

ESWT Versus ESWT Combined with Infrared Low Level Laser Therapy (LLLT) in Treatment of Chronic Plantar Fasciitis

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Device and producing company:

BTL5000 SWT Power, BTL5000 Laser

Introduction:

Chronic Plantar Fasciitis (CPF) is one of the most common causes of heel pain. It was previously proven that ESWT is an effective conservative treatment for CPF, with better outcomes produced with higher energy ESWT however, the heel pain frequently recurs. Therefore the possibility of using other forms of conservative therapy as an adjunct to ESWT rather than performing surgery should be considered, as the indications for surgery are not well codified. The studies considering efficacy of GaAIIAs low level laser therapy (LLLT) brought conflicting results, thus LLLT in monotherapy of plantar fasciitis remains controversial. The aim of this prospective study was to evaluate the effectiveness of ESWT in monotherapy as well as the effectiveness of ESWT followed by application of LLLT.

Methods:

We studied 96 patients (96 heels) with chronic plantar fasciitis persisting for at least 6 months. Fifty patients were included in the ESWT only group (group A) and 46 patients in the ESWT/LLLT group (group B). Initial evaluation included completing visual analogue scale (VAS), short form of McGill questionnaire and Roles and Maudsley scale. The VAS as evaluated before each application. Follow up was done 2 weeks and 2, 4, 6 and 12 months after the last application. In the ESWT only group, 2000 shockwaves in 4 weekly sessions were delivered by BTL5000 Power SWT device. Applied energy was 0.16 mJ/mm² at a frequency of 8 Hz. In the ESWT/LLLT group, the same shockwave therapy procedure was provided and immediately followed by application of GaAIIAs infrared laser, wavelength 830 nm, continuous frequency, output power of the probe was 400 mW with total dose per session equal to 20 J/cm².

Results:

The complete data from 89 patients were collected. Seven subjects (4 in the group A and 3 in the group B) did not complete the study for various reasons. There was no difference in baseline pain and basic demographic data between groups A and B. VAS improvement in ESWT and ESWT/LLLT groups at 2, 6 and 12 months follow-up was significant in both groups.

Discussion:

Both ESWT and ESWT/LLLT applications are safe and effective in treatment of chronic plantar fasciitis. From the long-term perspective, the efficacy is comparable in both groups. LLLT seems to be more beneficial at the beginning of the therapy.

Conclusion:

Combining ESWT with GaAIIAs low level laser therapy appears to provide moderate improvement in the initial phase of treatment. Further investigation is necessary to validate these results.