

ABSTRACT

Possibilities of the Analgesic Therapy of Ultrasound and Non-invasive Laser of Plantar Fasciitis

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OBJECTIVE: To compare the effectiveness of the two therapeutical approaches, ultrasound and low level laser used in patients suffering from calcar calcanei-plantar fasciitis.

METHODS: 171 patients with calcar calcanei and plantar faciitis diagnosed with the x-ray were divided into four groups.

Group A

60 patients treated with ultrasound therapy (UST). Ultrasound with the output of 1 W per cm² was applied for 5 minutes in each of 10 applications and the head of device pointed to the place of maximum pain;

Group B

61 patients were treated with low level laser therapy (LLLT) without any additional treatment including pharmacotherapy. Laser with 870 nm of wavelength, output of 200 mW, was applied on the place of maximum pain. Energy density of 9 J/cm² in the series of 10 laser applications every other day was used.

Group C

8 patients where previous UST had no or minimal effect and therefore LLLT was subsequently applied the same way as in the group B. Laser was applied not earlier than 14 days after the ultrasound.

Group D (Control)

In this group of 52 patients the sham laser radiation (no laser beam) was applied whereas patient and personnel could not identify whether the laser was shamed or not. This group is used as control "placebo" group.

The effectiveness of the treatment was determined according to the evaluation of the patient using certain criteria described in the table.

RESULTS: The complete disappearance of pain was seen in 50% of patients, partial improvement in 16.6% and no effect in 33.3% of patients treated with US.

In group B, where LLLT has been used, 64% of patients described disappearance of pain, 26% with improvement and in 10% of patients this therapy brought no effect.

In the group C of previous UST and subsequent use of LLLT, 75% of patients evaluated their treatment as successful. In 25% however, laser had no effect.

Summarily, 69 patients were treated with LLLT from which 67% described complete pain relief, 20% partial improvement and in 13% laser brought no effect.

In the group D there were 50 patients treated with sham laser and full effect was seen in 18% of them, partially reduced pain in 42% and without any effect in 40%

DISCUSSION and CONCLUSION

The results show that the LLLT is a good therapeutical approach in the treatment of pain in patients suffering from calcar calcanei – plantar faciitis. The treatment with laser was significantly more successful then the ultrasound therapy, which is currently the most common therapy used for plantar fasciitis.