ORIGINAL ARTICLE

Prevalence of Xerostomia in Healthy Individuals

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ABSTRACT:

Objective: To determine the prevalence of Xerostomia in apparently healthy individuals.

Methodology: This prospective cross sectional study was conducted on persons accompanying the patients at Medical and Dental OPD of Muhammad Medical College, Mirpurkhas in collaboration with Liaquat University of Health Sciences (LUMHS) Jamshoro from January 2016 to July 2016. 156 patients visited and the accompanying persons were 3015. Only adults were included and 915 patients consented to participate. Standardized questionnaire regarding demographic details, systemic diseases, use of drugs, and cigarette smoking was filled. Fox questionnaire was used to confirm Xerostomia. The data collected was analyzed by SPSS version 22. Qualitative variables were expressed as number and in percentage.

Results: Among nine hundred and fifteen participants, age range was 21-65 years. The mean age was 47±7.6years, those above 30 years were 813 (88.9%), whereas under 30years were 102 (11.1%). Xerostomia was more common in persons above 30 years and difference between two age groups was statistically significant. In our study, 317 (34.6%) gave history of tobacco consumption as cigarettes or gutka or pan. Out of 915 patients, 508 (55.5%) had systemic diseases. Out of these 508 only 387 (76.1%) were taking medications. A significant association of Xerostomia with drug intake was seen.

Conclusion: The frequency of Xerostomia in apparently healthy subjects was high and alarming. Predisposing factors were age, female gender, systemic disease, use of drug and tobacco consumption.

Keywords: Xerostomia, Systemic illness, Drugs, Tobacco consumption, Frequency

INTRODUCTION:

Xerostomia is not an uncommon condition. It is a subjective sensation of dry mouth. The dryness is due to reduced or absent saliva. It could be a symptom or side effect of radiation or drugs, common in old age and affects about 20% elderly[1]. Normal salivary function is mediated by M_3 (Muscarinic Receptors). After stimulation of oral mucosa, signals are transmitted to salivary nuclei in medulla. These nuclei are also influenced by cortical input due to taste, smell, anxiety and depression. The efferent nerves are cholinergic and increase salivary secretions[2]. The increased incidence in women could be due to the menopause, and also because of depression which is common in women[3].

The saliva has defensive role in oral environment and decreased salivary secretions predispose to increase risk for oral diseases. Saliva has multiple functions. These include transportation of nutrients and digestive enzymes, lubrication of oral cavity, re-mineralization of teeth; it also helps in chewing and swallowing. Many studies have reported that 1 in 5 people have Xerostomia, but there is increased prevalence in elderly[4].

Symptoms of dry mouth are variable. They may be mild in the form of discomfort, or severe, interfering with dietary intake and quality of life[1]. It also has antimicrobial action due to the secreted immunoglobulins which adhere and inhibit growth of viruses and bacteria[5]. It also facilitates speech and taste and if there is loss of salivary gland function, it leads to dysguesia that is altered taste[6]. Sjogrens syndrome is an autoimmune disorder in which there is Xerostomia and xeropthalmia[7]. It is also seen in diabetes[8]. Radiation and chemotherapy also cause Xerostomia, especially radiation of head and neck[9].

Xerostomia is a subjective feeling of dry mouth[6]. Saliva has a critical role in digestion, lubricates bolus of food while swallowing, cleans oral cavity and has a buffering capacity for acids in food and those produced by microflora in plaque. Inadequate production of saliva will lead to caries and candidiasis, and loss of tooth structure due to abrasion and erosion[10].

Oral health is much more than just healthy teeth. It affects looks, socialization, as well as physical and psychological wellbeing. Patients should be inquired about dryness of mouth on routine dental checkup, as this problem can affect their quality of life. There is an increased risk for periodontitis in such patients. Adequate research has not been done in our set up to find the prevalence of this important disorder, so this study was undertaken to find its frequency in apparently healthy individuals, and then to find cause and preventive measures for its control.

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METHODOLOGY:

This prospective, cross sectional study was conducted on persons accompanying the patients at Medical and Dental outpatient departments of Muhammad Medical College Mirpurkhas in collaboration with Liaquat University of health sciences Jamshoro from January 2016 to July 2016, after approval from Ethical Review Committee of the institution. The persons accompanying the patients were initially screened by asking them about history of dryness of mouth; whether it is always, frequently or never. Those who answered in affirmative for first two questions were selected, written consent was taken and questionnaire was explained to them. Fox questionnaire[11] translated into Urdu and Sindhi was filled in.

About 10,156 patients visited the OPD and attendants were 3015. 915 subjects consented to participate. Male or female attendants who were more than 18years of age were selected for the study. Pregnant females or patients with a history of radiotherapy were excluded. Xerostomia was diagnosed by history of dryness and confirmed by questionnaire. Demographic details regarding age, sex, smoking habits, consumption of pan or gutka, systemic diseases, and medicine was recorded. The data was analyzed by SPSS version 22. Independent variables were expressed as number and in percentage.

RESULTS:

Among 915 participants, age range was 21-65 years. The mean age was found to be 47±7.6years. 813 out of 915 (88.9%) subjects were above 30 years of age and difference between two age groups was statistically significant i.e. ($p<.0001$). 317 (34.6%) gave history of tobacco consumption as cigarettes, gutka or pan.

Out of 915 patients 508 (55.5%) had systemic diseases including thyroid disease, anxiety, diabetes mellitus, HIV, Hepatitis C infection, or autoimmune disease such as Sjögren's syndrome. 407 had no systemic diseases. Out of these 508, only 387 (76.1%) were taking medication, while 121 (3.9%) did not take treatment. There was a significant association of Xerostomia with drug intake. The Fox[11]questionnaire included following questions:

Q-1: Does your mouth feel dry when eating a meal?

Q-2: Do you sip liquids to aid in swallowing dry foods?

Q-3: Do you have difficulties swallowing any food?

When Fox questionnaire was analyzed, 57% responded in positive to any one question of the questionnaire. 43% had any of the symptoms, where as 3.2% gave positive answer to **question no-1.** 27.9% gave positive answer to **question no-2.** 1.2% gave positive answer to **question no-3.** 15.8% gave positive answer to **question no-1 & 2.** 0.9% gave positive answer to **question no-1 & 3.** 4.3% gave positive answer to **question no-2 & 3.** 12.5% gave positive answer to **question no-1, 2&3**.

DISCUSSION:

Xerostomia affects mainly older population and the range is 12-47%[12]. The prevalence is 10% in people in their early thirties[13]. Drugs used for systemic diseases have been identified as major risk factor[14]. Xerostomia is related to oral-health-related quality of life[15]. The role of saliva is protection against bacteria and fungi. It also re- mineralizes teeth due to its calcium and helps in chewing food, swallowing and speech. Xerostomia predisposes to halitosis, soreness of mouth, difficulty in swallowing, and altered taste[16].

The prevalence of Xerostomia is variable as has been found in various studies. In England it was found in 12.7% of patients[17]where as, in our study it was 55.5%. This could be due to high environmental temperature, decreased intake of water, and consumption of pan and gutka. In Scandinavian countries, the incidence of Xerostomia ranged from 0.9-64.8%[18,19]. A study in Iran reported increased prevalence in elderly people i.e., 38%; our study also showed high occurrence in elderly (88.9%). Another study reported Xerostomia in 55%[18].

In our study, 61.3% women reported Xerostomia and this number was higher than men. Studies from Saudi Arabia and Japan reported similarly whereas other studies reported opposite and found male predominance[18,19,20]. In a study by Orellana et al, no difference was found in prevalence of Xerostomia in men and women[21].

Studies by Porter et al[14] and Borges et al[22] concluded that cigarette and tobacco predispose to dryness of mouth. Smoking or oral tobacco consumption predispose to Xerostomia, this is also reported by other studies[23,24]. Xerostomia and presence of systemic diseases go hand in hand because systemic diseases are main cause of Xerostomia and use of medicine due to illness exacerbates it. In our study, 49% had systemic disease and 73% used drugs; a positive correlation was seen. In our study, the commonly used drugs were anti-hypertensive, oral hypoglycemics, analgesics and antidepressants[25,26,27], this was also reported by Thomson et al[28].

CONCLUSION:

The study concluded that Xerostomia is common in our community, with a predisposition in females, elderly individuals, those having systemic illness and using drugs, and tobacco consumers. Owing to its prevalence, management should be multi- disciplinary, by involving physicians to alter the medication, patient education and life style modification. Masses should be educated about effective removal of plaque with twice daily tooth brushing, flossing and use of mouth washes.

LIMITATIONS

We were unable to determine the quantity of saliva; both un- stimulated and stimulated saliva flow, consistency, pH, ability to buffer acids and level of bacteria. Sialography could not be done due to lack of resources.

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