

# EFFECTIVENESS OF HIGH INTENSITY RADIAL SHOCK WAVE THERAPY IN THE TREATMENT OF CHRONIC PLANTAR FASCIITIS

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## 1. Introduction

Literature is scarce concerning the effectiveness of high dose radial extracorporeal shock wave therapy (ESWT). Therefore, the aim of this study was to investigate its effectiveness on pain, function and pressure pain threshold in patients with chronic plantar fasciitis (PF).

## 2. Materials & Methods

Patients with a diagnosis of chronic (pain lasting for more than 3 months) uni- or bilateral PF with a history of failed conservative treatment were included. After a 6-week control period during which no treatment occurred, a 2-week treatment period followed by a three weeks of rest (cicatrisation phase) was provided (Fig. 1). The treatment period consisted of three radial ESWT sessions (2000 impulses of 10 Hz frequency per session with an energy flux density of 0,275mJ/mm<sup>2</sup>) separated by a one-week interval. Patient assessments (pain intensity, foot function and pressure pain threshold (PPT) at the site of maximum local tenderness disability) were conducted at baseline, after the 6-week control phase (pre-treatment) and at the end of the cicatrisation phase (post-treatment) with an original frame (Fig. 2).

## 3. Results

Thirty patients (19 women (63.3%)) with chronic PF and a mean age of 51.9±11 years were included in the present study. No drop-out occurred throughout the study period. No changes were observed at the pre-treatment assessment session except for pain intensity which decreased slightly but significantly ( $P < 0.05$ ) (Fig. 3). At the post-treatment session, highly significant ( $P < 0.001$ ) and clinically meaningful changes occurred for pain intensity (-34%), foot function score (-60%) and PPT (+68%) (Fig 3-5).

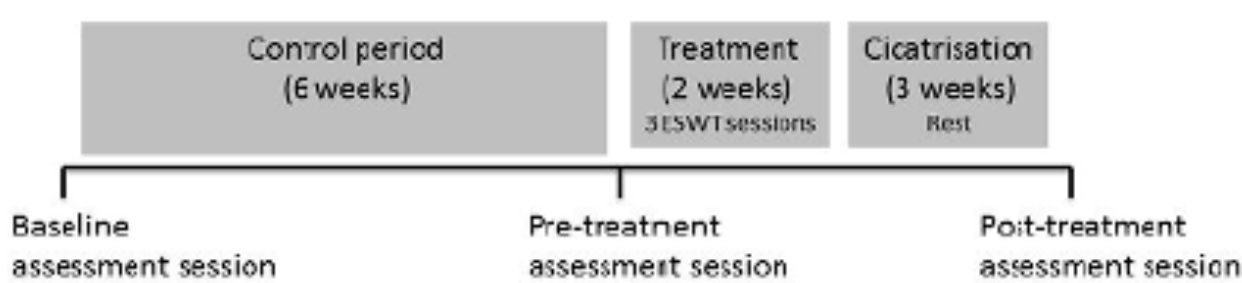


Figure 1. Study process timeline.



Figure 2. The original frame used to record the most painful point for the PPT measurement and for the treatment.

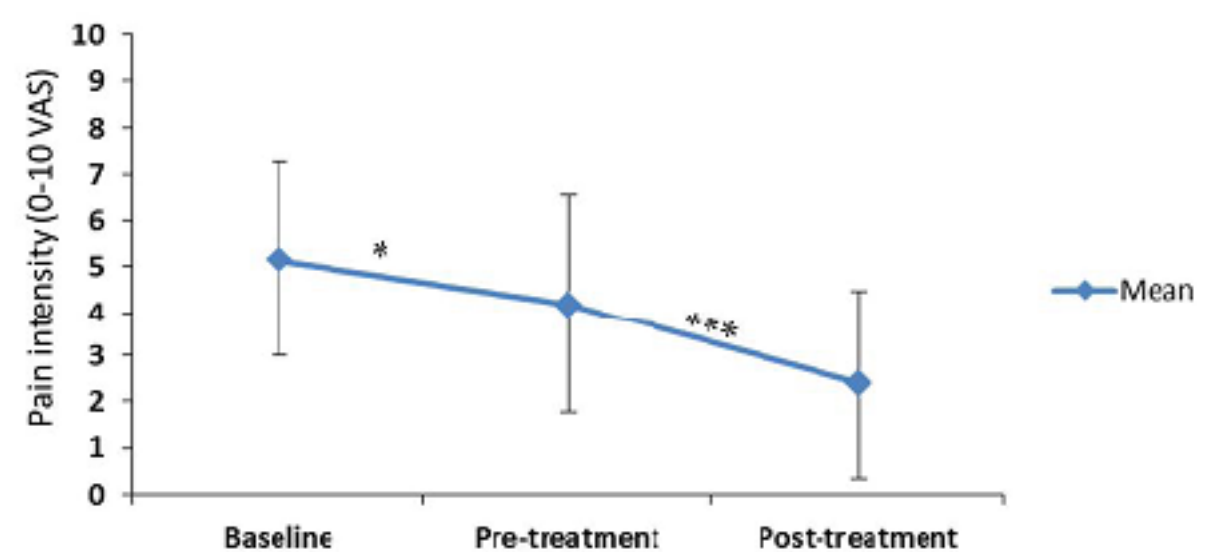


Figure 3. Mean (SD) pain intensity (VAS 0-10cm) at baseline, and at the pre-treatment and post-treatment assessments (\* =  $P < 0.05$  and \*\*\* =  $P < 0.001$ ).

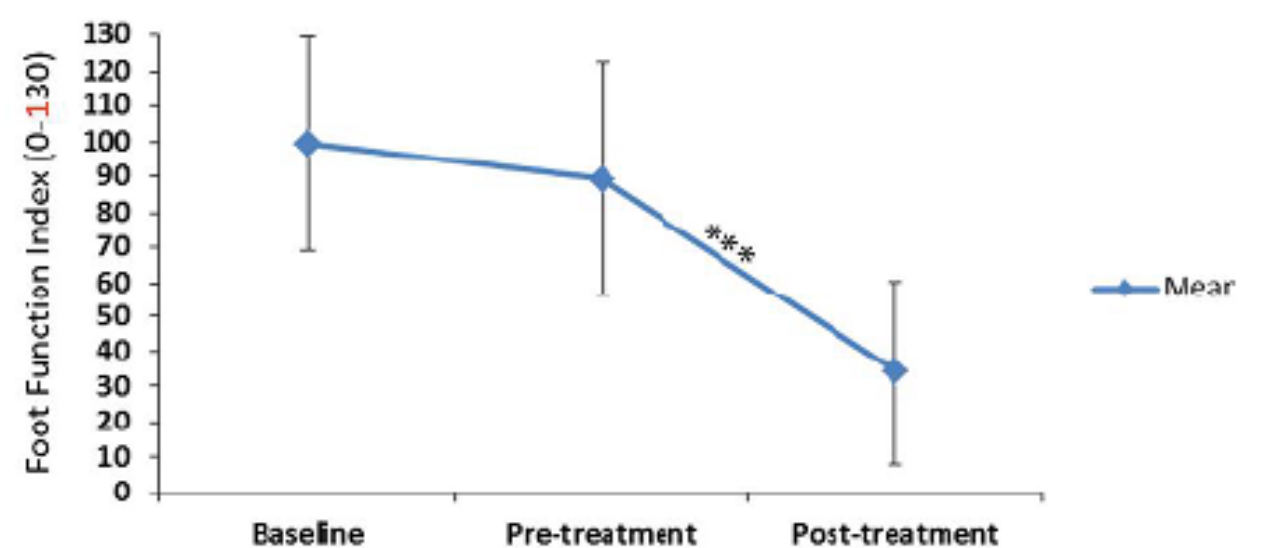


Figure 4. Mean (SD) Foot Function Index score at baseline, and at the pre-treatment and post-treatment assessments (\*\*\* =  $P < 0.001$ ).

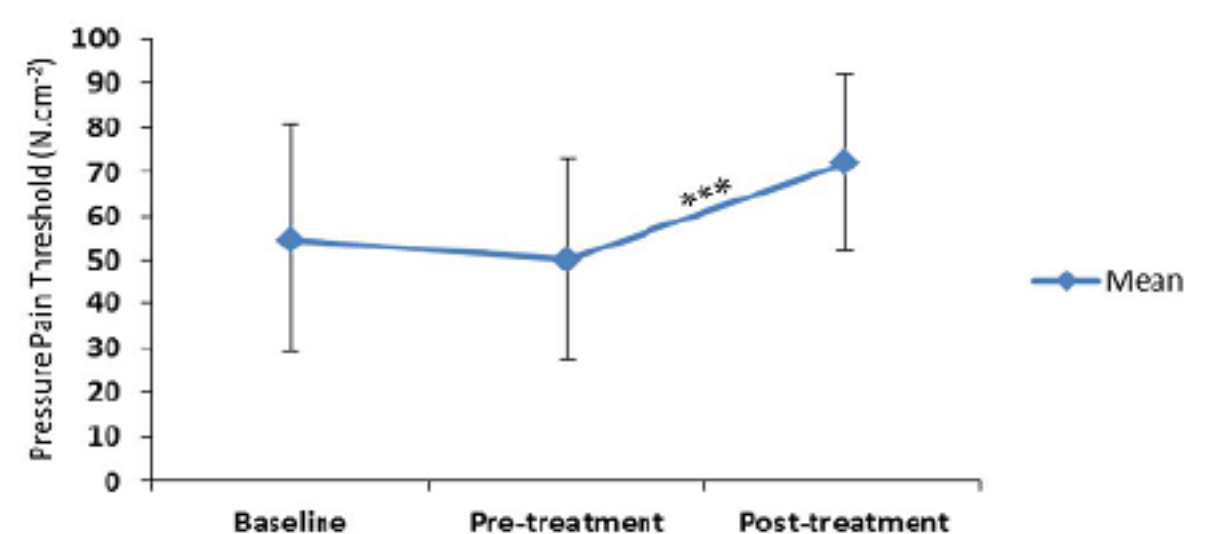


Figure 5. Mean (SD) Pressure Pain Threshold (PPT) at baseline, and at the pre-treatment and post-treatment assess.

## 4. Conclusion

The present study suggests that high dose radial ESWT is a feasible and effective way to quickly and significantly decrease pain and disability in most patients with chronic PF.

## 5. Reference

Demoulin C, Vanderthommen M, Fromm A et al. Effectiveness of High Intensity Radial Shock Wave Therapy in The Treatment of Chronic Plantar Fasciitis. J J Physical Rehab Med. 2015, 1(3): 011.

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