



Low Level Laser Therapy & Stellate Ganglion Irradiation clinical research

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Effects of Stellate Ganglion Irradiation by the Low-level Laser Therapy on Reflex Sympathetic Dystrophy of the Hemiplegic Arm.

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To evaluate the efficacy of low-level laser therapy (LLLT) on reflex sympathetic dystrophy (RSD) of the hemiplegic arm as an addition to a standardized treatment regimen. Twenty patients were assigned equally to a laser treated limb (LL) and a control limb (CL) group. All patients received 20-minutes laser irradiation, 5 times weekly for a period of 6 weeks. Follow-up studies were also performed in all patients from the initial stage to the end stage of LLLT. A significant improvement in the LL compared to the CL group was found on visual analog scale ($p < 0.05$), subjective and objective symptoms ($p < 0.01$), swelling in hands ($p < 0.05$) and elevation of body temperature in digital infrared thermal imaging ($p < 0.01$) after 6 weeks. From these results it is inferred that LLLT is a useful method of treatment which is able to reduce the symptom of RSD.; however, as a sole treatment for syndrome of RSD it is of limited value. Further studies are needed to evaluate the reliability of our findings and to compare LLLT to other established treatment methods.

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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 ± 2.2 to 1.9 ± 2.1 ($P < 0.05$). Tongue blood flow at rest in the patients with glossodynia [7.2 ± 1.6 ml min⁻¹ (100 g)⁻¹] was significantly lower than that in the healthy subjects [7.8 ± 0.23 ml min⁻¹ (100 g)⁻¹]. 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 ± 1.2 ml min⁻¹ (100 g)⁻¹. Tongue blood flow (at rest) after 4 weeks of SGR had increased to 7.7 ± 1.1 ml min⁻¹ (100 g)⁻¹.

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 Masui. 1992 Nov;41(11):1809-13.

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