Burning mouth syndrome: the efficacy of lipoic acid on subgroups

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ABSTRACT
Objective We have examined the effect of alpha-lipoic acid (ALA, tioctic acid; Tiobec), a free radical scavenger, on the discomfort of burning mouth syndrome (BMS) in patients who had used tranquillizers previously, compared with those who had not.

Methods In this study we gave lipoic acid for 2 months to two groups of 20 BMS patients, one of which had previously been treated with tranquillizers.

Results The results showed greater effectiveness of lipoic acid in BMS patients who had not previously used tranquillizers.

Conclusions The patients with BMS who had previously been treated with tranquillizers responded poorly to therapy with lipoic acid compared with those who had not received previous psychotropic therapy.

Key words: BMS, lipoic acid, neuropathy, oral dysaesthesia

Received 15 January 2004; accepted 26 January 2004

Introduction
Burning mouth syndrome (BMS; oral dysaesthesia; glossopyrosis; glossodynia) is characterized by a burning sensation in the tongue or other oral sites, usually in the absence of clinical and laboratory findings. BMS is a common cause of oral discomfort that most frequently affects the tongue, although patients also occasionally complain of burning lips, gingivae or palate.1–2 Organic causes of soreness such as lichen planus, candidiasis, diabetes or deficiency states may give rise to similar symptomatology.3–7

In a substantial number of cases of BMS, the cause is unclear or an underlying psychogenic basis such as anxiety about cancer underlies the symptoms.8–15

Antidepressants or anxiolytics can help8,16 but they are not always reliably effective.17 Recently, however, it has been recognized that in patients with BMS the symptoms can be altered by local analgesic agents, and that there are abnormal blink reflexes – lending support to the hypothesis that BMS is a type of peripheral neuropathy.18,19

We have shown in previous studies that the free-radical scavenger alpha-lipoic acid (Tiobec) may be effective in the therapy of BMS.20,21 In this study we have examined the effects of lipoic acid in patients with BMS, comparing patients who had been treated with tranquillizers with those who had not.

Patients and methods
Local ethical committee approval was given. The study consisted of two groups of patients with normal laboratory results [full blood count, serum ferritin, serum vitamin B12, Serum Glutamic Oxaloacetic Transaminase (SGOT), Serum Glutamate Pyruvate Transaminase (SGPT), total immunoglobulin E (IgE) Paper Radio Immune Sorbent Test (PRIST) and IgE specific for methacrylate, random blood sugars], scintigraphy of major salivary glands, and sialometry using the Saxon test.

Group A consisted of 20 patients (14 females, six males; age 43–70 years, median 62 years) who had suffered from BMS for between 2 and 12 months, were hypochondriacal with a clear cancerophobia and were taking and had been treated with tranquillizers (Table 1) for at least 6 and often 12 months before the

This work was performed in the Stomatology Clinic of II University of Medicine and Surgery in Naples, Italy.
appearance of BMS and who had no detectable hyposalivation. The patients in group A were sent for psychiatric consultation: all patients had low self-esteem, some indicated that they were dissatisfied with life achievements and in all there was an increase in BMS pain associated with interpersonal conflicts.

Group B consisted of 20 patients (14 females, six males; age 35–68 years, median 61 years) who had suffered from BMS for between 2 and 12 months. The patients in group B were sent for psychiatric consultation: all patients had chronic anxiety, but had never used tranquilizers.

Patients in both groups were given alpha-lipoic acid orally 200 mg three times a day in association with a gastroprotector (ranitidine 150 mg/day) for 2 months, and the subjective symptomatology, based on a visual analogue scale, was recorded as in Table 2. The results were analysed by \( \chi^2 \) analysis.

**Results**

In group A (tranquillizer use), four patients reported a decided improvement in symptomatology with lipoic acid, seven patients reported a slight reduction in burning, two reported a worsening and seven had no change in symptoms.

In group B (no tranquillizer use), 11 patients reported a complete resolution of oral burning with lipoic acid, four reported decided improvement in symptomatology, three felt a slight reduction in symptomatology and two experienced no change (Table 3).

The results were analysed by the \( \chi^2 \)-test for trend.

**Discussion**

BMS is considered to be a psychosomatic condition\(^{20}\) in which in some cases psychological factors predispose BMS, while in others the BMS predisposes to a psychological disorder.\(^{22}\) BMS is not a specific disease entity but rather it is the manifestation of a range of aetologies\(^{23,24}\) and, for the treating clinician, it has remained an enigma because defined pathological lesions or processes are usually not evident.\(^{25}\) Thus, unsurprisingly, current treatments are not reliably effective.\(^{26}\) We have previously shown that alpha-lipoic acid (ALA; Tiobec), a potent antioxidant mitochondrial coenzyme, the trometamol salt of thiocic acid, essential for various reactions of the Krebs cycle and glycolysis, regenerating, through the oxidation–reduction cycle, other antioxidants such as vitamin C and E, increasing the level of intracellular glutathione, and stimulating the production of ‘nerve-growth factors’,\(^{27}\) can be effective in some patients with BMS.\(^{20,21}\)

In the present study, patients with BMS who were treated with tranquillizers (group A), though somewhat older, responded poorly to therapy with lipoic acid compared with those who had not received previous psychotropic therapy (group B). This study, therefore, not only confirms the efficacy of lipoic acid in BMS but also suggests that the oral burning reported by the patients with BMS had a different origin for the two groups of examined patients, perhaps associated with depression or drug-induced hyposalivation\(^{28}\) in group A, though hyposalivation was clinically undetectable, and stress in group B.

The conclusion is that the BMS patients such as in group A require psychological or psychiatric therapies, while the patients of group B can possibly be managed without (Table 4).
However, this remains to be confirmed in larger double-blind randomized controlled studies.

References

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