



SOFT LASER IN THE THERAPY OF HERPES SIMPLEX LABIALIS

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Summary. In the last three decades, the laser has had a particular significance in dentistry. The soft laser is used in the therapy of aphtae, viral infections, all painful conditions in the oral cavity etc., because of its own positive effects on pain, better epitelization and shorter duration of the disease. The aim of this paper is to determine the effects of the soft laser on Herpes Simplex Labialis. Five patients with Herpes Simplex Labialis were treated at the Department for oral and Parodontal Diseases of the Dental Clinic of the Medical faculty of Niš. The patients were treated by HeNe soft laser at five seances, with duration of laser radiation of five minutes for one treatment. All the patients were first treated on the second day after the Herpes appearance. The intensity of pain was reduced even after the first treatment, and the crusts were formed after the second treatment. Finally, almost all the symptoms and signs of the disease disappeared after the fifth treatment. Laser can be recommended in Herpes Simplex Labialis therapy, for its evident analgetic effects, as well as for shorter disease duration.

Key words: Soft laser, herpes simplex labialis

Introduction

The laser has recently become extremely important both in medicine and stomatology. Soft lasers have been used to achieve very precise therapeutic effects:

- for biostimulating cells,
- for its analgetic effects and
- for its antiinflammatory effects.

Cell biostimulation provoked by soft lasers is reflected through the formation of the following mechanisms: reduction of cellular cariokinesis time, which leads to faster wound healing; the increase of cellular ATP, so that the potential cell energy is increased; stimulation of intra and extra cellular fluid ions, which supports biopolarisation, and, thus helps cellular exchange; stimulation of specific cellular elements, depending on their absorption potentials, regarding some wave lengths.

All of these mechanisms of stimulation and regulation produce effects which favour wound healing and swelling reduction, which leads to total improvement of both arterio-venal and lymphatic nutrition and microcirculation.

The analgetic effects represent one of the major indications for physiotherapy, which can show effects in two completely different directions: a modulation of the harmful message, on one hand, and endorphin production, on the other hand.

It is justified to believe that one of the mechanisms of pain alleviation by the laser, clinically tested, can be explained by its central influence on endorphin percentage.

An inflammation passes through several stages, during which biochemical agents are released and then secreted through cell membranes encompassed by the inflammation.

Some of these agents are prostaglandins, representing a fatty acid- arachidonic acid derivative. Production of prostaglandins is made possible: by the release of their antecedent, but this kind of synthesis can be performed only by means of the enzyme, supported by the effects of cyclooxygenase. Anyway, antiinflammatory, non-steroid drugs show their effects at the level of this enzyme in order to block the synthesis of prostaglandin. That is to say that the effects of the laser are based exactly on the level of the blockage of these agents.

Since the specific effects of Helium-Neon (HeNe) soft laser have been proven on the skin and mucous membrane, it has been used for treatment of the following conditions: bacterial infections, decubiti, stomatitis conditions caused by viral infections Herpes Simplex and Herpes Zoster, pains of various etiologies, etc.

The aim of this paper has been to determine the effects of the soft laser on Herpes Simplex Labialis.

Materials and Methods

Five patients with Herpes Simplex Labialis were treated at the Department for Oral and Parodontal Diseases of the Dental Clinic, Medical Faculty of Niš.

Once the anamnesis had been taken and the diagnosis stated, HeNe soft laser PL-9 was applied with the adequate values of laser parameters (Tab. 1).

All the patients were first treated on the second day after the Herpes appearance.

Three of the five patients were female and two of them were male, aged 38 to 50 years.

Results

The pain ceased even after the first treatment, and the crusts were formed after the second treatment.

Some HeNe soft laser investigations displayed faster healing, especially in the early stage, although different wound healing is not significant. Young (2) has investigated a combined infrared and HeNe laser therapy on wound contraction. No differences have been perceived in the wound area between the laser-treated and control groups.

The most frequent mechanism stimulation for soft laser-accelerated wound healing is that laser radiation stimulates the production of collagen in both in vitro and in vivo conditions.

According to some histological findings, Hester (3,4) suggests that laser radiation can proliferate the development of blood circulation within the regenerative tissue, which together with biochemical agents, secreted into inflamed tissue, can support the interpretation of the beneficial effects of laser radiation in Herpes Simplex Labialis therapy.

Table 1. The values of HeNe soft laser parameters in Herpes simplex Labialis treatment

Wavelength (nm)	Laser power (mW)	Spot size (mm)	Power density (mWcm ⁻²)	Operation	Exposure duration (min)	Working distance (cm)	Treatment number
632.8	1	2-3	14-32	CW	5	20-25	5

Finally, all the symptoms and signs of the disease disappeared after the fifth treatment.

Discussion

The role of soft lasers in wound healing and pain treatment has not yet been clarified completely. Escola et al. (1) have reported that HeNe laser irradiation of gingival tissue immediately after extraction results in beneficial effects on the process cicatrisation, making it faster and of better quality, without edema and discomfort.

Considering the controversy and the lack of sufficient information concerning the effects of laser, further research is needed to estimate the success of soft lasers in stomatology.

Conclusion

According to the results obtained, soft laser can be recommended in Herpes Simplex Labialis therapy, for its evident analgetic effects, as well as for shorter disease duration.

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SOFT LASER U TERAPIJI HERPES SIMPLEX LABIALISA

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Kratak sadržaj: U poslednje vreme laseru se pridaje poseban značaj u stomatologiji. Laser se koristi u terapiji afti, virusnih infekcija, svih bolnih stanja u usnoj duplji, zbog svog pozitivnog efekta na bol, bolju epitelizaciju i kraće vreme trajanja bolesti. Cilj ovog rada je da se utvrdi terapijski efekat lasera kod Herpes Simplex Labialisa. Obradjeno je pet pacijenata sa Herpes Simplex Labialisom na Odeljenju za bolesti usta i parodonta Stomatološke klinike Medicinskog fakulteta u Nišu. Pacijenti su tretirani soft HeNe laserom u pet seansi sa trajanjem laserske emisije od pet minuta. Svi pacijenti su tretirani od drugog dana pojavljivanja bolesti. Već posle prve seanse laserom došlo je do smanjenja intenziteta bola, a posle druge seanse do stvaranja krusta. Konačno, posle pete seanse došlo je do nestanka skoro svih simptoma i znakova bolesti. S obzirom na dobijene rezultate možemo preporučiti soft laser u terapiji Herpes Simplex Labialisa, jer sigurno dolazi do analgetičkog efekta i skraćanja vremena trajanja bolesti.

Ključne reči: Laser, herpes simplex labialis

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