

# THE PREVALENCE OF BURNING MOUTH SYNDROME (BMS) IN A PRIVATE INSTITUTE-A RETROSPECTIVE STUDY

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## Abstract

**BACKGROUND:** Burning Mouth Syndrome (BMS) is characterized as a chronic disorder, which manifests as burning, stinging, or itching sensation. The disorder was first described during the middle of the 19th century. It commonly involves the tongue with positive extension to the lip and the oral mucosa. The exact etiology of BMS is imprecise and it's likely to be multifactorial. **AIM:** The aim of the study is to evaluate the prevalence of Burning Mouth Syndrome (BMS) associated with oral diseases in a private institute. **OBJECTIVE:** The primary objective is to identify the oral diseases associated with the burning mouth syndrome; and the secondary objective is to identify the symptomatic and asymptomatic BMS patients, commonly prescribed medications for BMS, and the side effects of prescribed medication used in treating BMS. **MATERIALS AND METHODS:** The study setting was done in a private Institution in Chennai; involving patients visiting the Department of oral medicine and Radiology during the year June 2019- May 2022. Permission to use the data was obtained. A total study population of 60 cases were included which was clinically diagnosed as BMS. **RESULTS:** The prevalence of BMS associated with oral diseases was 45% with a female predilection of 66.7% and males of 33.3%. The most common oral lesions associated with burning mouth syndrome were anemia, oral ulcers, and lichen planus followed by xerostomia. The medication prescribed was Vitamin supplements (Cap. Diavit plus) 48%, followed by antioxidants 30%, and alpha-lipoic acid 19%. No patients reported any side effects from any drug prescribed. **CONCLUSION:** This study is a step towards creating awareness among patients and healthcare professionals. The results show that burning mouth syndrome affects women more commonly than males, with a prevalence of 45% associated with oral diseases seen among burning mouth syndrome patients. Further studies are required on a large sample size in different demographic locations on the prevalence of this challenging disease.

## INTRODUCTION

Burning Mouth Syndrome is a disorder commonly characterized by persistent sensation of burning of entire oral mucosa. <sup>(1)</sup> The International Association for the study of pain defines that burning mouth syndrome lasts for a duration of 4-6 months as a chronic condition; which does not coincide with clinical or laboratory findings. <sup>(3,5)</sup> The condition is likely to be multifactorial, often idiopathic and the etiopathogenesis remains unclear <sup>(4)</sup>.

Alteration in taste was observed as the most commonest sign Other than burning sensation and xerostomia.<sup>2)</sup>

This study aims to evaluate the prevalence of Burning Mouth Syndrome (BMS) associated with oral diseases in a private institute. The Burning mouth syndrome were classified based on the intensity of pain.

According to Lemay and Lewis -3 types

Class I (35%): "Pain-free waking"- burning absent on waking but gradually increases in intensity as the day goes on and maximum intensity during evening

Class II (55%): The burning sensation is continuous throughout the day

Class III (10%): "Pain-free periods"- the burning sensation is intermittent with pain-free periods during the day.

Based on etiology:

According to Scala

Primary (Idiopathic): where the local/ systemic cause could not be identified

Secondary (Etiology-directed therapy): As a result of local/systemic pathological conditions<sup>(4,6)</sup>

Clinical presentation is highly variable from patient to patient. The symptoms of BMS can mainly be of burning/ tingling sensation, numb feeling, and altered/ metallic taste in the tongue.

The Commonest sites of BMS in the oral cavity are the tongue, anterior portion of the hard palate, and the labial mucosa: <sup>(7)</sup>Burning Mouth Syndrome is an important clinical condition which directly or indirectly affects or alters the quality of life.

Because of the complex behavior, the exact etiology remains unclear and has multiple predisposing factors which also involves the neurophysiological mechanism and the psychological factors. Salivary gland dysfunction also plays a significant role in BMS.

Possible theories that could cause BMS:

1. Abnormal interaction between the sensory functions of the facial and trigeminal nerve
2. Sensory dysfunction associated with small or large fiber neuropathy
3. Centrally mediated alterations in the modulations of nociceptive processing
4. Disturbances in the autonomic innervations and oral blood flow
5. Chronic anxiety or stress results in the alterations of adrenal and neuroactive steroids in the skin and oral mucosa. <sup>(8)</sup> BMS is a complex disorder that is usually strenuous to diagnose and treat. In general to provide the best possible treatment- 3 approaches can be followed- 1. Behavioural, 2. Topical medication, 3. Systemic medication

A thorough history, a proper grasp of the etiology, clinical features of the syndrome with the advancement of pharmacological interventions are necessary to provide better treatment. This study enlightens on determining oral diseases associated with burning mouth syndrome and their management. <sup>(9,10)</sup>

## MATERIALS AND METHODS

This study was performed in a private institutional setting. The study included all patients reporting to the Department of Oral Medicine in an independent dental college in Chennai from June 2019-May to 2022. Ethical committee approval was granted by the Institutional Review Board of the University to access the Datas of the patients Retrospectively. A total number of 60 cases were obtained from electronic health records which had the complete case sheet and clinically diagnosed as Burning Mouth Syndrome were included in the study. The study included patients with oral discomfort/ burning sensation in the oral cavity and also patients with a history of fiery red tongue were included. The exclusion criteria were patients with systemic disorders such as diabetes, hypertension, allergic reactions, autoimmune and central nervous disorders.

## RESULTS AND DISCUSSION

From June 2019-May to 2022, 60 patients were reported to have Burning Mouth Syndrome with a female predilection of 66.7% and a male percentage of 33.3%, The total prevalence rate was obtained as 0.06%. shown in graph 1. In males, the more prevalent age groups affected were 41-50 years, whereas in females the common age prevalent were between 51-60 years.

The most common oral lesions associated with burning mouth syndrome were anemia, lichen planus, and oral ulcers, followed by xerostomia shown in graph 2. There was one case reported with geographic tongue. The medication prescribed was Vitamin supplements (Cap. Diavit plus) 48%, followed by antioxidants 30%, and alpha-lipoic acid 19% shown in graph 3.

Burning mouth syndrome is a complex disorder that has a persistent burning sensation of the oral cavity . It has been prone to restrict daily activities and induce anxiety, depression in affected individuals which in turn creates a negative impact on the quality of life. Thus in a study by Brailo et al it was observed that the prevalence of burning mouth syndrome was about 1.73% among general population (Brailo et al., 2006).<sup>(11)</sup> Bergdahl et al, reported the prevalence of burning mouth syndrome in the general population was about 0.5%.

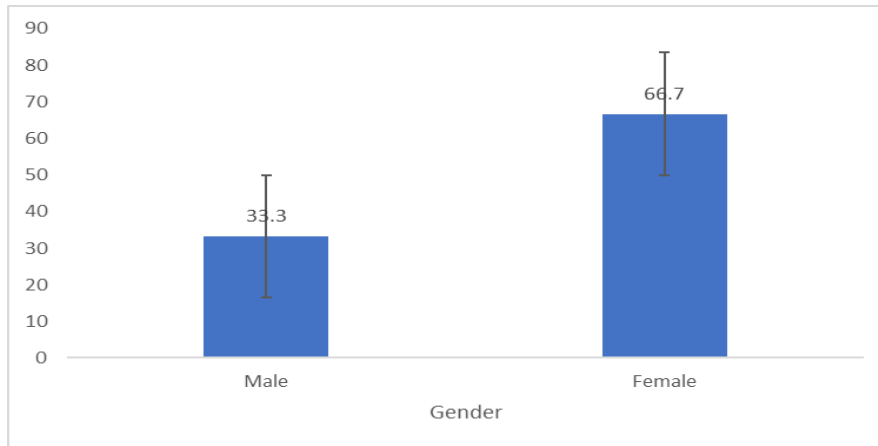
Due to the lack of definitive diagnostic criteria available, the overall population varied from one geographic data to another.<sup>(13)</sup> Kohorst et al, reported that females over 50 years of age are more commonly affected when compared to males.<sup>(1)</sup> Volpe et al, in their study, reported that there was a significant improvement in post-menopausal women's oral symptoms after the administration of estradiol-based treatment.<sup>(18)</sup>

Grushka et al suggested a combination of drugs like gabapentin and baclofen for the management of BMS.<sup>(12)</sup> Study by Bergdahl et al suggested the use of cognitive behavior therapy for the management of BMS.<sup>(6)</sup> and Moraes et al, have suggested the use of drugs with a combination of alpha lipoic acid and clonazepam, and Cognitive behavior therapy as the most promising.<sup>(14,15)</sup> Femiano et al. have found notable improvement in symptoms in BMS patients with the use of alpha lipoic acid.<sup>(19)</sup> Cavalcanti et al in their study didn't find any improvement in patients with BMS when alpha lipoic acid were compared with that of the control group (placebo).<sup>(20)</sup>

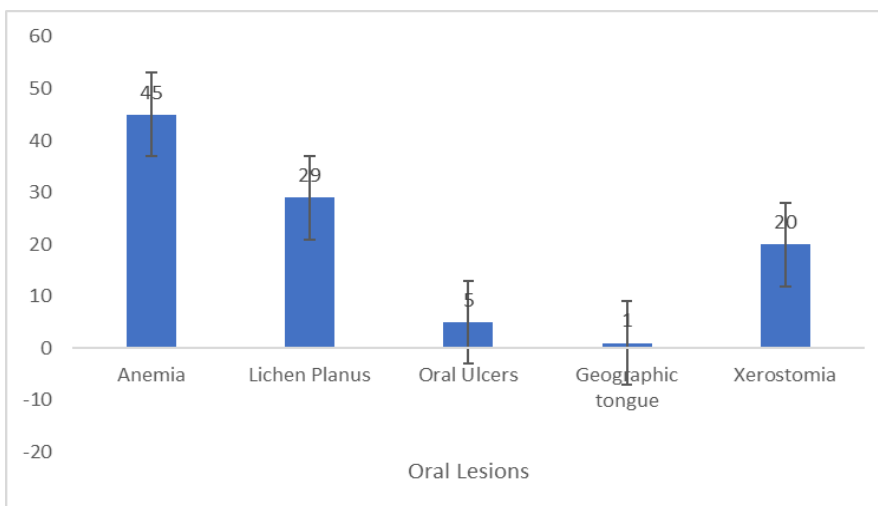
Epstein et al have found that the use of capsaicin act by depleting the substance p which in turn reduces the peripheral burning.<sup>(16)</sup> In a study by Gremeau-Richard et al there was significant reduction in pain with the application of topical clonazepam.<sup>(17)</sup>

The study had its limitations, we could not precisely locate the demographic data. The inclusion and exclusion criteria were formed with no standardized criteria being followed. The results obtained were also subjective.

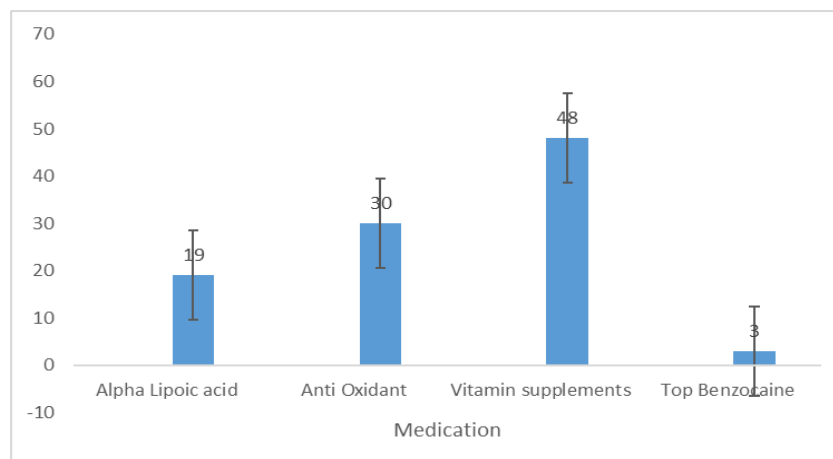
**Graph 1: Shows that females are more affected when compared to males**



**Graph 2: most common oral lesions associated with BMS**



**Graph 3: Shows the most commonly prescribed medication for the treatment of BMS**



## CONCLUSION

This study is a step toward creating awareness among patients and healthcare professionals. The results indicate that burning mouth syndrome affects women more commonly than males, with a prevalence of 45% associated with oral diseases seen among burning mouth patients. Further studies are required on a large sample size in different demographic locations on the prevalence of this challenging disease.

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