

Herpes

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Laser Therapy of Human Herpes Simplex Lesions

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ABSTRACT

Herpes Simplex is rather a widespread illness caused by human herpes virus generally combining primary lesions with periods of latency. The authors evaluate results of treatment with a low power laser and with classical antivirals. Obtained results are demonstrated in attached tables.

By way of illustration the editor also attached a series of images showing typical history of a herpes lesion treated with a laser.

INTRODUCTION

Herpes Simplex is an illness caused by the human herpes virus types 1 and 2 that generally present a primary lesion, with periods of latency and a tendency to relapse. It is also known as *Button of fever* or *Bladder of fever*. According to the World Health Organisation (WHO) an international prevalence of about 60 % is observed (1, 2).

An experimental study was carried out, where 232 patients affected by the Herpes Simplex type 1 virus were treated. All patients attended the clinic „Leonardo Fernández” in Cienfuegos during the period of January 2001 to January 2003, with the objective of determining the time of recurrence of labial herpes in the groups, studied before and after treatment, and to evaluate the effectiveness of low power laser in the treatment of the infection of the virus.

MATERIALS AND METHODS

Two groups were selected (study and control) with 116 patients in each group, distributed and classified according to the clinical stage in which they went to consultation. In the study group the patients were offered treatment with a GaAlAs diode laser (670 nm / 30 mW - 40 sec) in the prodromal stage and the stage of vesicles; or (670 nm /20 mW - 2 min) in the crust stage and in infections infected secondarily. To all these patients radiation among vertebrae C2 - C3, where the resident ganglion of the virus is located during the latent periods (670 nm / 30 mW - 30 sec), was also applied.

Control group was offered indicated treatment with antivirals (Aciclovir in cream and in pills) and other paliative therapies.

After having carried out the analysis of the data obtained, the following results were obtained:

Study group n = 116	Recurrence frequency						
	Once a month	Every 2 to 3 m	Every 4 to 5 m	Every 6 months	Once a year	First time	no recurrence
Before treatment	9	26	58	12	7	4	0
After treatment	0	0	37	22	25	0	32

Table 1: Patients of the study group, distribution according to the frequency of annual recurrence of the labial herpes before and after laser therapy.

When analysing Table 1 it is observed that the groups of patients suffering from herpes with high frequencies of recurrence (after being treated with laser an waiting one year prior to evaluation of the effectiveness) reported recurrence for more elongated periods of time and 32 patients did not even have any more recurrence.

Control group n = 116	Recurrence frequency after receiving treatment						
	Once a month	Every 2 to 3 m	Every 4 to 5 m	Every 6 months	Once a year	First time	no recurrence
Before treatment	7	24	56	14	9	6	0
After treatment	6	21	46	27	14	0	2

Table 2: Patients of the control group, distribution according to the annual recurrence frequency of labial herpes before and after treatment.

In Table 2 the same previous aspects are reflected but in the control group. As it can be observed the cases diminished in number, although discretely; those that presented more recurrence and of equal number of recurrences increased in number of patients in the periods of more lingering recurrence. In this group 2 patients reported not having had any more lesions during the analyzed year.

Recurrence frequency after receiving treatment						
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	Once a month	Every 2 to 3 m	Every 4 to 5 m	Every 6 months	Once a year	no recurrence
Study group (n = 116)	0	0	37	22	25	32
Control group (n = 116)	6	21	46	27	14	2

Table 3: Patients of both groups, distribution according to annual recurrence frequency of labial herpes after receiving treatment.

Table 3 compares both groups as for annual frequency of recurrence after having received corresponding treatment. When analyzing this, superiority of the group treated with laser becomes evident.

Clinical stage		Time of cure								
		First 48 h.		3 to 4 days		5 to 7 days		More than 7 days		Total
		Tot.	%	Tot.	%	Tot.	%	Tot.	%	
Study group (n = 116)	Prodromal	26	100	0	0	0	0	0	0	26
	Vesicles	40	95	2	4.8	0	0	0	0	42
	Crust	31	91	3	8.8	0	0	0	0	34
	Secondary infection	0	0	13	93	1	7.2	0	0	14
Control group (n=116)	Prodromal	0	0	25	96	1	3.9	0	0	26
	Vesicles	0	0	0	0	9	22	33	79	42
	Crust	0	0	0	0	24	71	10	29	34
	Secondary infection	0	0	0	0	0	0	14	100	14
Total		97	42	43	19	35	15	57	25	232

Table 4: Patients of both groups, distribution with relation to the clinical stage in which we intervened and the time of cure of the same ones.

As it can be observed in Table 4, in the study group 100 % of the prodromal stages, 95 % of the vesicular ones, and 91 % of the crust stages were able to cure during the first 48 hours. Patients with lesions infected secondarily needed more than 48 hours to cure, although they never surpassed 5 days.

These results, although astonishing, are corroborated by authors like Tunér and Schindl, where they highlight that treatment with a laser in the initial stages of Herpes Labialis has a percentage of superior success compared to conventional treatment, besides achieving an almost immediate relief of the symptoms (3, 4).

In the control group remarkable differences are appreciated when comparing them with that of the study group. Therapy with Aciclovir in early stages (first 72 hours) has been broadly suitable for many professionals and their use against Herpes Labialis has been studied by some authors (5).

CONCLUSIONS

Periods of annual recurrence in the study group were prolonged considerably after having received treatment, whilst in the control group such evident changes were not shown.

In the prodromal period the patients treated with laser all healed up in the first 48 hours, whilst those treated conventionally needed from 3 to 4 days to cure.

In the vesicular period and the period of crust, those of the study group cured in majority in the first 48 hours, whilst those of the control group needed more than 5 days.

In infected lesions those treated with laser cured mainly in 3 to 4 days, whilst those treated with medication needed more than 7 days to cure.

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ILLUSTRATIONAL IMAGES



Fig. 1: Herpes Day 1 (occurrence)



Fig. 2: Herpes Day 1+ (first laser treatment)



Fig. 3: Herpes Day 2 (morning, condition after 2 treatments)



Fig. 4: Herpes Day 2+ (afternoon, condition after 3 treatments)



Fig. 5: Herpes Day 3 (afternoon, cured after 4 treatments)

Low-intensity laser therapy is an effective treatment for recurrent herpes simplex infection. Results from a randomized double-blind placebo controlled study.

Schindl A, Neuman R.

J Investigative Dermatology. 1999; 113 (2): 221-223.

50 patients with recurrent perioral herpes simplex infections (at least once a month for more than 6 months) were treated with 690 nm, 80 mW laser, 48 J/cm², in a double blind study. Patients received daily irradiations for two weeks, 10 treatments. The treatment was given in a recurrence-free period and the irradiation was given at the site of the original herpes simplex infection. If both lips were involved, both upper and lower lips were treated. Patients were monitored for 52 weeks. The mean recurrence-free interval in the laser group was 37.5 weeks (range; 2-52 weeks) and in the placebo group 3 weeks (range 1-20 weeks). No side effects were noted.

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 which in many cases proves resistant to all the accepted 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 indeed 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

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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 60 mW 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.

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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:

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