

## Post-Herpetic Neuralgia - Shingles

[Masui](#). 2006 Sep;55(9):1104-11.

### **[Equipment for low reactive level laser therapy including that for light therapy]**

[Article in Japanese]

[Saeki S.](#)

Department of Anesthesiology, Nihon University School of Medicine (Surugadai Nihon University Hospital), Tokyo.

Equipments used for light therapy include machinery used for irradiation by low reactive level laser, xenon light and linear polarized infra-red ray. Low reactive level laser is divided into two types of laser according to the medium by which laser is obtained ; semiconductor laser and helium-neon laser. Low reactive level laser has only one wave length and produces analgesia by action of light itself. On the other hands, Xenon light and linear polarized infra-red ray produce analgesia by warming effect induced by light in addition to the action of light itself. There are four methods of irradiation by these light sources; irradiation of acupuncture points, of trigger points, along nerves causing pain and of stellate ganglion area. Indication for light therapy includes various kinds of diseases such as herpes zoster, post herpetic neuralgia, cervical pain, lumbago due to muscle contracture, complex regional pain syndrome, arthralgia etc. However, we have to know that light therapy does not exert analgesic effects equally to all patients. But light therapy does not accompany pain and rarely shows any side effects. Therefore it is thought to be an alternative for patients who reject injection or patients who are not indicated for nerve block because of patients' conditions such as bleeding tendency.

### **DOUBLE BLIND CROSSOVER TRIAL OF LOW LEVEL LASER THERAPY IN THE TREATMENT OF POST HERPETIC NEURALGIA**

Kevin C Moore Naru Hira. Parswanath S. Kramer, Copparam S. Jayakumar and Toshio Oshiro

Post herpetic neuralgia can be an extremely painful condition in which many case prove resistant to all the accept forms of treatment. It is frequently most severe in the elderly and may persist for years with no predictable course.

This trial was designed as a double blind assessment of the efficacy of low level laser therapy in the relief of the pain of post herpetic neuralgia with patients acting as their

own controls. Admission to the trial was limited to patients with established post herpetic neuralgia of at least six months duration and who had shown little or no response to conventional methods of treatment. Measurements of pain intensity and distribution were noted over a period of eight treatments in two groups of patients each of which received four consecutive laser treatments. The results demonstrate a significant reduction in both pain intensity and distribution following a course of low level laser therapy.

## **EFFICACY OF LASER IRRADIATION ON THE AREA NEAR THE STELLATE GANGLION IS DOSE-DEPENDENT: DOUBLE-BLIND CROSSOVER PLACEBO-CONTROLLED STUDY**

**Toshikazu Hashimoto, Osamu Kemmotsu, Hiroshi Otsuka, Rie Numazawa, and Yoshihiro Ohta, Department of Anaesthesia, Hokkaido University Hospital, Sapporo, Japan**

In the present study we evaluate the effects of laser irradiation on the area near the stellate ganglion on regional skin temperature and pain intensity in patients with postherpetic neuralgia. A double blind, crossover and placebo-controlled study was designed to deny the placebo effect of laser irradiation. Eight inpatients (male 6, female 2) receiving laser therapy for pain attenuation were enrolled in the study after institutional approval and informed consent. Each patient received three sessions of treatment on a separate day in a randomised fashion. Three minutes irradiation with a 150 mW laser (session 1), 3 minutes irradiation with a 60 mW laser (session 2), and 3 minutes placebo treatment without laser irradiation. Neither the patient nor the therapist was aware which session type was being applied until the end of the study. Regional skin temperature was evaluated by thermography of the forehead, and pain intensity was recorded using a visual analogue scale(VAS). Measurements were performed before treatment, immediately after (0 minutes) then 5, 10, 15, and 30 min after treatment. Regional skin temperature increased following both 150 mW and 60mW laser irradiation, whereas no changes were obtained by placebo treatment. VAS decreased following both 150 mW and 60 mW laser treatments, but no changes in VAS were obtained by placebo treatment. These changes in the temperature and VAS were further dependent on the energy density, i.e. the dose. Results demonstrate that laser irradiation near the stellate ganglion produces effects similar to stellate ganglion block. Our results clearly indicate that they are not placebo effects but true effects of laser irradiation.

Addressee for Correspondance: Toshikazu Hashimoto MD, Department of Anesthesia, I Hokkaido University I Hospital N15, W7, Kita-ku Sapporo, Japan 060. 3/97 Rep US \$ 8-10 12 ©1997 by LT Publishers I. .K., Ltd. LASER THERAPY 1997:9:7-- 12

## **EFFICACY OF LOW REACTIVE-LEVEL LASER THERAPY FOR PAIN ATTENUATION OF POSTHERPETIC NEURALGIA**

**Osamu Kemmotsu, Kenichi Sato, Hitoshi Furumido, Koji Harada, Chizuko Takigawa, Shigeo Kaseno, Sho Yokota, Yukari Hanaoka and Takeyasu Yamamura** Department of Anaesthesiology, Hokkaido University School of Medicine, N-15, W-7, Kita-ku, Sapporo 060, Japan.

The efficacy of low reactive-level laser therapy (LLLT) for pain attenuation in patients with postherpetic neuralgia (PHN) was evaluated in 63 patients (25 males, 38 females with an average age of 69 years) managed at our pain clinic over the past four years. A double blind assessment of LLLT was also performed in 12 PHN patients. The LLLT system is a gallium aluminum arsenide (GaAlAs) diode laser (830 nm, 60 mW continuous wave). Pain scores (PS) were obtained using a linear analog scale (1 to 10) before and after LLLT. The immediate effect after the initial LLLT was very good (PS: 1-3) in 26, and good (PS: 4-6) in 30 patients. The long-term effect at the end of LLLT (the average number of treatments 36 ± 12) resulted in no pain (PS: 0) in 12 patients and slight pain (PS: 1-4) in 46 patients. No complications attributable to LLLT occurred. Although a placebo effect was observed, decreases in pain scores and increases of the body surface temperature by LLLT were significantly greater than those that occurred with the placebo treatment. Our results indicate that LLLT is a useful modality for pain attenuation in PHN patients and because LLLT is a noninvasive, painless and safe method of therapy, it is well acceptable by patients. Addressee for correspondence:

Osamu Kemmotsu, Department of Anaesthesiology, Hokkaido University School of Medicine, N-15, W-7, Kita-ku, Sapporo 060, Japan. 0898-5901/91/020071-05\$05.00 © 1991 by John Wiley & Sons, Ltd.

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

### **[ Low reactive-level laser therapy near the stellate ganglion for postherpetic facial neuralgia]**

[Article in Japanese]

Ohtsuka H, Kemmotsu O, Dozaki S, Imai M.

Department of Anesthesiology, Hokkaido University School of Medicine, Sapporo.

Low reactive-level laser therapy near the stellate ganglion was given for a 68-year-old female with postherpetic neuralgia, suffering from burning pain in the right forehead for 11 years. Stellate ganglion block and supraorbital nerve block with oral medication were not effective to relieve this pain. The laser irradiation induced warm sensation in her face followed by an excellent pain relief. Thermograms illustrated a remarkable increase from 30.6 degrees C to 31.5 degrees C in temperature of her right face. The irradiation near the right carotid artery also had the similar effect. The results imply that the irradiation with low reactive-level laser of the stellate ganglion and/or the carotid artery increases a facial blood flow and relieves facial neuralgia.

[J Clin Laser Med Surg.](#) 1991 Apr;9(2):121-6.

## **Evaluation of analgesic effect of low-power He:Ne laser on postherpetic neuralgia using VAS and modified McGill pain questionnaire.**

[Iijima K](#), [Shimoyama N](#), [Shimoyama M](#), [Mizuguchi T](#).

Department of Anesthesiology, Chiba University School of Medicine, Japan.

In order to investigate the efficacy of low-power He:Ne laser in treatment of pain, we irradiated 18 outpatients with severe postherpetic neuralgia. The efficacy of the low-power laser treatment was evaluated using a four-grade estimation, visual analog scale (VAS), and modified McGill pain questionnaire (m-MPQ) after every 10 of as many as 50 irradiations. The efficacy rate using a four-grade estimation at the end of 50 treatments was 94.4%. VAS decreased from 6.2 before irradiation therapy to 3.6 after 50 treatments, and the degree of pain relief was reduced to 44.6% and correlated with the number of treatments. The total numbers of words and the total scores of the m-MPQ decreased as the number of treatments increased. No complications attributable to the laser therapy were observed. These results suggest that repeated irradiation with low-power He:Ne laser is an effective and safe therapy for postherpetic neuralgia.

[Clin J Pain](#). 1989 Sep;5(3):271-4.

## **Effect of repeated irradiation of low-power He-Ne laser in pain relief from postherpetic neuralgia.**

[Iijima K](#), [Shimoyama N](#), [Shimoyama M](#), [Yamamoto T](#), [Shimizu T](#), [Mizuguchi T](#).

Department of Anesthesiology, Chiba University School of Medicine, Japan.

In order to investigate the efficacy of repeated irradiation of low-power helium-neon laser in pain relief, we irradiated 36 outpatients suffering from postherpetic neuralgia. Each patient underwent 20 trials of irradiation on several points around the painful area at a frequency of 2 or 3 times a week. The efficacy of the laser at the end of 20 trials was noticed on 88.9%, and the degree of pain relief was 55.3%, which correlated with the number of trials. These results suggest that the irradiation of He-Ne laser is an effective and safe treatment for postherpetic neuralgia.

[Neurosci Lett](#). 1983 Dec 30;43(2-3):339-44.

## **Relief from chronic pain by low power laser irradiation.**

### Walker J.

In a double blind study, repeated irradiation with a low-power (1 mW) helium-neon laser produced relief in subjects with chronic pain. Analgesia was observed after exposure of the skin overlying the radial, medial and saphenous nerves and in some cases, irradiation of the appropriate painful nerve. Exposure of areas of skin not innervated by these nerves did not result in pain relief. Of the patients with trigeminal neuralgia, post-herpetic neuralgia, sciatica and osteoarthritis, 19 of 26 experienced pain relief without the use of drugs. Patients who received sham stimulation reported no analgesia. Subjects who were exposed to laser irradiation had a large increase in the urinary excretion of 5-hydroxyindoleacetic acid, the degradation product of serotonin.