

Prevalence of Burning Mouth Syndrome in four Dental Schools in Tehran

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ABSTRACT

Statement of the problem: Burning Mouth Syndrome (BMS) is a condition presented with burning sensation without any pathologic changes of oral mucosa. Since there are no accurate diagnostic criteria and because symptoms are so variable the studies have shown different prevalence. Limited studies have been performed to estimate prevalence, of BMS in Iran and worldwide.

Purpose: This research was conducted among Iranian patients to four dental schools in the City of Tehran in 2007.

Materials and Methods: A cross-sectional study was carried out on 650 patients, 269 men and 381 women (originally Iranian) attending four dental schools in Tehran: Shahed, Shahid Beheshti, Tehran and Islamic Azad University in 2007. The sampling method was non-randomized as all the patients attending the four oral medicine departments on a certain period were included in this study.

A questionnaire was designed to collect data on demographic characteristics, medical history and drugs taken by the patients.

Results: Patients' age ranged from 11 - 81 years (mean 35.63 ± 12.98). Totally, 9 patients had burning mouth without any underlying oral lesion.

Conclusion: Burning Mouth Syndrome in the Iranian population has low prevalence and is more frequent in females. Furthermore, it is associated with xerostomia and taking medications.

Keywords: Burning Mouth Syndrome, Xerostomia.

INTRODUCTION

Burning Mouth Syndrome (BMS) is a condition presented with burning sensation without any pathologic changes of oral mucosa ⁽¹⁾.

Several terms are used interchangeably to emphasize quality and location of pain such as stomatopyrosis, glossopyrosis, stomatodynia, glossodynia, sore mouth, sore tongue, and oral dysesthesia ⁽²⁾.

Since there are no accurate diagnostic criteria and because symptoms are so variable the studies have shown different prevalences. The most common estimated prevalence of BMS is in the range of 0.7% and 14.8% in general population ⁽²⁾. The syndrome occurs principally in middle-aged, pre and post-menopausal women ⁽³⁾.

Patients may describe the pain as a prolonged burning sensation in oral mucosa, with moderate to severe intensity that may vary during the day ^(2,4,5). Other symptoms may include: xerostomia and dysgeusia or both ^(2,5).

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A useful clinical classification of BMS was proposed by Lamey and Lamb based on the pattern of symptoms and progress ⁽³⁾:

Type 1 is characterized by being pain free after waking up from sleep and gradually burning sensation develops in late morning and the intensity increases throughout the day. This type is usually observed in patients with systemic diseases such as malnutrition and diabetes which approximately consist 35% of the BMS patients ^(2,3).

Type 2 is characterized by continuous pain throughout the day that interferes with patients' sleep. Therefore, patients usually experience changes in their mood, eating habits and they tend to socialize less in the community. About 55% of patients are included in this type ⁽³⁾.

Type 3 is accompanied by intermittent symptoms with atypical location and pain. These patients experience pain-free periods during the day. This type constitutes 10% of BMS patients and tends to affect unusual sites such as the floor of the mouth, buccal mucosa, and throat ⁽³⁾. Type 3 patients show agitation and allergic symptoms especially to food additives ⁽⁵⁾.

Among the three classifications, Type 1 patients experience a higher rate of resolution than Type 2 and 3 ⁽²⁾. According to previous studies psychiatric factors, especially chronic anxiety are related to Type 2, and also type 3. Patients explain emotional instability and allergy as the main associated factors ^(3,5). It is not clear whether psychopathologic distress is the cause of the oral symptoms or the former is the result of chronic pain experience ⁽⁶⁾.

Limited studies have been performed to estimate prevalence of BMS in Iran and worldwide ^(7,8). Therefore, this research was conducted among Iranian patients attending four dental schools in the City of Tehran in 2007.

MATERIAL & METHODS

A cross-sectional study was carried out on 650 patients, 269 men and 381 women (originally Iranian) presented to four dental schools in Tehran: Shahed, Shahid Beheshti,

Tehran and Islamic Azad in 2007. The sampling method was non-randomized as all the patients attending the four oral medicine departments on a certain period were included in this study.

A questionnaire was designed to collect data on demographic characteristics, medical history and drugs taken by the patients. Also history of radiotherapy, chemotherapy and psychological problems were included. Other questions were about the status of menopause in female patients, details regarding smoking and its onset, number of cigarette smoked per day, wearing denture or not, difficulty in swallowing, presence of tinnitus in the ear, burning sensation, onset and site of burning.

Clinical examination was performed on patients with burning sensation. The site of burning sensation, absence or presence of lesion, burning duration, pain initiating factors (eating, brushing) and type of pain (burning, throbbing, stabbing, radiating), were recorded in the questionnaires. Additional information regarding concomitant problems such as xerostomia, smell and sleep disorders, malaise and parafunctional habits (tongue thrusting, clenching, lip or cheek biting, mouth breathing, lip sucking) were carefully obtained.

In order to record the intensity of burning sensation objectively, patients were asked to choose a number on the visual analogue scale (VAS) graded from zero (no pain) to ten (the worst pain experienced). Data were analyzed by Excel 2003 and SPSS 11.5 software.

RESULTS

Questionnaires for 650 patients, 269 men and 381 women were completed and necessary clinical examinations performed. Patients' age ranged from 11-81 years (mean 35.63 ± 12.98). Data showed that only 23 patients had burning mouth (42.1% males, and 57.9% females).

Fourteen patients had burning mouth related to an oral lesion (5 men and 9 women). The oral lesions were diagnosed as aphthous

ulcers (4 cases) geographic tongue (2 cases) and oral candidiasis (8 cases).

Totally, 9 patients had burning mouth without any underlying oral lesion (Table 1) which all were females with age range of 28 to 75 years old (mean 48.22 ± 15.2). Among them, 4 women were experiencing menopausal period.

The prevalence of BMS was estimated to be 1.3 % with the confidence interval (CI) of 1.3 ± 0.08 . The most common site for BMS was the tongue (6 cases; 67%). The minimum and maximum time durations were 3 and 60 months (mean 23.66 ± 23.17), respectively. The majority of the patients stated that the onset of pain was spontaneous. BMS type 3 was the most

common type. According to visual analogue scale (VAS) the minimum and maximum levels of burning intensity were 4 and 6, respectively (mean 5.1 ± 0.6).

Three patients used to wear dentures and 5 had parafunctional habits. Three of the patients had a history of visiting a psychologist. None of the patients had received chemotherapy or radiotherapy, and none of them smoked.

All of the patients were affected by xerostomia. Cardiovascular disorders were the most frequent systemic disease reported in BMS patients. Cardiac and anti-hypertensive medications were the most frequent medications taken by the patients.

Table 1: Number and age range of BMS patients in four dental faculties in the city of Tehran

	BMS patients without lesion			
	Total	Age Range	male	female
Shahed	1	18-46	1	
Tehran	4	28-65	4	
Islamic Azad	0	32-70		0
Shahid Beheshti	4	37-75		4

DISCUSSION

The BMS patients were identified by oral examination and their subjective complaints are sensation of burning. In this study, the prevalence of BMS was 1.3 ± 0.08 %. As the range of CI is so narrow the estimated prevalence could be very close to that of the community.

This finding is consistent with the study reported by Scala, but is less than that of reported by Bergdahl, Baharvand and Brailo

et al. ^(1,8,9). In a systematic review Patton *et al.* reported 0.7% prevalence for the US population, but this was 15% for the general population of Finland and was 13% in a study in the University of Naples ⁽⁷⁾. In the present study, BMS was only observed in females. This result was consistent with that of Bergdahl, Grushka, Lamey, Al Quran and Baharvand ^(1,4,6,8,10). The mean duration time, in the current study was 23.66 months, whereas in Hakeberg's study the duration time in 85% of patient's

was more than 6 months, and in Lamys study it was 2-5 years^(11,3). According to the study of Bergdahl and Grushka, the most common site for burning sensation was the tongue which is in agreement with our findings^(1,4). Regarding to the visual analogue scale (VAS), in this study, the average level was 5.1. Bergdahl and Hakeberg reported 4.6 and 3.8, respectively^(1,11). In this research, most of the subjects had experienced burning sensation spontaneously without any clear stimuli, while in Grushka's study 57% of the patients expressed idiopathic burning sensation and 32% reported burning sensation after dental procedures⁽¹⁵⁾. In the present study, all BMS patients had xerostomia. Investigations performed by Brailo and Baharvand on BMS have been demonstrated 36% and 7.2% prevalence of xerostomia in patients, respectively^(8,9). Bergdahl and Hakeberg demonstrated higher prevalence of xerostomia in BMS patients^(1,11).

CONCLUSION

Burning Mouth Syndrome in the Iranian population has low prevalence and is more frequent in females. In addition, it is associated with xerostomia and taking medications.

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