

Novel Approach to Plantar Fasciitis: Pulsed Electromagnetic Field Therapy

Christopher Kent Bromley DPM FACFAS

Adjunct Professor, Kent State University College of Podiatric Medicine

Summary of manuscript to be submitted for publication

Objective: This study aimed to evaluate the efficacy of pulsed electromagnetic field (PEMF) therapy from the OrthoCor Active System for treatment of plantar fasciitis.

Methods: Adult patients presenting with more than 2 weeks of heel pain due to plantar fasciitis were treated for 2 hours per day for 12 weeks with PEMF and heat delivered by the OrthoCor Active System foot device. Efficacy was measured by ultrasound examination and surveys at 0 (baseline), 4, 8, and 12 weeks of treatment. Ultrasound was used to measure plantar fascia maximal thickness and hypoechoic region width which indicates extent of injury. Function was evaluated using Foot and Ankle Disability Index (FADI) and Patient Specific Functional Scale (PSFS) survey scores.

Results: Repeated measures ANOVA showed a statistically significant improvement in all assessments with use of PEMF therapy from the OrthoCor Active System. Mean thickness of the plantar fascia improved from 6.5 mm at the initial visit to 4.3 mm after 12 weeks of treatment, a decrease of 2.2 mm (34%) with a p-value of 0.005. Mean width of the hypoechoic region in the plantar fascia improved from 32 mm at the initial visit to 6.6 mm after 12 weeks of treatment, a decrease of 25.6 mm (79%) with a p-value of 0.004.

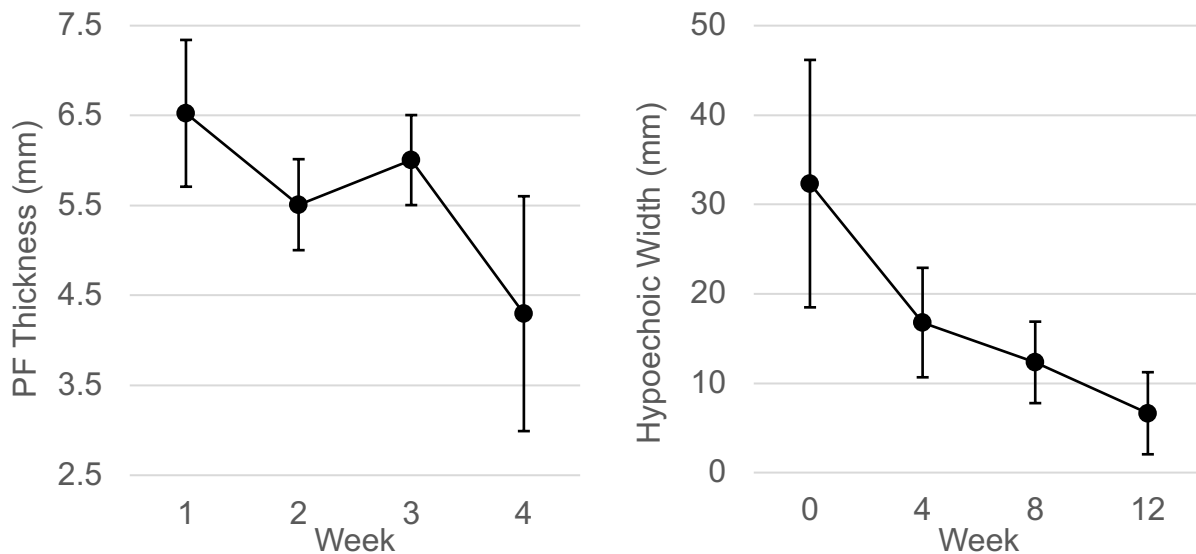


Figure 1: Mean plantar fascia thickness (Left) and hypoechoic width (Right) evaluated by ultrasound, bars indicate the 95% CI for the mean.

Mean FADI survey scores improved from 55 at the initial visit to 81 after 12 weeks of treatment, an increase of 25.4 (46%) with a p-value of <0.001. Mean PSFS survey scores improved from 2.9 at the initial visit to 7.7 after 12 weeks of treatment, an increase of 4.8 (166%) with a p-value of <0.001.

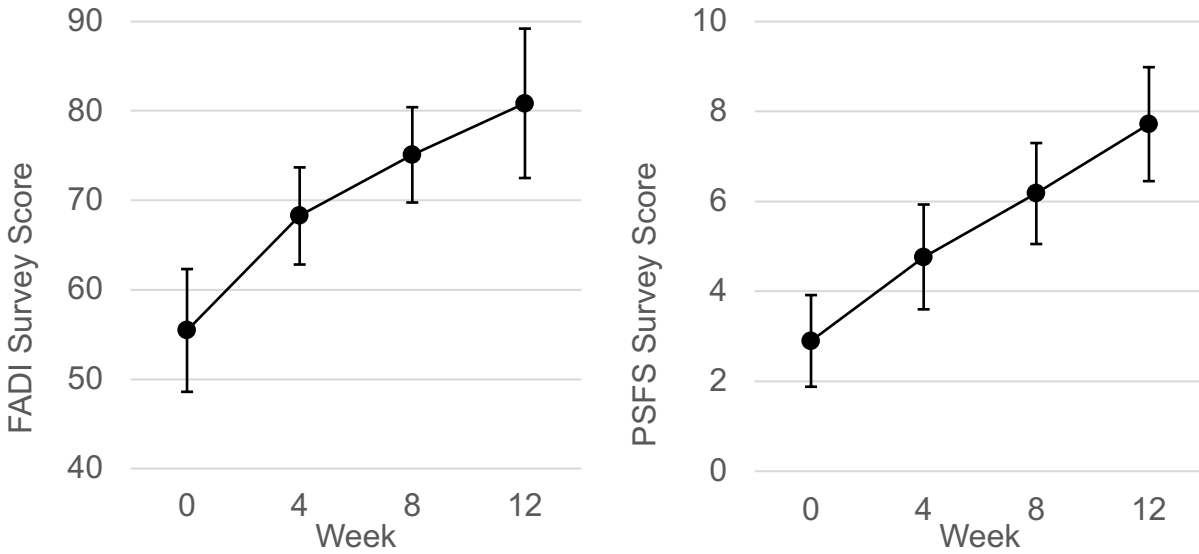


Figure 2: Mean FADI and PSFS survey scores, bars indicate 95% CI for the mean.

Conclusion: Pulsed Electromagnetic Field (PEMF) therapy from the OrthoCor Active System was effective for stimulating healing and improving function for patients with plantar fasciitis, demonstrated by significant improvement in ultrasound measurements and functional scores. This study suggests that PEMF therapy is an effective addition to the conservative treatment of plantar fasciitis.