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Prevalence of oral mucosal disorders in geriatric dental patients visiting dental school in Southern India: A preliminary assessment

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Abstract

There has been a growing recognition of the need to obtain information about the oral health in India. The aim of this report was to provide descriptive information about the oral health among the elderly population. Data from interviews and clinical examination with 225 persons aged 60+ were obtained. Patients were divided into three age groups. The three groups consisted of 75 patients each with age groups of 60–65 years, 66–70 years and 71 and above, respectively and the association of age, medical status, recent use of dental services, habits, dentures with that of oral mucosal disorders were assessed.

Key words: Geriatric dental patients, oral health and oral mucosal disorders

Introduction

The integrity of the oral mucosa is essential for the maintenance of oral and general health. It is especially important in the elderly, who are known to have age-related decline in immune system function. Reports based primarily on clinical appearance, have suggested that oral mucosal alterations are frequently seen in the elderly population.[1] This is a result of age related decline of immune system function.[2] Prevalence ratios have been reported for specific oral lesions such as denture related lesions, leukoplakia, pigmented lesions, oral submucous fibrosis, lichen planus, geographic tongue, leukoedema, and oral cancer.[3] In addition, associations have been described between oral mucosal lesions and betel nut chewing, tobacco use, alcohol use, defective dentures and age.[4] Nevertheless, the relative strength of the associations has not been measured in a sample with an adequate number of subjects older than 60 years to permit a reliable measure of association of oral mucosal disorders with age, dentures, medical status. The aim of the study was to find out the association of age, medical status, recent use of dental services, habits, dentures with that of oral mucosal disorders in the three age groups.

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Materials and Methods

The study was conducted among patients attending our department. The study population consisted of 225 patients which ranged in age from 60 to 80 years. Subjects were assigned to one of the three age groups. Group A - 60–65 years, Group B - 66–70 years, Group C - 71 years and above. The sample was drawn using a stratified random sampling procedure to obtain equal representation for gender and for three age groups. All the 225 subjects were interviewed and offered an oral examination. Individuals who refused to participate and those who were too ill or unable to communicate were excluded form the study.

The subjects were interviewed in our department by two trained interviewers. Structured questions addressed a wide range of issues pertinent to oral health which focused on the responses relating to education, income, occupation, oral health related complaints, self assessed general health, and use of dentures and history of habits. A detailed medical history was taken to assess the medical status of the patient. Questions relating to the presence of habits like chewing tobacco, smoking or consuming alcohol were asked to the patients.

Examinations were performed by a dentist trained to recognize and diagnose oral mucosal disorders.

Examinations were performed in a setting that included a fully reclinable dental chair, diagnostic instruments and both direct and indirect light. A standardized extraoral and intraoral examination was performed. The following oral mucosal areas were examined sequentially in detail. Lips, buccal and vestibular mucosa, hard and soft palate, tongue, floor of mouth, salivary gland orifices, edentulous alveolar ridges, attached gingival and the oropharynx. Only clinically overt mucosal alterations were recorded. No microbiological or cytological examinations were performed routinely. Dentures were assessed for stability, tooth wear and structural integrity. During the analysis, denture stomatitis, denture related hyperplasia and angular cheilitis were combined into one variable because usually they are closely associated with denture use.

Data was entered into the computer and frequency tables were generated using SPSSS using version 13. Chi square test was used to determine the association of age with that of medical status, use of dentures and oral mucosal disorders.

The test was considered – significant if *P* value was ≤0.05
– Highly significant if *P* value was ≤0.01
– Very highly significant if *P* value was ≤0.001

Results

Elderly patients above 60 years of age were included in the study. A total of 225 patients participated in the study. They were divided into three age groups. The three groups consisted of 75 patients each with age groups of 60–65 years, 66–70 years and 71 and above, respectively.

The mean age for Group A, Group B and Group C was found to be 62.5, 66, and 74 years, respectively. The Group A consisted of 48 (64.0%) males and 27 (36.0%) females, Group B with 51 (68%) males and 24 (32%) females and Group C with 51 (68%) males and 24 (32%) females. There were similar proportions of male and females in the three groups and there was no statistically significant difference between the three groups [Table 1].

Patients were questioned regarding the presence of oral health complaint. 35 (46.7%), 31 (41.3) and 29 (38.7%) of the patients in Group A, Group B and Group C gave one or more oral health complaints, respectively. There was no statistically significant difference between the three groups in terms of presence of oral health complaint [Table 1]. 30 patients in Group A (40%), 23 patients in Group B (30.6%) and 24 patients in Group C (32%) were medically compromised and had history of diabetes mellitus/cardiac problems/respiratory problems/renal problems/cancers other than oral cavity/liver disease/gastrointestinal disorder/ drug allergy [Table 2]. There was no statistically significant difference between the three groups in terms of medical status [Table 1].

The patients in our study reported of recent use of dental services. 37 (44.3%) patients in Group A, 25 (33.3%) patients in Group B and Group C, respectively reported of recent use of dental services. There was no statistically significant difference between the three groups when recent use of dental services was considered [Table 1].

The patients in all the three groups gave the history of consumption of betel quid/betel quid and alcohol/betel quid and smoking/smoking/smoking and alcohol. There was no statistically significant difference between the three groups in terms of habits reported by the patients [Table 1].

Table 1: Comparison of association of age, oral health complaint, medical status, use of dentures and oral mucosal disorders among the three groups

	Group A (60–65 years) (N=75)	Group B (66–70 years) (N=75)	Group C (71 years and above) (N=75)	χ^2	*P*
Gender					
a) Males	48 (64)	51 (68)	51 (68)	0.36	0.835 NS
b) Females	27 (36)	24 (32)	24 (32)		
Oral health complaint	35 (46.7)	31 (41.3)	29 (38.7)	1.02	0.6 NS
Medically compromised patients	30 (40)	23 (30)	24 (32)	0.44	0.801 NS
Recent use of dental services	37 (49.3)	25 (33.3)	25 (33.3)	5.372	0.67 NS
Presence of habits	14 (18.7)	15 (20)	16 (21.3)	8.583	0.57 NS
Presence of only natural teeth	35 (46.7)	28 (37.3)	27 (36)	2.111	0.34 NS
Presence of both natural teeth and denture	14 (18.7)	13 (17.3)	25 (33.3)	6.653	0.03 Sig
Presence of dentures only	27 (36)	29 (38.7)	22 (29.3)	1.531	0.465 NS
Defective dentures	7 (9.5)	8 (10.6)	11 (4.6)	17.931	0.118 NS
Associated mucosal lesions	21 (28)	15 (20)	29 (38.6)	12.094	0.48 NS

NS - Not significant, Sig - Significant, Figures in parentheses are in percentage

Table 2: Total medically compromised status of patients in three groups

	Frequency	%
Cancer	9	4.2
Cardiac problem	14	6.2
Diabetes mellitus	12	5.3
DM and cardiac problem	5	2.2
Respiratory problem	15	6.7
Others	11	4.9
Total	66	29.3

Figures in parentheses are in percentage

About 35 subjects (46.7%) in Group A, 28 (37.5%) in Group B and 27 (36%) in Group C had presence of only natural teeth. Similarly 27 subjects (36) in Group A, 29 (38.7%) in Group B and 22 (29.3%) of subjects in Group C used only dentures. There was no statistically significant difference between the three groups in terms of presences of only natural teeth and only dentures [Table 1]. However, about 14 subjects (18%) in Group A, 13 (17.3%) in Group B and 25 (33.3%) in Group C used dentures and had natural teeth as well. But, there was statistically significant difference between the three groups [Table 1].

When dentures were assessed for looseness, stability, tooth wear, and structural integrity, a considerably smaller fraction of subjects had defects in dentures [Group A - 7, Group B - 8, and Group C - 11] and there was no statistically significant difference between the three groups when defects in dentures were considered.

About 21 subjects (28%) in Group A, 15 (20%) in Group B, and 29 (38.5%) in Group C had cancer of oral cavity/ growth/pigmentation/red lesion/ulcer/white lesion. However, there was no statistically significant difference between the three groups when mucosal lesions associated between the three age groups were considered. Table 3 shows the prevalence of oral mucosal lesions in the three groups.

Habits

About 15 patients in Group A, 14 patients in Group B and 16 patients in Group C had one or other habits. There were associations of mucosal lesions with habits. Nine patients in Group A, seven patients in Group B and 13 patients in Group C had associated lesions like carcinoma of oral cavity, red and white lesions like leukoplakia, lichen planus, or pigmentations.

Dentures

Out of the denture wearers, 10 patients in Group A and Group C and 12 patients in Group B had either of mucosal lesions. Denture stomatitis followed by angular cheilitis was most prevalent in all the three groups.

Defective dentures

However, the association of defective dentures with that of oral mucosal lesions was not much appreciable. Two patients each in Group A and Group B and four patients in Group C who had defective dentures had mucosal lesions.

Table 3: Distribution of the oral mucosal lesions in three groups

	Group A	Group B	Group C
Oral cancer	5	8	11
White lesion	3	4	9
Red lesion	3	4	7
Ulcer	1	0	0
Pigmentation	2	1	0
Growth	0	1	1

Discussion

The number of individuals over 60 years old is steadily increasing in almost all the countries, as a result of the improvement in living conditions and medical advances in therapeutics.[5,6] During the past decades, multiple epidemiological studies have attempted to evaluate the oral health, mainly in aged people living in protected environments and having limited access to dental services, and also in elderly living independently in the societies.[7,8]

Oral health is an important part of the quality of life of any individual. Oral lesions can cause discomfort or pain, interfering with mastication, swallowing and speech, while symptoms such as halitosis, xerostomia[9] or oral dysaesthesia can interfere with the daily social activities. In our study, when patients were questioned regarding the presence of oral health complaint, it was not surprising that about 38–46% of the subjects experienced oral health problems. It is also a well known fact that ageing causes changes to oral mucosal epithelium, such as thinning and reduction of collagen synthesis, decreasing the ability to epithelial regeneration and subsequently, the resistance of the organism to any disease of microbial or traumatic in nature. MacEntec MI *et al*.[1] found oral health complaints in 35% of elderly people which was comparable to our study.

Although the lifespan of the elderly population is increasing, successful ageing is jeopardized by multiple systemic conditions which become more prevalent at elderly age causing impaired systemic health and adversely affecting the quality of life. In our study, about 30–40% of the elderly subjects were medically compromised which was comparatively very less compared to study conducted by Triantos D[4] where 90% subjects were medically compromised.

Subjects in our study reported of recent use of dental services. Nowadays elderly people are healthier and

demand more dental care services. This trend is shown by the decreasing rates of edentulism and increased rate of dental care utilization by elderly people. In the study conducted by MacEntec *et al*.[1] 60% of individuals reported recent use of dental services.

About half the proportion of oral lesions encountered in the present study was related to habits. Associations have been reported between oral mucosal disorder and habits.[1] The proportion of mucosal lesions associated with habits was found to be almost same as compared to the above studies.

A significant proportion of oral lesions encountered in our study were also related to the use of dentures. Denture stomatitis followed by angular cheilitis was most prevalent in all the groups. This finding was consistent with the study conducted by Triantos.[4] We did not find much association of defective dentures with that of oral mucosal lesions in the three groups.

Conclusion

We conclude that age alone has very minimal influence on the occurrence of mucosal lesions. The coexistence of multiple medical conditions might further complicate oral health. The oral lesions among elderly people are frequent and commonly related to the habits and use of dentures whereas the quality of dentures contributes less than the use of denture to the presence of intraoral mucosal lesions.

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