Original Article

CLINICAL CHARACTERISTICS AND TREATMENT OUTCOME IN THE BURNING MOUTH SYNDROME:

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ABSTRACT

Objectives: *To evaluate and analyze the occurrence, clinical characteristics and treatment outcomes in patients with burning mouth syndrome.*

Material and Methodology: *Data of sixty patients with burning mouth syndrome reported to the private clinic of the author from January 2003 to March 2008 were reviewed. Clinical examination and treatment follow up was carried out. Data regarding the age, gender, main site of involvement, associated symptoms and treatment outcome were evaluated and analyzed.*

Results: *Females outnumbered the males. The most common age group involved was 41-50 years. Main sites of involvement were anterior 2/3rd of tongue (58.6%), followed by labial mucosa (13.3%). The common complaint associated with burning mouth was dry mouth (90%) followed by taste loss (63.3%). Significant improvement (91.3%) was noticed in patients managed with the combination of systemic antidepressants, clonazepam and strong reassurance.*

Conclusion: *Burning mouth syndrome was more common in aged females. Common site of involvement was anterior 2/3rd of tongue. Improvements in symptoms were more significant when antidepresssants were combined with clonazepam and strong reassurance.*

Key Words: *Burning mouth syndrome, Dry mouth, Treatment outcome, Clonazepam.*

INTRODUCTION

Burning mouth syndrome (BMS) is defined by the International Association for the Study of Pain as burning pain in the tongue or other mucous membrane associated with normal signs and laboratory findings lasting at least 4 to 6 months.[1] This pain may have associated symptoms that include subjective dryness of the mouth, paresthesia and altered taste.[2] Medical and dental causes can not be found for this continuous burning pain in oral cavity.[3]

Historically, BMS has been referred to by many names based on the quality or location of pain in the oral cavity.[3,4] Some of these names include glossodynia, stomatodynia, glossopyrosis, stomatopyrosis, sore tongue, scalded mouth syndrome and oral dysesthesia.[3,4,5] The use of multiple terms attests to the confusion and uncertainty that prevailed in the scientific literature and in clinical practice.[6] These terms also exhibit the difficulty for the patients and the practitioner in evaluating these individuals.[7] BMS has prevalence that varies from 0.6 to 15% in general population and has average duration of two to three years.[8] It predominantly affects the middle aged women in pre or postmenopausal phase and in a ratio of 7: 1 when compared to men.[2,9]

A useful clinical classification of BMS was proposed by Lamey[10] and Lamb[11] based on the pattern of symptoms and progress. Type 1 is characterized by being pain free after waking up from sleep and gradu-

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ally the burning sensation develops late in morning and the intensity increases throughout the day. This type may be linked to systemic disorders, such as nutritional deficiency and endocrine disorders. Type 2 is characterized by continuous pain throughout the day that interferes with patient's sleep. These patients usually experience changes in their mood, eating habits and tend to socialize less in the community. Type 3 is accompanied by intermittent burning at atypical locations such as floor of mouth, buccal mucosa and throat. These patients frequently display anxiety and allergic reactions.[11]

Patients will present with positive (burning pain, dysgeusia and dysesthesia) and negative (taste loss and paresthesia) sensory symptoms.[2,7] The pain is located mainly in the anterior two third of tongue, dorsum and lateral borders of tongue, hard palate and labial mucosa.[12] Usually the onset is spontaneous but at times there are precipitating events such as trauma, dental treatment and medication use.[2,13,14] The symptoms of BMS presents with varying intensity in different patients. About one third have difficulty with sleep onset. It has been suggested that sleep disturbances and the presence of ongoing pain may explain the increased incidence of mood changes, depression, anxiety and affective motivational disturbances among these patients.[15] Patients with BMS have more non specific health complaints as compared to healthy persons. Headache, dizziness, neckache and backache, irritable bowel syndrome, personality disorders and other psychiatric disorders are reported more frequently in these patients.[15,16]

The etiology of BMS is presumed to be multifactorial involving the interaction between the biologic (neurophysiologic mechanism) and psychogenic factors.[2,6] A plethora of local, systemic and psychogenic factors have been implicated to relate with the etiology of BMS.[7,11] Treatment includes cognitive behavioral therapy, topical therapy (clonazepam, lidocaine, and capsaicin), and systemic therapy (antidepressants, anticonvulsants, antioxidants).[2,5,17] The objective of this study was to evaluate the occurrence, clinical characteristics and treatment outcome in patients with BMS in our population.

METHODOLOGY

This study was carried out on 60 consecutive patients having the features of burning mouth syndrome, at the private clinic of the author at Mardan, Khyber Pukhtunkhwa, from January 2003 to March 2008. Patients who had any systemic disease were excluded from the study. With the consent of the patients all the necessary information about the variables of the study written in preformed proforma were obtained through history, clinical examination and laboratory findings. Main site of involvement and associated symptoms were based on patient complaints. In order to record the intensity of burning sensation objectively, patients were asked to choose a number on the Visual Analogue Scale graded from zero (no pain) to ten (the worst pain experienced). To quantify the responses from to treatments, patients were distributed among treatments of antidepressent + reassurance and antidepressent + Clonazepam + reassurance respectively. The two treatment responses were obtained at 3 months, 6 months and after a year. The data obtained were evaluated and analyzed by applying descriptive statistics, while the treatment response was compared by applying Z-test.

RESULTS

Gender distribution showed that BMS was common in females (71%) with ratio of male to female of 1:2.5. The most common age group involved was 41-50 years with a mean age 49.5+8.85 years. The detail of age distribution is given in Table 1. Main sites of involvement were anterior 2/3rd of tongue (58.6%) followed by labial mucosa (13.3%). Other sites of involvement are given in Table 2. The common complaint associated with burning mouth was dry mouth (90%) followed by taste loss (63.3%). Various other complaints mentioned by the patients are shown in Table 3. It was observed that positive response improved by 4.82% when Clonazepam was added to the treatment. (Table 4). However this difference was statistically not significant (p= 0.5719).

Table 1: Age Distribution of Patients (n=60)

Age groups (years)	No. of patients	Percentage
31-40	9	15
41-50	26	43.4
51-60	18	30
61-70	7	11.6
Total	60	100

Table 2: Main Sites of Involvement (n=60)

Main sites of involvement	No. of patients	Percentage
Anterior 2/3rd of tongue	35	58.6
Dorsum & lateral border of tongue	6	10
Labial mucosa	8	13.3
Buccal mucosa	3	5
Retromolar area	3	5
Floor of mouth	2	3.3
Anterior hard palate	2	3.3
Hard & soft palate	1	1.5
Total	60	100

Table 3: Associated Symptoms in patients with BMS (n=60)

Associated symptoms	No. of patients	Percentage
Dry mouth	54	90
Taste loss	38	63.3
Discharge from mouth	15	25
Cancerphobia	34	56.5
Sleep disturbances	37	61.5
Paresthesia	22	36.5

DISCUSSION

The results of this study showed that BMS affected middle aged women (71%) more in their perimenopausal and postmenopausal phases. Previous studies have also given similar reports about the gender distribution.[2,8,18,19] Few studies have mentioned the presence of BMS in earlier ages,[20] which indicate that its prevalence increases with age.[21] The ratio between females and males varies from 3:1 to 16:1.[2,22] This gender differences may be explained by biologic, psychologic and sociocultural factors.

Patients with BMS, generally, described their symptoms in the oral mucosa using the following words: burning, tender, tingling, hot, scalding, numb and annoying.[2] In this study, it was observed that the pain was mainly located bilaterally in the anterior 2/3rd of tongue (58.6%) followed by the labial mucosa (13.3%), dorsum and lateral borders of the tongue (10%) and buccal mucosa. Other less commonly reported sites include floor of mouth (3.3%), retromolar area (5%), soft palate (3.3%) and throat. Gorsky[23] and co-workers also reported anterior 2/3rd of tongue as common site of involvement in their study. Similar results about the site distribution had also been documented by Baharvand[24] et al. More than two third of the patients in the present study experienced a spontaneous onset of symptoms without any identifiable triggering factors. However, about 25% of the patients attributed the onset of their symptoms to previous illness, such as oral infection, dental procedures and medications use. It, therefore, suggest the possibility of neurologic alterations preceding the onset of burning in these patients.[25] Other individuals related the onset of symptoms to traumatic life stressors.[11,13,17] These symptoms occurred continuously without any period of cessation and remission.

In present study, it was noted that the pattern of daily symptoms was constant for individual patients, with approximately one third of patients experiencing symptoms both day and night. About two third of patients, reported minimal symptoms on awakening, after which the symptoms gradually intensified during the day to culminate on the evening.[1,2] In this study 60% of patients had difficulty with sleep onset. It has been suggested that sleep disturbances and the presence of continuous pain may explain the increased incidence of mood changes, irritability and affective

Table 4: Treatment Outcome (n=60)

Type of treatment	Positive response	No response	Total
*Antidepressants + Reassurance	32(86.48%)	5(13.52%)	37 (100%)
Antidepressants + **clonazepam+ Reassurance	21(91.30%)	2(8.70%)	23 (100%)
Total	53	7	60

*Nortriptyline (HCl) 10mg & Fluphenazine 0.5mg,
**0.25 -2 mg/day

motivational disturbances among these patients.[15] It has been noted that the burning sensation increased in the presence of personal stress, fatigue and acidic foods. Study showed that patients with BMS had a significantly high incidence of dry mouth (90%), taste loss (63.3%) and cancer phobia (56.5%). Taste disturbance manifested as a persistent alteration in taste (bitter or metallic) or change in taste intensity.[16, 26] The perceived taste disturbances were more in females than males. Bergdahl and Bergdahl[27] had found only weak correlation between burning mouth and taste disturbances. Moreover, studies have not objectively demonstrated reduced salivary flow rates despite the subjective complaints of dry mouth and taste loss.[3,28,29] BMS may also change the individual's general and psychological well being, affecting the quality of life, even though it is not clear if psychopathologic distress is related to this syndrome or if it is a result of the chronic symptoms that these patients passed through.[28] Studies have shown that patients with BMS experience adverse life events more frequently than people without BMS, which may be a risk factor for developing BMS.[16,29,30]

In this study both treatment options highly improved the symptoms of BMS but the addition of Clonzepam was more promising. Reassurance to the patient that his/her complaint is real, is equally important. Antidepressants have long been considered the mainstay for the management of neuropathic pain disorders.[31] An evidence based review of the treatment modalities for burning mouth syndrome was reported by the Cochrane Collaboration.[32] There is anecdotal evidence of some effectiveness for both tricyclic amines and selective serotonin reuptake inhibitors but this is poorly supported in controlled experiments.[33] A study by Maina et al[34] had shown that antidepressants resulted significant improvement in BMS symptomatology. Antidepressants have significant side effects such as somnolence, dizziness, cardiac concerns and xerostomia. Both anecdotal and experimental reports have demonstrated symptomatic reduction with cognitive behavioral therapy with the added benefit of no adverse effects.[3] Further improvement has been noted when cognitive behavioral therapy is combined with pharmacological management.

Anticonvulsants have become more popular lately, for the treatment of neuropathic pain disorders and, therefore, have been tried for burning mouth syndrome. Clonazepam exhibit some promise in the management of BMS.[34] Thus, it appears that low doses are required; however, somnolence and addiction are potential adverse effects to consider in these patients.

CONCLUSIONS

This study showed that BMS was more common in aged females in their pre or postmenopausal phases. Common site of involvement was anterior 2/3rd of tongue while common complaint associated with burning mouth was dry mouth. Improvement in symptoms was more promising when antidepressants were combined with clonazepam and reassurance. Patients having BMS are normally reluctant to visit the pschychiatrist for treatment; therefore, it is advised to manage these patients accordingly.

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