

# Extracorporeal shock wave therapy in runners with plantar fasciitis



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I have no financial conflicts to disclosure

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# Background

## Indication of extracorporeal shockwave treatment(ESWT) 【By international shock wave institute】

- chronic tendinopathy
- planter fasciitis
- calcified tendinitis
- tennis elbow
- Jumper's knee, etc.

Running is one of the most popular sports worldwide, with many health benefits. Injuries are also common, with running-related injuries reported in up to 79% of runners annually.

Extracorporeal shockwave treatment can be used to treat soft tissue conditions, with the strongest level of evidence for management of plantar fasciitis.

# Purpose

To assess the benefit to treat plantar fasciitis with low-dose energy extracorporeal shock wave therapy (ESWT) and the efficacy of such treatment to abate the painful symptoms allowing a rapid return to the running activity.

# Subject

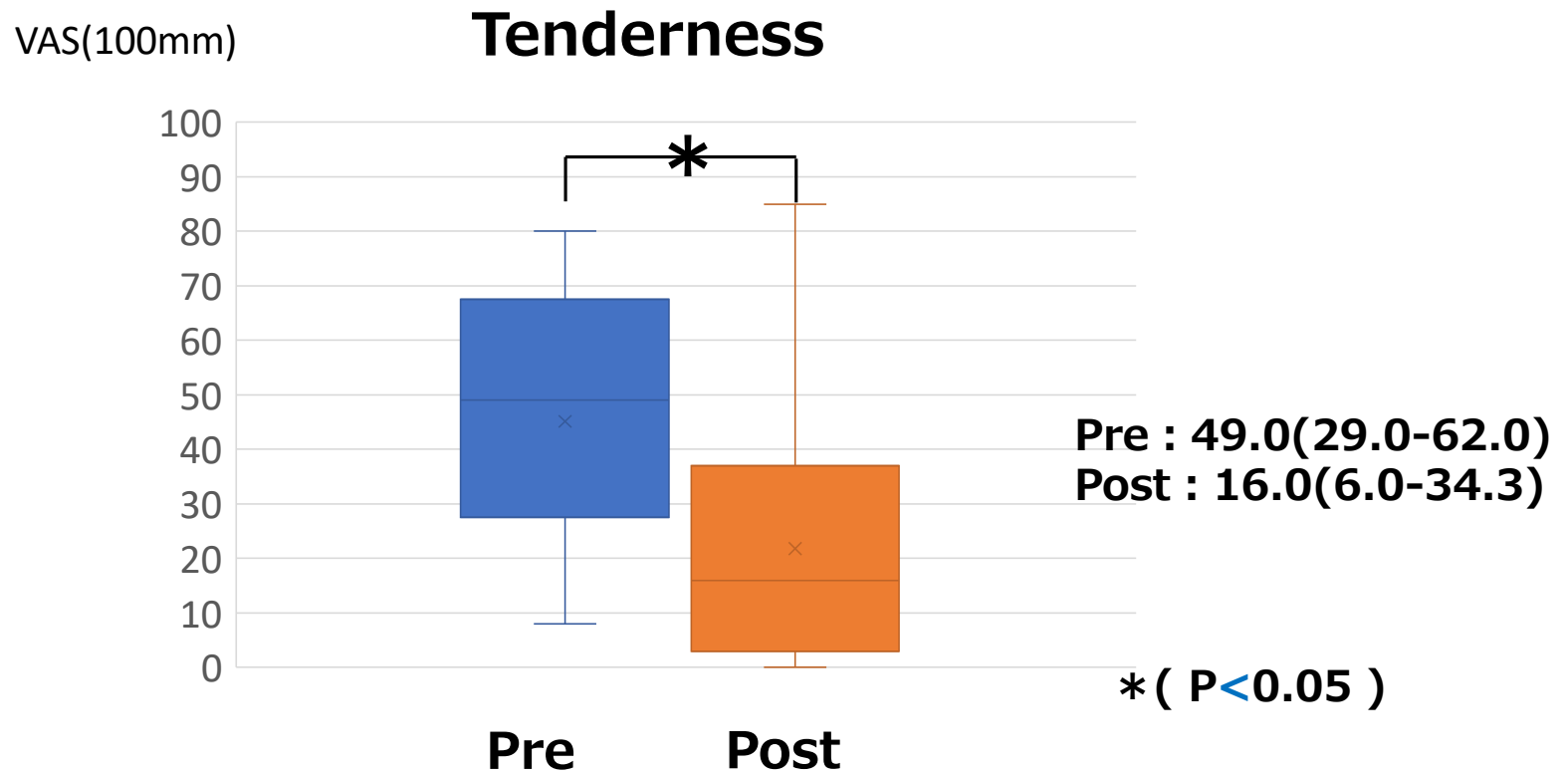
	<b>20 patients (20 feet) diagnosed as planter fasciitis</b>
<b>Age</b>	<b>22-79 years old, averaged 49.3</b>
<b>F/M</b>	<b>11 Females, 9 males</b>
<b>Level of Sports</b>	<b>Recreational</b>

**※Informed content obtained by all subjects.**

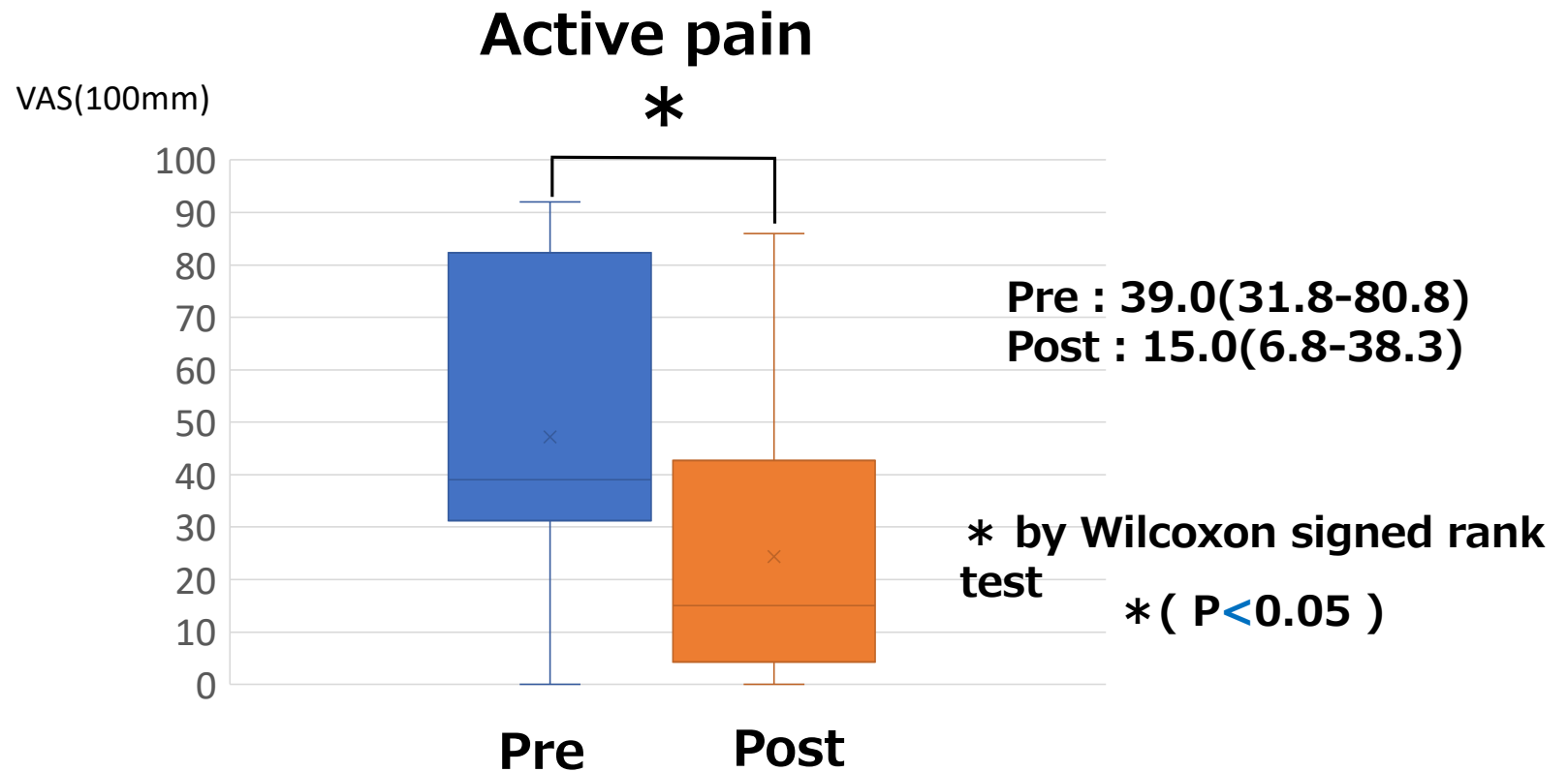
# Therapy Methods

<b>Device</b>	<b>Dornier, EposUltra</b>
<b>Energy</b>	<b>0.36mJ/mm<sup>2</sup></b>
<b>Frequency/ total energy</b>	<b>5000 times or 1300mJ</b>
<b>location</b>	<b>Tender points · active pain region</b>
<b>Evaluation</b>	<b>Tenderness · Active pain Visual Analogue Scale(VAS : 100mm)</b>
<b>Statics</b>	<b>Wilcoxon signed-rank test(p&lt;0.05)</b>

# Results Tenderness



# Results Active pain





# Discussion 1

## Effect of ESWT to the insertion of tendon

- ① **Effect to Nerve** • **Ohtori S, et al.(2001)** : degeneration and reinnervation of sensory nerve fibres.
- ② **Effect to tendon** • **Wang CJ, et al.(2003)** : induces the ingrowth of neovascularization and improves blood supply to the tissues.
  - **Han SH, et al.(2009)** : inflammatory cytokine and MMP production would be down-regulated by shock wave stimulation

**The immediate effect to nerve with ESWT might improved planter fasciitis in this study**

# Discussion 2

## Effect of ESWT to runner with planter fasciitis

- **Moretti B, et al. (2006) : Extracorporeal shock wave therapy in runners with a symptomatic heel spur.**

Four sessions (once weekly) of low-dose ESWT seems to be a good mean to treat plantar fasciitis in runners with heel spur.

**Our study showed single treatment with ESWT could improve the planter fasciitis in runners.**

# Summary

- 1. Extracorporeal shock wave therapy was performed in runners with plantar fasciitis**
- 2. ESWT improved them immediately.**
- 3. Single ESWT may be useful in runners with plantar fasciitis.**

# References

1. Ohtori S, et al.; Shock wave application to rat skin induces degeneration and reinnervation of sensory nerve fibres *Neurosci Lett* 315:57-60, 2001
2. Wang CJ, et al.; Shock wave therapy induces neovascularization at the tendon-bone junction. A study in rabbits. *J Orthop Res* 21:984-9, 2003.
3. Han SH, et al.; Effect of extracorporeal shock wave therapy on cultured tenocytes. *Foot Ankle Int* 30:93-8, 2009.
4. Moretti B, et al.; Extracorporeal shock wave therapy in runners with a symptomatic heel spur. *Knee Surg Sports Traumatol Arthrosc* 14:1029-32, 2006.