Prevalence of oral mucosal lesions in institutionalized elderly people in Mashhad, Northeast Iran

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Objective: The aim of this study was to determine the prevalence of oral mucosal lesions in institutionalized elderly people in Mashhad, northeast of Iran.

Background: This study was conducted to assess the prevalence of oral lesions in the institutionalized elderly.

Methods: In this survey, we studied all of the nursing homes in Mashhad; a total of five encompassing 237 residents. The subjects were examined and lesions recorded in a designed checklist. T-test, chi-square and Fisher’s exact tests were used for the analysis.

Results: The mean age of the patients was 79.59 ± 8.88. Ninety-eight per cent of cases had at least one oral mucosal lesion. The most common lesions were fissured tongue (66.5%), atrophic glossitis (48.8%), sublingual varicosity (42%) and xerostomia (38%). There was no significant difference in the prevalence of denture-related lesions (DRLs) between men and women (p > 0.05). Xerostomia was more prevalent in 70–79-year-old than in 60–69-year-old subjects. No case of oral malignant lesion was detected.

Discussion: These findings revealed a higher prevalence of oral mucosal lesions in Mashhad city compared with other studies conducted in other major cities in Iran and abroad. The results emphasise the necessity of national programmes towards oral health promotion.

Keywords: elderly, institution, oral lesions, Mashhad, Iran.

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Introduction

Perhaps the most important change in the distribution of global population has been the growth in the proportion of elderly people, especially in the developed countries. In 1950, only 10% of the US population was aged 65 years or older. It is estimated that this value will reach 20% by the year 20301. In Iran, only about five million people are over the age of 60 years (7.3%)2.

In Iran, traditionally most elderly have been homebound, but recently by developing nursing homes, some of this population is moving towards being kept in institutions, especially in large towns3.

National oral health data of homebound and institutionalized elderly people are lacking, but some investigations have reported the oral health status of the elderly in different parts of Iran3–6. In a survey in Kahrizak, Tehran (the capital of Iran), 84% of geriatrics had at least one oral lesion6. Recently, Rabiei et al.5 reported a 86.1% prevalence of oral mucosal lesions in Rasht city (North of Iran).

There are no data on oral health in institutionalized people in the northeast of Iran. As some lesions are more prevalent in advanced age, this study was conducted to assess the oral mucosal conditions among institutionalized elderly people over 60 years old in Mashhad, Iran [World Health
Organisation has classified people aged 60 years and above as elderly in developing countries[7].

Methods
A descriptive analytic study was designed to determine the frequency of oral mucosal lesions, from October 2008 to March 2009. All five nursing homes – either private or public – in Mashhad were enrolled in this survey, with a total 237 residents. Inclusion criteria were as follows: elderly people who aged 60 years or older, were cooperable, were able to withstand a bed-side examination and had complete medical records. During the study, the subject’s rights were protected and an informed consent was obtained either from the study participants or their relatives. Any uncooperative patient during the study was excluded.

Among 237 elderly people, 202 persons (85.2%) were eligible and agreed to participate in this study. Oral mucosa examination was performed by one of the two specialists in oral medicine (PMM or ZD), which were calibrated in clinical diagnosis using previously established diagnosis criteria1,8. The subjects were examined using a portable high-intensity light, a dental mirror and a tongue blade. All parts of the oral cavity were examined. Sometimes, sterile gauze was used to remove debris from any white lesion to test whether or not it could be wiped off. If any further diagnostic procedure (e.g. biopsy, radiography) was necessary, the patient was referred to the Oral Medicine Department of Mashhad Dental School. The teeth were examined carefully. The type and length of time of denture-wearing were also recorded. Previous or current consumption of tobacco and alcohol was recorded. Duration of institutionalisation was recorded as well.

Demographic data (age, gender, name, educational level, etc.) and medical records were recorded using the attendant’s files in the institute. Statistical analysis was performed using SPSS 13.5 (SPSS Inc, Chicago, IL, USA). T-test, chi-square and Fisher’s exact tests were used for comparative analysis. p value of <0.5 was considered to indicate statistical significance.

Results
Two hundred and thirty-seven subjects (men= 53; women= 184) underwent this survey. Thirty-five subjects were excluded because of severe dementia and related uncooperativeness (34) and severe disability1. The patients ranged from 60 to 105 years old and were categorized according to three age groups: 60–69; 70–79; and 80 and older. The mean age of the patients was 79.59 ± 8.88 (women= 80.30 ± 8.29; men= 77.15 ± 10.40). Mean age was higher in females than males (p = 0.033). Most institutionalized elderly patients were aged 85 and older. Duration of institutionalisation was from <1–89 months (mean = 39.8 months). No significant relationship was observed between duration of institutionalisation and number of lesions (P > 0.05).

The most common systemic disorders were dementia (38.6%), hypertension (29.7%) and cardiovascular diseases (28.7%). Table 1 shows the frequency of systemic diseases in this study. Most subjects were in a middle socio-economic level (89%). Other subjects were in high (6%) and low (5%) socio-economic level. Most patients were in a middle educational level (75%). Eleven per cent (n = 23) were not educated at all. Others were in a high level of education (14%). Because most people were in a middle educational level and socio-economic situation, no significant difference was found (P > 0.05).

Ninety-eight per cent of cases had at least one oral mucosal lesion. The most common lesions were fissured tongue (66.5%), atrophic glossitis (48.8%), sublingual varicosity (42%) and xerostomia (38%). Table 2 presents the prevalence of oral mucosal disorders in the study participants, according to age groups. Table 2 also shows the different frequency of lesions in the three age groups. Atrophic glossitis was significantly lower in 60–69 years old than other age groups (p = 0.03). Xerostomia was significantly higher in 70–79-year-old group than the 60–69-year-old group (p = 0.013). Candidiasis was significantly higher in 80 years and older cases than other age groups (p = 0.01).

Among all subjects, 97.8% of men had at least one lesion compared with 98% of women (p > 0.05). Xerostomia was significantly higher in women (p = 0.026). Traumatic ulcer, macroglossia, Table 1 Prevalence of systemic diseases in study participants.

<table>
<thead>
<tr>
<th>Disease</th>
<th>Number (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dementia</td>
<td>78 (38.6%)</td>
</tr>
<tr>
<td>Hypertension</td>
<td>60 (29.7%)</td>
</tr>
<tr>
<td>Cardiovascular disease</td>
<td>58 (28.7%)</td>
</tr>
<tr>
<td>(other than Hypertension)</td>
<td></td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>50 (24.7%)</td>
</tr>
<tr>
<td>CVA</td>
<td>30 (14.8%)</td>
</tr>
<tr>
<td>Other diseases</td>
<td>21 (10.3%)</td>
</tr>
</tbody>
</table>
papillary palatal hyperplasia, recurrent herpes labialis and angular cheilitis were found exclusively in women.

One hundred and nineteen cases were denture wearers (M = 26/47 (55.3%); F = 93/155 (60%)), and 109 persons of this group had at least one denture-related lesion (DRL) (Table 3). There was no significant difference in prevalence of DRLs between men and women (p > 0.05). Denture stomatitis was significantly higher than other DRLs (p = 0.001). Of 83 non-denture wearers, 20 were dentate, having an average of four teeth, while 63 cases were edentulous. Duration of denture-wearing was from five to 34 years (mean = 19.7 years). Some subjects did not remember the exact duration of denture-wearing (n = 28). There was a direct relationship between duration of denture-wearing and number of DRLs and oral mucosal lesions (p = 0.04). Other uncommon lesions are listed in Table 4. No case of oral leukoplakia or oral squamous cell carcinoma was detected.

Nine patients were referred to Oral Medicine Department to establish clinical diagnosis of their lesions, and the diagnosis of fibroma, neurofibromatosis, mucocele and oral lichen planus were confirmed by histopathologic examination. In this survey, only four cases had no oral lesions. One case had 10 oral lesions. Most cases had four oral lesions (mode = 4 lesions).

Alcohol and tobacco habits are listed in Table 5, but because of the small sample size, no analysis could be performed.

**Discussion**

In this study, the prevalence of oral mucosal lesions was higher compared with previous studies in other regions of Iran (86.1%, 84%) and abroad such as Venezuela, Turkey, Malaysia, Brazil and China. Cultural differences, oral habits, educational level and even genetic difference can be responsible for this difference.

Because of the cultural beliefs towards respecting older people, in Iran, most elderly are kept at home with their relatives and only extremely disabled or...
very old persons are passed to institutes. In our study, most cases were over 80 years old which could be a reason for a higher prevalence of oral lesions. The results show the most prevalent oral lesions being fissured tongue (66.5%) followed by atrophic glossitis (46.8%) and sublingual varicosity (42%), which contradicts other studies in Iran. For example, Rabie reported dry mouth as the most frequent oral lesion (42.1%) followed by fissured tongue (29.9%), atrophic glossitis (25.9%) and sublingual varicosity (22.7%), respectively. Dry mouth is a subjective complaint, and careful attention and accepted criteria must be employed when reporting of this disorder is considered.

Another study in Tehran city reported varicosity (44.7%), denture stomatitis (18.2%), varix (17.8%) and papillary hyperplasia of palate (15.3%) as the most common oral lesions. In another survey among private and governmental institutes of Tehran, fissured tongue (50.7%), candidiasis (18.4%) and atrophic glossitis (17.5%) were most prevalent lesions.

Generally, the prevalence of oral lesions is higher than other studies in Iran; for example, fissured tongue is about twofold higher in our region. It can be due to a nutritional deficiency or allergy – which is more common in northeast of Iran. In our study, there was no gender difference in the overall prevalence of oral lesions, similar to Corbet’s findings. Van wyk, Lin and Motaleb Nejad reported a male predominance for some oral lesions, but in Mosqueda’s research women had more oral lesions. Generally, the prevalence of oral lesions is higher than other studies in Iran; for example, fissured tongue is about twofold higher in our region. It can be due to a nutritional deficiency or allergy – which is more common in northeast of Iran.

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Denture wearers (91.5%) had at least one DRL. Denture stomatitis and epulis fissuratum were the most frequent DRLs. Other researchers reported a frequency of 18–33% for DRLs. A higher prevalence of DRLs can be due to old unstable dentures, poor oral health status and lack of regular oral examinations. The result revealed that there was a direct relationship between duration of denture-wearing and number of DRLs and oral mucosal lesions. In our study, 79.7% of subjects had more than two lesions where other reports showed less number of oral lesions.

Although the number of oral mucosal lesions can be related to age, gender, education, socio-economic status, smoking, dentures and systemic diseases, in our study, educational level, socio-economic status and duration of institutionalisation had no impact on frequency of oral lesions. This study has assessed some possible risk factors for oral lesions such as smoking and alcohol habits, but no analysis could be performed because of the small size.

Conclusions

Expansion of the elderly population is the most important change in the global population. A high frequency of some lesions in this population necessitates national programmes towards oral health promotion that has been neglected in the Iranian population. Therefore, regular oral examination by dentists and oral medicine specialists must be part of geriatric medicine services.

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References


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