Laser acupuncture in the treatment of burning mouth syndrome: a pilot study

According to the definition of the International Headache Society, burning mouth syndrome (BMS) is an intraoral burning sensation for which no dental or medical cause could be identified.1 Recently, various authors suggested that acupuncture might be effective in patients with BMS.2-4 In ancient acupuncture texts, it was stated that ‘the Spleen opens in the mouth and the Heart in the tongue’, so the organs Spleen and Heart are traditionally involved in BMS. Spleen and Heart are also the organs that are most involved in depression, hence the traditional connection between BMS and depression, stress and anxiety.5

The aim of this study was to evaluate whether laser acupuncture was effective in patients with burning mouth syndrome, as no satisfactory treatments for this condition are available and patients with the condition may experience substantial disturbance to everyday life.

The Ethical Committee of the Zagreb School of Dentistry approved this study and participants signed informed consent. There were 16 participants (2 men and 14 women); ages ranged from 36 to 87 years (mean age 70.9 years). Symptom duration was from 3 to 180 months (average 41.3 ± 63.7 months). BMS diagnostic criteria were according to Scalla et al.6 None of the patients had any identified habit that might lead to burning symptoms, or candidal infection. All patients had results of routine blood tests (including iron and ferritin levels) within normal ranges. None used medication that might lead to burning mouth symptoms. Previously, all patients had been treated unsuccessfully with clonazepam.

Treatments consisted of eight sessions of laser acupuncture, each lasting 15 min, on alternate days. The following points were treated: from ST1 to ST3, ST4, ST5, LI4, LU7, GV14, CV17, SP10, SP9 and SP6. The laser wavelength was 660 nm, output power 50, dose 1.5–2.0 J/cm² (Medio Laser Kombi, Iskra Medical, Slovenia; http://www.iskramedical.si). Burning intensity was recorded by use of a visual analogue scale (VAS) from 0–10 before and after the course of treatments.

The difference in burning intensity was tested by use of t test for dependent samples and values <0.05 were considered as significant. Demographic and clinical...
Important to note that our patients average decrease of 55.2%. It is in burning symptoms with an average decrease by 0.99 (maximum 2.1/10 patients with BMS over 8 weeks sessions of acupuncture treatment to cope better with their oral symptoms. These findings2 are in concordance with our results, and all patients experienced a decrease in burning symptoms after the acupuncture treatment was 55.2%. All patients reported successful outcomes when treating patients with BMS by use of acupuncture. We used laser acupuncture as it is less painful than the standard needle acupuncture and the result of this pilot study suggest that laser acupuncture might be useful in patients with BMS, although randomised controlled trials are necessary to validate these findings.

### Table 1 Demographic and clinical characteristics of patients

<table>
<thead>
<tr>
<th>Patient</th>
<th>Sex</th>
<th>Age</th>
<th>VAS before</th>
<th>VAS after</th>
<th>Symptoms decrease (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>F</td>
<td>78</td>
<td>7</td>
<td>2</td>
<td>71.5</td>
</tr>
<tr>
<td>P2</td>
<td>F</td>
<td>67</td>
<td>6</td>
<td>2</td>
<td>66.7</td>
</tr>
<tr>
<td>P3</td>
<td>F</td>
<td>74</td>
<td>4</td>
<td>2</td>
<td>50</td>
</tr>
<tr>
<td>P4</td>
<td>F</td>
<td>75</td>
<td>7</td>
<td>2.5</td>
<td>64.3</td>
</tr>
<tr>
<td>P5</td>
<td>F</td>
<td>76</td>
<td>6.5</td>
<td>1.5</td>
<td>76.9</td>
</tr>
<tr>
<td>P6</td>
<td>F</td>
<td>83</td>
<td>8.5</td>
<td>4</td>
<td>52.9</td>
</tr>
<tr>
<td>P7</td>
<td>F</td>
<td>87</td>
<td>5</td>
<td>2</td>
<td>60</td>
</tr>
<tr>
<td>P8</td>
<td>F</td>
<td>60</td>
<td>6</td>
<td>4</td>
<td>33.3</td>
</tr>
<tr>
<td>P9</td>
<td>F</td>
<td>73</td>
<td>5.5</td>
<td>2</td>
<td>63.6</td>
</tr>
<tr>
<td>P10</td>
<td>F</td>
<td>56</td>
<td>5</td>
<td>1</td>
<td>80</td>
</tr>
<tr>
<td>P11</td>
<td>M</td>
<td>79</td>
<td>6.5</td>
<td>3</td>
<td>53.8</td>
</tr>
<tr>
<td>P12</td>
<td>F</td>
<td>55</td>
<td>5.5</td>
<td>4</td>
<td>27.3</td>
</tr>
<tr>
<td>P13</td>
<td>M</td>
<td>83</td>
<td>4</td>
<td>2</td>
<td>50</td>
</tr>
<tr>
<td>P14</td>
<td>F</td>
<td>36</td>
<td>6</td>
<td>2</td>
<td>66.7</td>
</tr>
<tr>
<td>P15</td>
<td>F</td>
<td>74</td>
<td>5.5</td>
<td>3</td>
<td>45.5</td>
</tr>
<tr>
<td>P16</td>
<td>F</td>
<td>79</td>
<td>5</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>Mean value±SD</td>
<td>70.9±13.2</td>
<td>5.8±1.2</td>
<td>2.5±1</td>
<td>55.2±17.2</td>
<td></td>
</tr>
</tbody>
</table>

VAS, visual analogue scale.

data for the patients are presented in table 1. The average decrease in burning symptoms after the acupuncture treatment was 55.2%. All patients experienced a decrease in burning symptoms that was reflected in the lower VAS scores.

Burning mouth syndrome remains an enigmatic condition, currently considered as a neuropathy affecting the trigeminal nerve. Accordingly, most of the available treatments are unsatisfactory. Sardella et al2 gave 20 laser acupuncture as it is less painful than the standard needle acupuncture and the result of this pilot study suggest that laser acupuncture might be useful in patients with BMS, although randomised controlled trials are necessary to validate these findings.

**REFERENCES**


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