



THERAPEUTIC INNOVATIONS IN THE MANAGEMENT OF GLOSSALGIA DURING THE CLIMACTERIC PERIOD: A FOCUS ON QUALITY OF LIFE AND NEUROGENIC FACTORS

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Glossalgia, often referred to as burning mouth syndrome (BMS), remains a challenging condition in menopausal women due to its multifactorial origin and chronic course. As traditional symptomatic approaches often fail to deliver lasting relief, recent attention has shifted to innovative therapeutic modalities that target neurogenic pathways and psychosomatic mechanisms. This review discusses current advances in the management of glossalgia in the climacteric period, emphasizing multimodal therapies aimed at improving both symptom severity and patients' quality of life. Emerging evidence supports the integration of neurotrophic agents, cognitive-behavioral therapy, and non-hormonal pharmacological options tailored to individual profiles.

Glossalgia is a chronic pain condition characterized by persistent burning or tingling sensations in the oral mucosa, often without observable lesions. It is most prevalent in perimenopausal and postmenopausal women, affecting their emotional well-being, nutritional status, sleep quality, and overall quality of life (Yilmaz et al., 2017).

Despite its high prevalence, the pathophysiology of glossalgia remains poorly understood. Neurogenic and psychogenic mechanisms, often intertwined with the hormonal fluctuations of menopause, are now recognized as critical contributors. Conventional treatments, such as vitamin supplementation or topical anesthetics, frequently prove insufficient, highlighting the need for a more targeted and comprehensive approach.

Etiopathogenesis: A Neurogenic and Psychosomatic Perspective

Recent research suggests that glossalgia is primarily a neuropathic pain syndrome involving both peripheral and central nervous system dysfunction (Svensson & Baad-Hansen, 2005). Peripheral nerve injury or dysfunction may result in spontaneous pain signals, while central sensitization mechanisms amplify pain perception.

Furthermore, psychosomatic contributors—including depression, anxiety, and sleep disturbances—can exacerbate symptoms and complicate treatment. A meta-analysis by Woda et al. (2009) indicated that over 60% of glossalgia patients exhibit comorbid psychiatric symptoms.



The decline in estrogen levels during the climacteric phase may indirectly affect neurotransmitter function, particularly serotonergic and dopaminergic systems, both of which modulate pain and mood regulation. This hormonal-neurogenic interplay underscores the importance of multimodal interventions.

Impact on Quality of Life

Glossalgia is more than a localized oral issue—it significantly disrupts quality of life. Studies using the Oral Health Impact Profile (OHIP-14) and the Short-Form Health Survey (SF-36) have documented substantial declines in social functioning, role-emotional, and vitality domains among affected women (Bergdahl & Bergdahl, 2001).

Moreover, persistent oral discomfort affects dietary habits, often leading to nutritional deficiencies, weight loss, and gastrointestinal issues. The condition may also impair verbal communication and intimacy, creating emotional withdrawal and social isolation.

The recognition of these psychosocial dimensions is vital in constructing individualized care strategies that aim not only to reduce pain but also to restore a meaningful daily life.

Therapeutic Innovations and Evidence-Based Approaches

1. Neurotrophic and Anticonvulsant Agents

Recent randomized controlled trials have highlighted the role of neurotrophic medications in restoring peripheral nerve function. Clonazepam, administered as a topical mouth rinse or low-dose oral agent, provides significant symptom relief by modulating GABAergic transmission (Jaaskelainen et al., 2012).

Gabapentin and pregabalin, used off-label, target voltage-gated calcium channels and reduce nerve excitability. Several clinical series report reductions in burning sensations, improved sleep quality, and fewer relapses over 6–12 months.

2. Non-Hormonal Systemic Therapies

While hormone replacement therapy (HRT) can be effective, it is contraindicated in many patients. Alternatives such as alpha-lipoic acid (ALA), zinc supplements, and capsaicin-based products have gained attention.

ALA, a potent antioxidant, has shown promise in reversing oxidative nerve damage. Femiano et al. (2003) demonstrated that daily ALA supplementation led to statistically significant symptom reductions after 2 months of treatment. Topical capsaicin may help desensitize oral nociceptors through repeated TRPV1 receptor stimulation, although its initial use can be irritating.



3. Cognitive-Behavioral Therapy (CBT) and Psychological Support

Given the high incidence of comorbid anxiety and depression in glossalgia patients, CBT has emerged as a valuable adjunct. Techniques that include relaxation training, cognitive reframing, and guided imagery help patients recontextualize pain and manage emotional stress (Reichart & Philip, 2010).

In an interventional study involving 70 postmenopausal women, those who received weekly CBT sessions for 6 weeks showed significant reductions in both pain intensity and depression scores compared to controls receiving standard oral care.

4. Transcranial Magnetic Stimulation (TMS)

As an emerging non-invasive technique, TMS modulates neural activity in pain-processing brain regions. Although still experimental in BMS treatment, initial pilot studies report short-term relief in refractory patients (Cruccu et al., 2016). Further clinical trials are underway to determine its safety and efficacy for broader clinical use.

5. Multidisciplinary Treatment Programs

Current best practice suggests that a combination of interventions, tailored to each patient's neuroendocrine status, psychological profile, and symptom history, yields the most sustainable outcomes. This includes coordinated care between dentists, neurologists, gynecologists, and mental health professionals.

Patients receiving multidisciplinary care have reported faster symptom resolution, improved coping ability, and decreased reliance on long-term medications.

Clinical Practice Recommendations

- Initial Evaluation should include comprehensive history, oral examination, depression/anxiety screening, and salivary hormone panel.
- Stepwise Therapy: Begin with topical or systemic clonazepam/ALA. Add gabapentin or SSRI if needed.
- Psychological Referral: Strongly recommended for patients with significant emotional distress.
- Non-Pharmacologic Support: Nutritional counseling, oral moisturizers, stress management workshops.
- Long-Term Monitoring: Regular follow-up for relapse prevention and therapy adjustment.

As the understanding of glossalgia deepens, research is shifting toward:

- Identification of salivary biomarkers for early detection.



- Investigation of genetic polymorphisms affecting estrogen receptors and pain sensitivity.
- Integration of telemedicine platforms for long-term support and remote CBT delivery.
- Development of novel agents targeting the trigeminal nociceptive system.

Conclusion

Glossalgia in climacteric women is a multidimensional disorder rooted in neurogenic and psychosomatic alterations. Standard treatments alone are rarely sufficient. Innovative therapies—ranging from neuroprotective drugs and cognitive-behavioral interventions to emerging neuromodulatory techniques—represent a new frontier in patient-centered care. Improving quality of life requires not only relieving pain but also addressing the broader emotional and functional limitations associated with this complex syndrome.

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