

Assessment of anxiety and depression in patients with burning mouth syndrome: A clinical trial

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ABSTRACT

Introduction: Burning mouth syndrome is a chronic pain syndrome primarily affecting elderly women with hormonal changes or psychological disorders. It is multifactorial in origin, often idiopathic and its etiopathogenesis, majorly being neuropathic, largely remains enigmatic.

Aim: To determine the prevalence of burning mouth symptom, in elderly women and evaluate local and systemic causes responsible for burning sensation.

Materials and Methods: 100 elderly postmenopausal women were included in the study out of which 56 had a chief complaint of burning sensation. These patients were evaluated for the levels of anxiety and depression by means of questionnaire. The severity of burning and the response to the treatment was assessed with a five point Visual Analog Scale. The results were analyzed using “Chi-square” test.

Results: There was statistically significant increase in the levels of anxiety and depression in the study group.

Conclusion: The present study clearly indicates that most of the patients had moderate to severe levels of depression, which suggests that anxiety and depression are constant features in postmenopausal female patients.

Key Words: Burning mouth syndrome, anxiety, depression

INTRODUCTION

Burning mouth syndrome (BMS) is a chronic pain syndrome primarily affecting elderly women with hormonal changes or psychological disorders. It is multifactorial in origin, often idiopathic and its etiopathogenesis, majorly being neuropathic, largely remains enigmatic.

The etiopathogenesis seems to be complex and in a majority of patients involves interaction among local, systemic or psychogenic factors. Pathological lesions of the oral mucosa are usually not evident while the primary complaints are burning and dryness.

Lundy *et al.*^[1] stated that patients with burning mouth complain of intense to unbearable burning or pain that may interfere with eating. Other common lesions associated with burning sensation include lichen planus, oral submucous fibrosis, candidiasis, allergy, nutritional factors, diabetes, menopause and psychogenic factors.

When no clinical lesions are found in accordance with the burning sensation in the oral cavity the condition is termed as BMS and is said to have a strong psychological relationship with the patients being under anxiety and stress. This can be either attributed to age related or hormonal related factors. The diagnostic label of BMS should be given after a thorough clinical and laboratory workup, which does not reveal any possible etiological explanation towards the symptom of burning sensation. Browning *et al.*^[2] states that among their subset of patients evaluated, 56% had no psychiatric morbidity. Therefore they comment that a pure psychogenic origin cannot be inferred in all cases of burning mouth, and organic cause must be sought.

Pajukoski *et al.*^[3] stated that burning sensation can be a very distressful condition especially when its etiology

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cannot be elucidated. If the burning is due to the visible lesions, treating it will resolve the problem. Reiss and Reiss^[4] mention that for appropriate management of a patient with burning, a multidisciplinary approach is needed which includes dentistry, neurology and internal medicine. Lowenthal and Pisanti^[5] say that local measures with reassurance and minor tranquilizers can treat this condition.

The dentist should rule out any pathological process seen in the oral cavity, which is liable to cause burning. Common causes of burning sensation in the oral cavity are discussed in the upcoming text.

As the age advances, there are invariable changes occurring in the body.^[6] Particularly in women there are age related hormonal changes after menopause which aggravates the problem. Moreover, as one ages the mucosa becomes thinner and dry, so complains such as burning, dryness and distorted taste becomes far more common. Xerostomia is also an important factor in postmenopausal women as salivary secretion plays a vital role in the integrity of the oral tissues, in the selection and preparation of food for digestion.

In patients with Sjogren's syndrome or treated with radiotherapy for oral cancer, there is virtually no salivary secretion. They also complain of burning sensation, dysgeusia, difficulty in speech and there may be lobulation and fissuring of the tongue.^[7-9] A number of medicines like antidepressants, antipsychotics, anti-histaminics and anti-diarrhoeal cause burning sensation in the oral cavity.^[10] Brown^[11] uses the term Scaled Mouth Syndrome (SMS) to describe the burning caused by Angiotensin Converting Enzymes Inhibitors (ACE). Lotti *et al.*^[12] states that lithium, griseofulvin, antibiotics and metronidazole cause burning sensation in the oral cavity.

Aims and objectives

To determine the prevalence of burning mouth symptom, in elderly women and evaluate local and systemic causes responsible for burning sensation.

MATERIALS AND METHODS

105 elderly postmenopausal women were included in the study, out of which 05 dropped out and 56 (out of remaining 100) had a chief complaint of burning sensation.

Patients were assessed by a strictly coordinated management protocol based on conventional guidelines namely history and clinical examination. In this study, burning mouth as a symptom was evaluated and the prevalence of burning mouth in middle and elderly

aged postmenopausal women was calculated. The questionnaire was classified as Burning sensation associated with visible lesions and burning sensation not associated with visible lesions. Only those patients who did not have any visible lesions for burning sensations were diagnosed as BMS patients. These patients were also evaluated for the levels of anxiety and depression by means of standardized questionnaires i.e. HAD scale and GHQ-28. The severity of burning and the response to the treatment was assessed with a five point Visual Analog Scale (VAS). Complete hemogram with blood sugar levels were estimated to rule out diabetes. "Chi-square test" was used to evaluate psychological parameters and the results were expressed in percentage, mean, standard deviation (SD), quartiles and graphs.

RESULTS

In the present study the total sample size was 100 out of which 56 patients had a chief complaint of burning sensation [Table 1]. All the patients ranged from age 43 to 85 years. Out of this sample size, 43 patients (40.95%) were found to have burning sensation as their primary chief complaint for which they sought expert opinion and another 13 patients (12.38%) complained about burning as their secondary problem [Table 2]. Out of these 43 patients with primary complaint of burning sensation 7 patients (16.27%) had oral lichen planus and 3 patients (6.97%) had oral ulcers (RAU). 11 patients (25.58%) were taking some medications which are proved to cause burning sensation as their common side effects [Table 3]. Remaining 22 patients (51.16%) did not have any visible oral mucosal lesions but had burning sensation of 3 and above on a VAS (Scale from 1-5) and thus were diagnosed as BMS cases based on the principle of exclusion. There was a strong loading on anxiety and depression based on HAD scale. Of the subset of patients seen 8.43% belonged to the diabetic group.

When tested for psychological variables in 43 patients with burning sensation as their primary complaint it was noticed that 9 patients (20.93%) had no anxiety, 20 patients (46.51%) had mild levels of anxiety and another 14 patients (32.55%) had moderate anxiety [Table 4]. When tested for depression 8 patients (18.60%) of the postmenopausal group showed no depression, 12 patients (27.90%) showed mild depression, 13 patients (30.23%) showed moderate depression and 10 patients (23.25%) showed severe depression [Table 5]. The present study indicates that most of the patients had moderate to severe levels of depression, which suggests that anxiety and depression are constant features in postmenopausal female patients.

Table 1: Prevalence of burning sensation

Present	Absent
56	44

Table 2: Patients with primary and secondary BMS

Primary	Secondary
43	13

Table 3: Conditions associated with primary BMS

Condition	No. of patients	Percentage
Oral lichen planus	07	16.27
Recurrent aphthous ulcer	03	06.97
Side effect of medications	11	25.58
No lesion	22	51.16
Total	43	100.00

Table 4: Anxiety levels

Type	No. of patients	Percentage
No	09	20.93
Mild	20	46.51
Moderate	14	32.55
Total	43	100.00

Table 5: Depression levels

Type	No. of patients	Percentage
No	08	18.60
Mild	12	27.90
Moderate	13	30.23
Severe	10	23.25
Total	43	100.00

DISCUSSION

Zageralli^[13] stated that BMS was a frequent feature seen in postmenopausal women which was consistent with our results.

In the present study, it was found that burning sensation of the mucosa was present in 43% patients. According to Gallagher *et al.*^[14] burning sensation in the oral cavity is due to atrophic mucous membrane of the oral cavity and the depletion of the iron stores in the body.

Lamey and Lamb^[15] call BMS as a multifactorial condition that generally affects women more commonly than men.

In the present study two inventories namely GHQ-28 and HAD were used to check the loading of anxiety and depression in the patients. GHQ-28^[2,16] was given by Goldberg and Hiller in 1978 and is a screening questionnaire,

which measures the anxiety and depression scores. Hospital Anxiety and Depression inventory (HAD)^[15,17] was given by Snaith and Taylor in 1985. This inventory helps the clinician to know the levels of anxiety and depression in an individual.

Maresky *et al.*^[18] and Eli *et al.*^[19] analyzed 65 postmenopausal women and found visible oral mucosal lesions along with burning sensation as primary complaint, in our study out of 43 patients with primary complaint of burning sensation, 7 patients had Oral Lichen Planus and 3 patients had Oral Ulcers (RAU).

In the present study 32.5% patients showed moderate anxiety and 23.2% patients showed severe depression, the results are consistent with the study done by Friedlander *et al.*^[20] where he stated anxiety and depression are features of post menopausal women; however, Forbabosco *et al.*^[21] mentioned that the increase of oral discomfort in postmenopausal women is due to hormonal modification and psychological factors play a secondary role.

The study revealed most of the patients had moderate to severe level of depression, similar finding was observed by Pisanty *et al.*^[22]

The oral mucosal changes reported to be associated with menopause are many and varied with stress in association with oral symptoms. Wardrop *et al.*^[23] mention that there are specific estrogen receptors proteins in human gingiva which can effect cellular proliferation and keratinization in oral epithelium.

CONCLUSION

BMS is a fascinating, though poorly understood, condition in the field of oral medicine. Possible causal factors include hormonal disturbances associated with the menopause, psychogenic factors (including anxiety, depression, stress, life events, personality disorders, and phobia of cancer), and neuropathy. To conclude it can be said that psychological aspect plays a major role in the etiological niche amongst postmenopausal women.

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