

Oral manifestations in geriatric patients

Vela D desai and Smita R Priyadarshini*

*Oral Medicine and Radiology, Jaipur Dental College, Dhand, Tehsil-Amer, Jaipur, Delhi-⁸, Jaipur
smita.rp²⁹@gmail.com*; veladesai@hotmail.com*

Abstract

Aims & objectives: This study was carried out to assess the prevalence and the oral manifestations of the geriatric patients in Jaipur district of Rajasthan in a period of six months.

Methods: A total number of 300 subjects were included in this study, who gave a positive history of any systemic disease and a correlation was found with the oral findings in them.

Results: The common oral findings found amongst these patients were xerostomia, burning sensations, oral ulcerations, altered taste, gingival hyperplasia, inflammation, and pain and lichenoid reactions.

Conclusion: Thus, it could be concluded that age alone does not play a major role in impaired oral health and function but acts as an additive factor leading to various oral manifestation in the geriatrics.

Keywords: Geriatric patients, systemic diseases, oral manifestations.

1. Introduction

Geriatric dentistry is a specialized multidisciplinary branch of general dentistry designed to provide dental services to elderly patients. Aging is a universal process. Now a day's individuals reaching the age of 60 years and above are in better health and financial condition. The contribution of elderly populations to demographic figures is increasing day by day. Increasing problems of healthcare, psychosocial, personal and socio-economic factors with the elderly is further overwhelmed.

Old age is not a disease in itself, but the elderly are vulnerable to longterm diseases of insidious onset such as cardio vascular illness, diabetes, musculoskeletal and mental illnesses. They have multiple symptoms due to decline in the functioning of various body functions. Dentists should be aware of various physical, mental emotional and psychological changes in the geriatrics (Arthur A Weiner, 1985).

Older adults are more susceptible to oral conditions or diseases due to an increase in chronic conditions and physical/mental disabilities. Thus, old people form a distinct group in terms of provision of care (Little, 2004). Aging affects oral tissues, as any other part of the human body. However, many age related changes apparent in mouth and in the functions of the stomatognathic system are secondary to extrinsic factors, other than age per se (Anastassia & Anastasios, 2007)

According to the policy basis for the WHO oral programme a) oral health is integral and essential to general health, b) it is a determinate factor for quality of life, c) oral health and general health are interrelated and d) proper oral health care reduces premature mortality (Petersen, 2003).

Literature reviews has identified several factors that influenced healthy aging, including physiological, cognitive and environmental factors ((Boyle & Counts, 1988; Ebersole & Hess, 1994; Hansen-Kyle., 2005). Healthy aging is influenced by culture, which is learned and shared beliefs and values, and life-ways of a particular group that are transmitted from one generation to the next (Spradley, 1980). Cultural values largely determine the definition and status of older adults because culture influenced individuals thinking, belief, decision making and actions (Miller, 1991; Leininger, 2004). Health care professionals need to be aware of such cultural factors in order to ensure that elderly people in their care maintain a good quality of life while dealing with the natural problems of aging (Chuleekorn danyuthasilpe *et al.*, 2009).

Geriatric patients seeking dental consultation and care may present with signs and symptoms of undiagnosed medical problems or conditions or may have a significant health history and be under the care of a physician. These undiagnosed ailments and the ones being treated using pharmacological agents result in development of various oral manifestations. Changing life style especially changes in dietary habits and sedentary life style has resulted in increase in prevalence of disease like diabetes, hypertension etc.

Epidemiological studies demonstrate that prevalence of diseases is increasingly rapidly among Indian urban populations and using the current definitions more than two-fifths of Indian urban populations is hypertensive and 3% of rural population and 10%-

11% urban population are diabetic⁶. It is said that the prevalence is lower in rural populations, but is increasing due to large number of people flocking from rural to urban areas (Hansen-Kyle, 2005).

Both the disease and the drug adversely affect the patient's well- being. They are mostly said to cause oral side-effects such as xerostomia, pain, altered taste sensations, gingival overgrowth , salivary gland swelling and pain , lichenoid reactions ,burning sensations, parasthesia etc that require assessment and potential intervention by oral physician .

Thus our aim would be to achieve optimal oral health, thus enhancing overall health of the geriatric patients. This begins with a concerted effort between the patient, the healthcare and dental teams. This unified approach should assist geriatric patients to maintain optimal oral health and a high quality of life. It is imperative that clinicians gain familiarity with the patho – physiology and pharmacotherapy of systemic diseases to provide safe and effective dental treatment for this vast segment of the population. Hence, this study was designed to estimate the common oral manifestations in geriatric population with systemic diseases in Jaipur district Rajasthan.

2. Aims and objectives

1. To estimate the prevalence of geriatric patients visiting the OPD of Jaipur Dental College Jaipur, Rajasthan.
2. To estimate prevalence of systemic disease amongst the elderly population.
3. To co relate oral findings with the associated systemic disease.
4. To evaluate dental treatment outlook among geriatrics for the various dental and medical problems and the underlying psychology in this age group.

3. Materials and methods

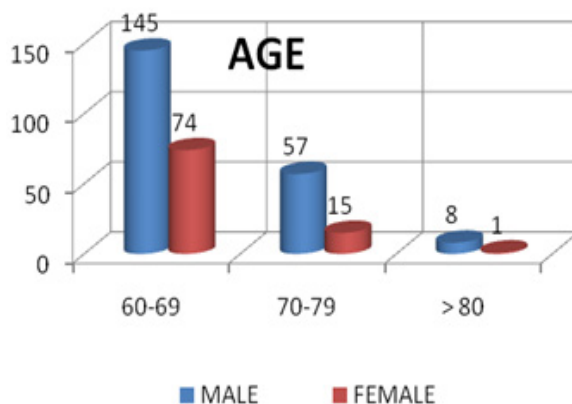
This cross- sectional study compromised of multi ethnical groups selected from those attending the Out Patient Department (OPD) of Jaipur dental college.

Patients aged over 60 yrs were screened for a period of six months. Three hundred patients with any systemic disease were included in the study. All the subjects were examined thoroughly and the data collected was recorded in a case history proform . The patients who were willing were explained about the study and were thus included with a written consent. The patients were divided into three age groups: 60 – 69, 70 – 79, >80 years. Data collection included recording of a detailed case history of all the patients in a case Performa with special focus on the medical history, drug history, duration and frequency of drug intake, and oral hygiene measures. Patient's periodontal status was recorded using indices [OHI – S: Simplified oral Hygiene index, GI: gingival index – Loe and Silness]. The data collected were recorded and statistically analyzed.

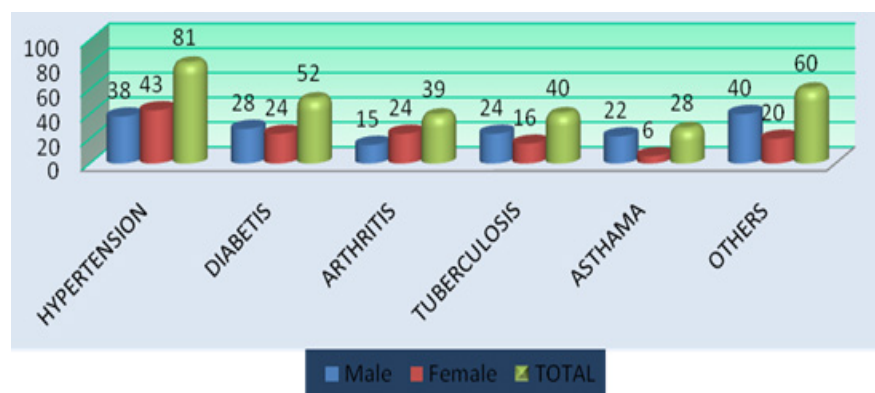
4. Results

The major variables compared were the various oral manifestations in the three different study groups, sex and various systemic illnesses prevalence and their respective oral manifestations.

Fig.1. The sample consisted of 300 patients which were divided into 3 groups.



Group-I consisted of Geriatric patients aged between 60-69 yrs: 73%, 145 males and 74 females. Group – II: 70-79 yrs: 27%, 57 male and 15 female. Group- III: 80 yrs 3% i.e. 8 males and 1 female, thus least prevalent. This shows majority of the population (73%) who were aware about the dental and medical illness ranged between 60-69yrs.

Fig.2. Shows the distribution of the sample affected with different systemic diseases.

It included Hypertension (27 %), Diabetes (17.3 %), Tuberculosis (13%), Arthritis (13 %), Asthma (9 %) and the other least common diseases comprising of hypotension, gastritis, Cataract etc. These diseases had a male predominance except for hypertension and arthritis where females were most commonly affected. Females though belonged to a smaller group gave prevalence of these diseases. This probably could be because of the sedentary life style, stress, apprehension and hormonal imbalances. Women tend to express their emotions whereas men believe in being physically and mentally strong which could be a cause of lesser men reporting of their illnesses.

Table 1. Shows the distribution of various oral manifestations in the male and female subjects.

Signs/Symptoms	Sex		Total	χ^2	d.f	P-value	Significance
	Male (n=210)	Female (n=90)					
Xerostomia	123(40.96)	51(16.98)	174(57.94)	0.090	1	.05	NS
Pain	40 (13.32)	16 (5.33)	56 (18.65)	0.070	1	.05	NS
Altered taste	39 (12.99)	15 (5.00)	54 (17.98)	0.150	1	.05	NS
Gingival swelling	38 (12.65)	16 (5.33)	54(17.98)	0.000	1	.05	NS
Gingival inflammation	23(7.66)	16(5.33)	39(12.99)	2.590	1	.05	NS
Burning sensation	30(10.00)	6(20.00)	36(11.99)	3.460	1	.05	
Ulcers	19(6.33)	4(13.32)	23(7.66)	1.290	1	.05	NS

The different oral manifestations amongst these subjects due to the diseases and effect of the drugs in the decreasing order seen were xerostomia (57.94%), pain (18.65%), altered taste (17.54%), burning sensation (11.99%), ulcers (7.66%), periodontal problems which could be associated with Gingival inflammation(12.99%) and swelling (17.98 %) accounted to be common findings.

Xerostomia is the most common oral finding as it is the common side effect of most of the drugs (Jacon mintzer, 2004). Aging causes fibrosis of the salivary glands and hyperplasia of the taste buds leading to xerostomia and altered taste sensation (Carlos Antonio Negrato & Olinda Tarzia, 2010). Fig.3 Shows the distribution of various oral manifestations associated with systemic diseases, xerostomia (27.63 %) was the most common feature followed by altered taste in hypertensive patients. In diabetics periodontal problems (23% gingival swelling, 17% gingival inflammation) accounted to be the most common problem.

In arthritis patients lichenoid reactions (25%) followed by gingival inflammation and hyperplasia (17%) was most prevalent. Pain and altered taste was seen commonly in tuberculosis. Majority of asthmatic patients had periodontal findings followed by burning sensation in hypotensive patients. As most of the patients had a definite medical and drug history this acts as a predisposing factor towards the varied oral findings among this study group.

5. Discussion

In the recent years, there has been increased evidence of an interrelationship between oral and general health. This has been a subject of dispute for many years, and various studies have provided various results, this could be because of the population studied,

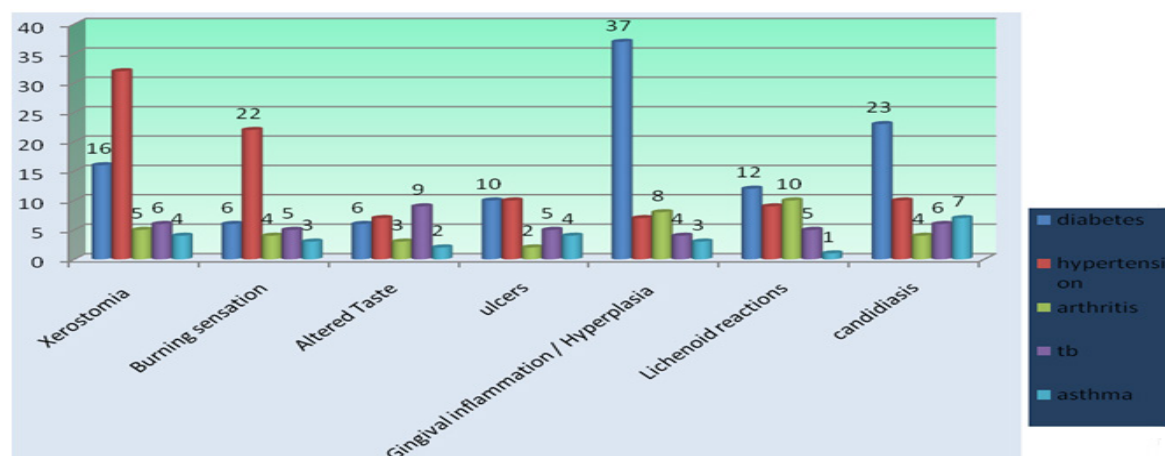
the area etc (Barneet, 2003).

Amos et al. 1997 estimated that 124 million people worldwide were living with diabetes. By the year 2010, the number of people with diabetes worldwide is projected to reach 221 million, and in certain regions of the world (for example, Asia, Africa), diabetes rates could rise twofold or threefold.

In the present study, also the prevalence of diabetes was also high. Periodontal findings along with taste disturbance were a critical component of oral health that affected adversely in diabetes (Ship & Chavez, 2001; Settle, 1999).

The susceptibility to periodontal disease-often called the “sixth complication of diabetes mellitus” (Vernillo, 2001) is the most common oral complication of diabetes. Gingivitis and periodontal disease; xerostomia and salivary gland dysfunction; increased susceptibility to bacterial, viral and fungal infections, taste impairment; lichen planus and burning mouth syndrome are some of the most commonly affected oral manifestations (Anthony, 2003).

Fig. 3 Showing distribution of orla manifestation associated with systemic disease



According to Joshi et al (2007) the prevalence of hypertension was 7.82% however, it was higher in females(10.5%) than in males (6.1%).As per a study done in Nagpur the percentage of hypertensive patient increased in 60+ age group(22.22%) than the younger population^{16,15}.

The prevalence of self-reported hypertension was 13.3% in men and 17.7% in women. Which co related with our study where in 12% men and 14.3 % women were hypertension .This could be due to the sedentary life style and stress bearing capacity amongst the females who reported to the OPD with the diseases.

Antihypertensive drugs can present oral manifestations in the form of xerostomia, lichenoid reactions, burning mouth sensation, loss of taste sensation or gingival hyperplasia ((Joshi *et al.*, 2000;Christos Pitsavos *et al.*, 2006).Elderly asthmatic patients mainly include subjects who acquired the disease during childhood or adolescence and whose disease progressed over time or relapsed after periods of remission. However, the first manifestations of asthma may also occur in the late adulthood or after 65 years of age (Weiner *et al.*, 1998). Anti-asthma drugs are mostly associated with dry mouth (Casaburi *et al.*, 2000) but in this population gingival hyperplasia was most prevalent followed by xerostomia. The probable reason could be due to the poor oral hygiene and varied tobacco chewing habits in this part of the country.

Carlos et al (2010) in his study on 49 arthritis patients undergoing various treatment found erosive lesions, candidiasis , gingival hyperplasia were most common lesions which is in accordance to the study done where in gingival hyperplasia followed lichenoid reactions, candidiasis and oral ulcers .Thus systemic diseases and the medication have severe implications on the maintenance of oral health (Ghezzi & Ship, 2000). This could complicate the oral health by causing caries, periapical abscesses, loss of teeth; impaired ability to wear dental prostheses etc. So as oral physicians we should take considerable efforts for proper management of the elderly population.

6. Conclusion

Oral health is an important factor in determining the quality of life in aged individuals. The role of the oral physicians includes the management of systemic, nutritional and pharmacological oral manifestations in order to establish an early diagnosis and subsequently an early accurate treatment. Patients regularly take prescription and nonprescription medications, so dentists should always

take thorough medical history. The increased number of aged individuals implies an important demographic change worldwide. Therefore, it is important to plan accordingly for the well being of the elderly.

There is a need for delivery of a comprehensive care providing preventive, curative and rehabilitative services to the elderly. Unlike the developed countries, India does not have well structured health services for the elderly, leading to a relatively ad hoc system of health care delivery to this vulnerable population. Specialized geriatric health services have to be developed, to educate, develop and maintain healthy lifestyles and to provide comprehensive health care.

7. References

1. Arthur A Weiner (1985) The psychophysiologic etiology of anxiety in the geriatric dental patient, special care in dentistry. *Geriatric Dentistry*. 5 (4), 174-177
2. Little JW (2004) Special medical concerns in the dental management of older adults. *Gen Dent*. 52(2), 152-156
3. Anastassia E kossiono and Anastasios S Dontas (2007) The stomatognathic system in the elderly .Useful information for the medical practitioner .*Clinical Interventions in Aging* 2007, 2(4), 591-597
4. Petersen PE (2003) The world oral health report continuous improvement in the oral health in the 21st century-the approach of the WHO global oral health programmes. *Community Dent. Oral Epidemiol*. 33, 81-92.
5. Boyle JS and Counts MM. (1988) Toward healthy aging: a theory for community health nursing. *Public Health Nursing*, 5, 45-51.
6. Ebersole P and Hess P (1994) Toward healthy aging: Human needs and nursing response, 4th edn. Mosby-Year Book, St. Louis, MO.
7. Hansen-Kyle L (2005) A concept analysis of healthy aging. *Nursing Forum*, 42, 45-57.
8. Spradley JP (1980) Participant Observation. Holt, Rinehart and Winston, NY.
9. Miller MP (1991) Factors promoting wellness in the aged person: an ethnographic study. *Advances in Nursing Sci*. 13, 38-51
10. Leininger MM (ed.) (2004) Culture care diversity and Universality: a Theory of Nursing. Jones and Bartlett, Boston.
11. Chuleekorn danyuthasilpe, kwanjai amnatsatsue, chanuantong tanasugarn, patcharaporn kerdmongkol1 and Allan B. Steckler (2009) Ways of healthy aging: a case study of elderly people in a Northern Thai village Health Promotion International Advance Access published pp: 1-10
12. Amos AF, McCarty DJ and Zimmet P (1997) The rising global burden of diabetes and its complications: estimates and projections to the year 2010. *Diabet. Med*. 14(Sup. 5), S1-85.
13. Ship JA and Chavez EM (2001) Special senses: Disorders of taste and smell. In: Silverman S Jr, Eversole LR, Truelove EL, eds. *Essentials of oral medicine*. Hamilton, Ontario: BC Decker. 277-288
14. Settle RG (1999) The chemical senses in diabetes mellitus. In: Getchell TV, ed. *Smell and taste in health and disease*. NY, Raven Press. 829-843.
15. Vernillo AT (2001) Diabetes mellitus: relevance to dental treatment. *Oral Surg. Oral Med. Oral Pathol. Oral Radiol. Endod*. 91, 263-70.
16. Anthony T Vernillo (2003) Dental considerations for the treatment of patients with diabetes mellitus. *The J. American Dental Association*. 134 (Suppl 1), 24S-33
17. SV Joshi, JC Patel and Dhar HL (2000) Prevalence of hypertension in Mumbai. *Indian J. Med. Sci*. 54 (9), 380-383.
18. Christos Pitsavos, George A Milieo, Demosthenes B Panagiotakos, Dimitra Xenaki, George Panagopoulos and Christodoulos Stefanadis (2006) Prevalence of self-reported hypertension and its relation to dietary habits, in adults; a nutrition & health survey in Greece, *BMC Public Health*. 6,206
19. Weiner P, Magadle R, Waizman J, Weiner M, Rabner M, and Zamir D (1998) Characteristics of asthma in the elderly. *Euro. Respiratory J*. 12 (3), 564-568.
20. Gonsalves WC, Wrightson AS and Henry RG (2008) Common oral conditions in older persons. *Am. Fam. Physician*, 78:845-852.
21. Carlos Henrique Silva, Mario Newton and Sandra Regina (2010) Oral events related to oral methoxtrate in rhreumatic arthritis.

Braz. Oral res. 24(3), 368-373

22. Ghezzi EM and Ship JA (2000) Systemic diseases and their treatments in the elderly: impact on oral health. *J. Public Health Dent.* 60, 289-296.

23. Carlos Antonio Negrato and Olinda Tarzia (2010) Buccal alterations in diabetes mellitus *Diabetology & Metabolic Syndrome.* 2:3.