiple logistic regression.*

| Lesions | Odds Ratio | 95% CI for OR | | P value |
|---|---|---|---|---|
| | | Lower | Upper | |
| Denture related oral mucosal lesions | | | | |
| Age | 3.934 | 1.016 | 1.137 | 0.012 |
| Age of prosthesis | 1.87 | 1.783 | 1.966 | 0.009 |
| Prosthesis wearing at night | 1.985 | 1.158 | 2.812 | 0.006 |
| Smoking | 3.624 | 1.027 | 12.795 | 0.045 |
| Xerostomia | 2.973 | 1.123 | 7.868 | 0.028 |
| Other oral mucosal lesions | | | | |
| Gender (being male) | 3.594 | 1.084 | 11.910 | 0.036 |
| Palatal lesions | | | | |
| Age | 1.097 | 1.025 | 1.175 | 0.008 |
| Age of prosthesis | 1.817 | 1.718 | 1.931 | 0.002 |
| Prosthesis wearing at night | 13.008 | 1.818 | 18.976 | <0.001 |
| Smoking | 4.532 | 1.132 | 18.108 | 0.033 |
| Xerostomia | 5.874 | 1.808 | 18.976 | 0.003 |
| Buccal and labial mucosa lesions | | | | |
| Age | 1.085 | 1.023 | 1.151 | 0.007 |
| Gender (being male) | 5.316 | 1.670 | 16.927 | 0.005 |
| Immunosuppression | 20.328 | 3.390 | 121.887 | 0.001 |
| Tongue lesions | | | | |
| Age | 1.135 | 1.016 | 1.254 | 0.042 |

CI – confidence interval; OR – Odds Ratio.

developing DROMLs (Table 4). Gender, prosthesis type, diabetes mellitus and immunosuppression were not predictors for the onset of DROMLs.

Other oral mucosal lesions were linked to the male gender. Male patients had a 3.6 time higher likelihood for developing OOMLs than women (Table 4). The remaining variables (patient age, prosthesis age and type, prosthesis-wearing at night, xerostomia, smoking, diabetes mellitus and immunosuppression) were not linked to OOMLs.

Palatal lesions were linked to patient age, prosthesis age, prosthesis-wearing at night, smoking and xerostomia. Smokers and patients with xerostomia had a 4.5 and 5.9 time higher likelihood, respectively, of developing palatal lesions. Patients that wore prosthesis at night had a 13 time higher likelihood of developing palatal lesions. An increase in patient and prosthesis age increased the likelihood for developing palatal lesions (Table 4). According to our model, gender, type of prosthetic, diabetes mellitus and immunosuppression were not predictors for the onset of palatal lesions.

Buccal and labial lesions were positively linked to patient age, the male gender and immunosuppression. Patients experiencing immunosuppression (due to medications or diseases) were 20 times more likely to develop buccal and labial lesions. Male patients had a 5.3 time higher likelihood for the onset of such lesions. As patient age increased, the likelihood for developing buccal and labial lesions also increased. Prosthesis age and type, prosthesis-wearing at night, smoking, diabetes mellitus and xerostomia were not predictors for the onset of buccal and labial lesions.

Tongue lesions were positively linked only to the patient age variable. With an increase in patient age, the likelihood for developing lesions on the tongue also increased (Table 4). In our model, other tested variables (gender, prosthesis age, prosthesis type, prosthesis-wearing at night, smoking, diabetes mellitus, immunosuppression and xerostomia) were not predictors for the onset of lesions on the tongue.

The multiple regression analysis showed that the tested variables (patient age, gender, prosthesis age, prosthesis type, prosthesis-wearing at night, smoking, diabetes mellitus, immunosuppression and xerostomia) were not predictors for the onset of lesions on the oral cavity floor, alveolar ridge and gingiva, or on the lips.

## DISCUSSION

Previous studies have shown a higher prevalence of oral mucosa lesions among removable denture prosthesis wearers than non-wearers *(19, 24-27)*. Depending on denture

prosthesis type, a higher prevalence of DROMLs was found in complete denture prosthesis wearers than in partial denture prosthesis wearers *(10, 13, 26)*. In this matter, Jainkittivong et al. *(26)* found a higher prevalence of denture-related lesions among complete denture prosthesis wearers (46.3%) than in those wearing partial denture prostheses (40.8%). The possible reason for this finding is that complete denture prostheses are primarily made of acrylic resin and during polymerization, some unbounded monomer evaporates and micropores and cracks are created, invisible to the eye, but in areas that inhabit microorganisms, causing and maintaining local inflammation. Partial denture prostheses are made of cast metal and eliminate the possibility of microorganisms colonizing *(19)*. Research by Canger et al. *(28)* reports higher incidence of DROMLs in the maxilla, where the surface of the mucosa under denture prosthesis is higher than in the mandible and therefore, the possibility of lesion onset is higher. In our research, 45.6% of denture wearers had DROMLs. Depending on the denture prosthesis type, no significant difference in the presence of these lesions was noted among complete or partial denture wearers (46.51% and 43.59%, respectively). Our results are in concordance with those of Dundar and Ilhan Kal *(13)* and Jainkittivong et al. *(15)*, who also do not note differences in the prevalence of DROMLs depending on denture prosthesis type. The most frequent DROML in our study was denture stomatitis, followed by angular cheilitis, traumatic ulcer and irritation fibroma. These findings are similar to those of other researchers *(25, 29)*, although some authors report slightly different distribution of DROMLs *(7, 15, 26)*.

Causes for DROMLs (denture stomatitis, angular cheilitis, traumatic ulcer and irritation fibroma) are multifactorial. The development of these lesions is linked to local and systematic factors. The most often-listed local causes are: denture trauma, wearing a prosthesis at night, wearing a complete prosthesis, inadequate prosthesis stability and retention, poor prosthesis hygiene, candida infection, low salivary flow rate, low salivary pH and smoking *(7, 10, 16, 18, 19)*. The systemic factors linked to these lesions are age and diabetes mellitus *(10, 13, 18)*. Some studies report higher incidence of DROMLs among women *(19)*, others in men *(15, 16)*.

The results of this study confirmed that the onset of these lesions is linked to patient age, an increase in prosthesis age, prosthesis wearing at night, smoking and xerostomia. Although the DROMLs prevalence in our study was higher in men, gender was not found to be an important predictor for these lesions. Dundar and Ilhan Kal *(13)* list diabetes mellitus as risk factors for the onset of denture stomatitis and denture hyperplasia. However, our data do not support this finding.

Jainkittivong et al. *(15)* reported a higher prevalence of denture-non related OMLs in complete denture wearers than in partial denture wearers. The highest number of lesions found in their study was on the tongue. Fissured

tongue (27.6%) and atrophic tongue (8.4%) were the most frequent tongue lesions observed in their study. In our study, the most frequent oral lesions from that group (in our study named as other OMLs) were coated tongue (33.60%) and geographic tongue (14.4%). However, there was no significant difference in prevalence of these oral lesions between complete and partial denture prosthesis wearers.

In this study, we investigated the prevalence of oral mucosal lesions with regard to oral regions among denture prosthesis wearers. To our best knowledge, such a study has not been conducted or published to date. We found the highest prevalence of lesions on the tongue (50.4%) and on the palate (43.2%). All lesions were more frequent among complete prosthesis wearers than among partial prosthesis wearers, although the difference was not statistically significant. This finding is particularly interesting and can be explained by the fact that the tongue is a muscle organ in constant movement and with a large surface in contact with denture prostheses. Additionally, the high prevalence of palatal lesions can be explained by the large surface covered by upper denture prostheses. Multiple regression analysis showed that the development of the palatal lesions can be linked to the habit of wearing a prosthesis at night, prosthesis age, smoking, dryness of the mouth and patient age. In 32% of patients, we noted buccal and labial lesions, and the development of these lesions was linked to patient age, the male gender and immunosuppression.

Some limitations of this study must be noted. Due to multiple logistic regression and the small number of participants wearing different types of prostheses (Table 1), patients were divided depending on prosthesis types into two groups (CDP and PDP groups). Therefore, no data analysis was performed regarding the possible prosthesis combinations in both jaws. Since patients had partial and complete dentures, a retention and stability assessment could not be uniformly performed. In order to include these factors in the analysis, it is necessary to include a higher number of participants and separately analyse partial and complete denture wearers. This will be our next goal.

## CONCLUSION

The results of this study have shown that there is no difference in the prevalence of oral mucosal lesions depending on prosthesis types. The development of oral mucosa lesions is linked to dry mouth, the habit of wearing denture prostheses at night, prosthesis age, smoking, patient age and the male gender. We found no link between the investigated oral lesions and type of prosthesis and diabetes mellitus. It can therefore be suggested that increased care and frequent follow ups are required among denture prosthesis wearers of the male gender, the elderly, smokers, persons that have a habit of wearing their prosthesis at night, and persons that have old prostheses in order to diagnose and cure oral mucosal lesions in time.

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