

## Glossodynia

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### **Effects of near-infrared irradiation to stellate ganglion in glossodynia**

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**Objective:** This study was designed to assess the effect of stellate ganglion near-infrared irradiation (SGR) on glossodynia and the mechanism of action.

**Study design:** Thirty-seven patients with glossodynia received SGR once weekly for 4 weeks. The response to treatment was evaluated on the basis of the change in pain intensity, assessed with a visual analogue scale (VAS) before and after 4 weeks of treatment. The temperature and blood flow of the tongue were also measured before and after first SGR. As control, eight healthy subjects were studied.

**Results:** Tongue pain as assessed by the VAS decreased in 28 of the 37 patients (75.7%). Mean pain intensity decreased significantly from  $5.1 \pm 2.2$  to  $1.9 \pm 2.1$  ( $P < 0.05$ ). Tongue blood flow at rest in the patients with glossodynia [ $7.2 \pm 1.6$  ml min<sup>-1</sup> (100 g)<sup>-1</sup>] was significantly lower than that in the healthy subjects [ $7.8 \pm 0.23$  ml min<sup>-1</sup> (100 g)<sup>-1</sup>]. Five minutes after SGR, the temperature of the tongue rose  $1.5 \pm 0.21^\circ\text{C}$ , and blood flow increased to  $8.5 \pm 1.2$  ml min<sup>-1</sup> (100 g)<sup>-1</sup>. Tongue blood flow (at rest) after 4 weeks of SGR had increased to  $7.7 \pm 1.1$  ml min<sup>-1</sup> (100 g)<sup>-1</sup>.

**Conclusion:** SGR is an effective treatment for glossodynia. The mechanism by which SGR improves symptoms associated with glossodynia is thought to be as follows: SGR inhibits abnormally increased sympathetic activity associated with glossodynia. This is followed by normalization of decreased tongue blood flow, thereby alleviating pain