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The association of burning mouth syndrome with depression



KEYWORDS

Burning mouth syndrome;
Incidence rate;
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Psychoneurological depression;
Retrospective cohort study

Burning mouth syndrome (BMS) is a type of chronic pain condition that predominantly affects female. BMS is characterized by a generalized or localized pain sensation in the oral cavity, under the absence of specific exterior oral mucosa lesions.¹ The etiologic factors of BMS can be multiple and may come from peripheral and central neuropathological factors and local, systemic or psychological factors.¹ At times, clinicians may miss the diagnosis of BMS and diagnose the patients with other pathologies such as dental caries, pulpitis or periodontitis. When BMS in patients are not resolved despite surgical, endodontic, or periodontal therapy, examining the patient's psychoneurological problems may be indicated.

Psychoneurological factors, involving central sensitization, appear to be the most important component related to pain symptoms. BMS has been shown to be more prevalent in menopausal women particularly in those who have psychiatric symptoms and/or psychoneurological conditions.² Besides that, advancing age is also one of the factors that can cause BMS. A clinical study has demonstrated that women of older age is of higher risk in suffering from BMS. In an investigation which studied the link between certain psychological problems and the pathogenesis of BMS, it was revealed that anxiety may lead to a secondary demoralization in BMS patients and depressive symptoms could contribute to pain.³

In Taiwan, a nationwide register-based study of the prevalence of BMS that published in Journal of Dental Science showed that BMS is highly associated with female sex and advancing age.⁴ The prevalence of BMS increased from 2.24 (per 104) to 3.11 (per 104) from 2004 to 2013 in this study.⁴ BMS patient samples from Chung Shan Medical University Hospital were enrolled between 2010 and 2021. The preliminary results of our research on this association was tabulated in Table 1. According to the findings, the prevalence rate of new-onset BMS in patients with depression and those without depression were 0.21 and 0.06, respectively. Patients with depression were 3.08 times (adjusted HR; 95% CI, 1.31–7.22) more likely to develop BMS than patients without depression. In addition, female patients with depression were shown to be more prone to new-onset BMS. The prevalence of BMS was 3.87 times (adjusted HR; 95% CI, 1.48–11.72) higher in females with depression compared to those without depression. Regardless of whether the sample was normal or depressed, the BMS were found higher in female group.

Although anxiety and depression may play a role in the pathophysiology of BMS, some debated that BMS itself may cause subsequent psychiatric symptoms.³ According to one study, BMS is linked to an increased risk of depression and anxiety.² Another study also discovered that BMS is linked

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Table 1 The baseline characteristics of enrolled participants and the Cox proportional hazards regression for risk of BMS in patients with depression.

Covariates	Patients with depression		Non-depression controls		p-value
	(n = 10,651)		(n = 196,223)		
	n	%	n	%	
Age (Mean ± SD)	48 ± 19	–	42 ± 21	–	<0.001
Male	3830	35.96	79,433	40.48	<0.001
Female	6821	64.04	116,790	59.52	<0.001
Sicca symptom	161	1.51	1149	0.59	<0.001
Dental caries	56	0.53	1229	0.63	0.2
Pulpitis	37	0.35	847	0.43	0.19
Glossitis	16	0.15	106	0.05	<0.001
Prevalence rate		0.21		0.06	
	Patients with depression		Non-depression controls		p-value
Crude HR ¹ (95%CI) Total	3.57 (1.53–8.30)		Reference		
aHR (95%CI) Total	3.08 (1.31–7.22)		Reference		<0.01
Crude HR (95%CI) Female	4.61 (1.79–11.90)		Reference		<0.01
aHR (95%CI) Female	3.87 (1.48–10.14)		Reference		<0.01
Crude HR (95%CI) Male	1.47 (0.18–11.72)		Reference		>0.05
aHR (95%CI) Male	1.40 (0.18–11.14)		Reference		>0.05

HR, hazard ratio; aHR, adjusted hazard ratio.

to poor quality of sleep, anxiety and depression.⁵ Hence, psychoneurological conditions in BMS patients should not be overlooked as it can cause detrimental effects.

Taken together, our preliminary results revealed that individuals with psychoneurological condition is strongly associated to developing BMS. Thus, it is imperative to take psychoneurological aspect into consideration when it comes to diagnosing BMS.

Declaration of competing interest

The authors have no conflicts of interest relevant to this article.

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