Burning mouth syndrome at menopause: Elusive etiology

Burning mouth syndrome (BMS), as a clinical condition though described for a long time, remains poorly understood.[1] BMS is a diagnosis of exclusion. Establishing the diagnosis of BMS in a given patient requires exclusion of oral pathological lesions, certain systemic diseases, vitamin deficiencies, and intake of drugs known to cause dryness and burning of mouth.[2] In the current issue, the authors provide a list of drugs that cause BMS in the article "Prevalence of Burning Mouth Syndrome in middle aged and elderly postmenopausal women: A clinical Research."[3] Some of these medications will be a part of the multipill treatment for management of cardiovascular problem in menopausal women. Hence a careful enquiry should be done as to the onset of BMS vis-à-vis initiation of the medications.

BMS is also known as stomatodynia and the International Association for the Study of Pain has defined it as "all forms of burning sensation in the mouth, including complaints described as stinging sensation or pain, in association with an oral mucosa that appears clinically normal in the absence of local or systemic diseases or alterations."[4]

BMS largely occurs as a chronic burning painful condition of the tongue (glossodynia) in peri-/post-menopausal women with or without dryness of mouth (xerostomia). Its prevalence is estimated as 18-33% in postmenopausal women.[2] Misra *et al.* also report nearly 21% of 105 postmenopausal women having BMS; a fairly high prevalence.[3]

There may be other associated "dynia" or painful conditions like vulvostomatodynia.[5] Since both BMS and vulvodynia occur more frequently in menopausal women, estrogen deficiency could be considered as a common pathological mechanism of these clinical conditions. Estrogen receptors are also identified in both the tongue and the vaginal mucosa besides having microscopic similarity.[6,7] However, hormone replacement therapy (HRT) has not been majorly found to be useful and thus estrogen deficiency is generally not accepted as causal.[8] There are conflicting reports about the use of HRT in menopausal women with BMS.[8] However, there are strong views expressed against the psychogenic nature of BMS at menopause in view of the dramatic drop in sex steroid levels at the menopausal transition.[9]

Currently neuropathic etiology is being evolved as possibly causal for BMS.[10,11] Reductions in the number of unmyelinated fibers associated with taste papilla and a reduction in number of intraepithelial fibers have been shown in studies of tongue biopsy from patients of BMS.[10,12] Functional MRI (fMRI) studies in limited patients have revealed that patients of BMS may have neurodysregulation of afferent pain stimuli.[13] Some studies have hinted at genetic component based on a higher prevalence of BMS in high tasters.[14]

Studies have also been conducted on saliva as hyposalivosis or dry mouth (xerostomia) may be a part of BMS. Salivary glands also have estrogen receptors.[8] Salivary secretion flow rate and its biochemical composition in postmenopausal women before and during HRT have been detailed.[8] However; even here there is a lack of convincing evidence for the therapeutic role of HRT in xerostomia.

In view of uncertain etiology and a lack of definite criteria of diagnosis of BMS, treatment remains empirical. Misra *et al.* quotes a study of Geri Forte in 75 postmenopausal women with symptoms of burning mouth; 47 of these were symptom free at the end of 6-week treatment. One would like to also know about the safety of the formulation in view of its herbo-mineral composition. In a recent double blind placebo-controlled study of Catuama (a formulation of multiple plants from Brazil), a significant reduction was observed in the symptoms of BMS.[15]

In an extensive systematic review of drugs used for treatment of BMS, the authors detail effectiveness and safety of several interventions that include local anesthetics, antidepressants, benzodiazepines, topical clonazepam, benzydamine hydrochloride, dietary supplements, and hormone replacement therapy (HRT) in postmenopausal women.[2] Outcome of cognitive behavioral therapy (CBT) is also reviewed. However, the authors mention that no good-quality studies for CBT were found. A randomized placebo-controlled study of topical clonazepam showed significant benefit with treatment compared to placebo in patients having BMS.[16]

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In conclusion, though BMS is prevalent in menopausal women, approaches for evaluation and management are still not standardized as etiology remains enigmatic. There is also a great scope for well-designed clinical studies using reverse pharmacological approach[17] for evaluating alternative therapeutic modalities from AYUSH and traditional systems of medicine in treatment of the syndrome.

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REFERENCES

1. Fox H. Burning tongue glossodynia. N Y State J Med 1935;35:881-4.
2. Buchanan J, Zakrzewsk J. Burning mouth syndrome. Clin Evid (Online). 2008. pii: 1301.
3. Malik R, Goel S, Misra D, Panjwani S, Misra A. Assessment of anxiety and depression in patients with burning mouth syndrome: A clinical trial. J Midlife Health 2012;3:36-9.
4. Merksey H, Bogduk N. International Association for the Study of Pain. Descriptions of chronic pain syndromes and definitions of pain terms. In: Merskey H, Bugduk N, editors. Report by the IASP Task Force on Taxonomy. Seattle: IASP Press; 1994. p. 74.
5. Gaitonde P, Rostron J, Longman L, Field EA. Burning mouth syndrome and vulvodynia coexisting in the same patient: A case report. Dent Update 2002;29:75-6.
6. Leimola-Virtanen R, Salo T, Toikkanen S, Pulkkinen J, Syrjänen S. Expression of estrogen receptor (ER) in oral mucosa and salivary glands. Maturitas 2000;36:131-7.
7. Thompson IO, van der Bijl P, van Wyk CW, van Eyk AD. Comparative lightmicroscopic, electron-microscopic and chemical study of human vaginal and buccal epithelium. Arch Oral Biol 2001;46:1091-8.
8. Meurman JH, Tarkkila L, Tiitinen A. The menopause and oral health. Maturitas 2009;63:56-62.
9. Myers A, Naylor GD. Glossodynia as an oral manifestation of sex hormone alterations. Ear Nose Throat J 1989;68:789-90.
10. Lauria G, Majorana A, Borgna M, Lombardi R, Penza P, Padovani A, *et al.* Trigeminal small-fiber sensory neuropathy causes burning mouth syndrome. Pain 2005;115:332-3.
11. Fedele S. Fricchione G, Porter SR, Minong MD. Burning mouth syndrome (stomatodynia). Q J Med 2007;100:527-30.
12. Yilmaz Z, Renton T, Yiangou Y, Zakrzewska J, Chessell IP, Bountra C, *et al.* Burning mouth syndrome as a trigeminal small fibre neuropathy: Increased heat and capsaicin receptor TRPV1 in nerve fibres correlates with pain score. J Clin Neurosci 2007;14:864-71.
13. Albuquerque RJ, de Leeuw R, Carlson CR, Okeson JP, Miller CS, Andersen AH. Cerebral activation during thermal stimulation of patients who have burning mouth disorder: An fMRI study. Pain 2006;122:223-34.
14. Groushka M, Bartoshuk LM. Burning mouth syndrome and oral dysaesthesia: Taste injury is a piece of puzzle. Can J Diagnosis 2000;17:99-109.
15. Spanemberg JC, Cherubini K, Zancanaro de Figueiredo MA, Neutzling Gomes AP, Campos MM, Salum FG. Effect of an herbal compound for treatment of burning mouth syndrome: randomized, controlled, double-blind clinical trial .Oral Surg Oral Med Oral Pathol Oral Radiol 2012:113:373-7.
16. Gremeau-Richard C, Woda A, Navez ML, Attal N, Bouhassira D, Gagnieu MC, *et al.* Topical clonazepam in stomatodynia: A randomised placebo-controlled study. Pain 2004;108:51-7.
17. Vaidya AB. Reverse Pharmacology-a paradigm shift for new drug discovery based on Ayurvedic epistemology. In: Ayurveda in Transition. Editors. Muraleedharan TS and Raghava Varier MR Publ. Kotatakal Aurveda Series100, 27-38, 2010.

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