



Percutaneous Electrical Nerve Stimulation for Chronic Hyperalgesia: Interim results of a Short Term Sham-Controlled Double-Blind Cross-Over Randomised Clinical Trial

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Background and Aim :

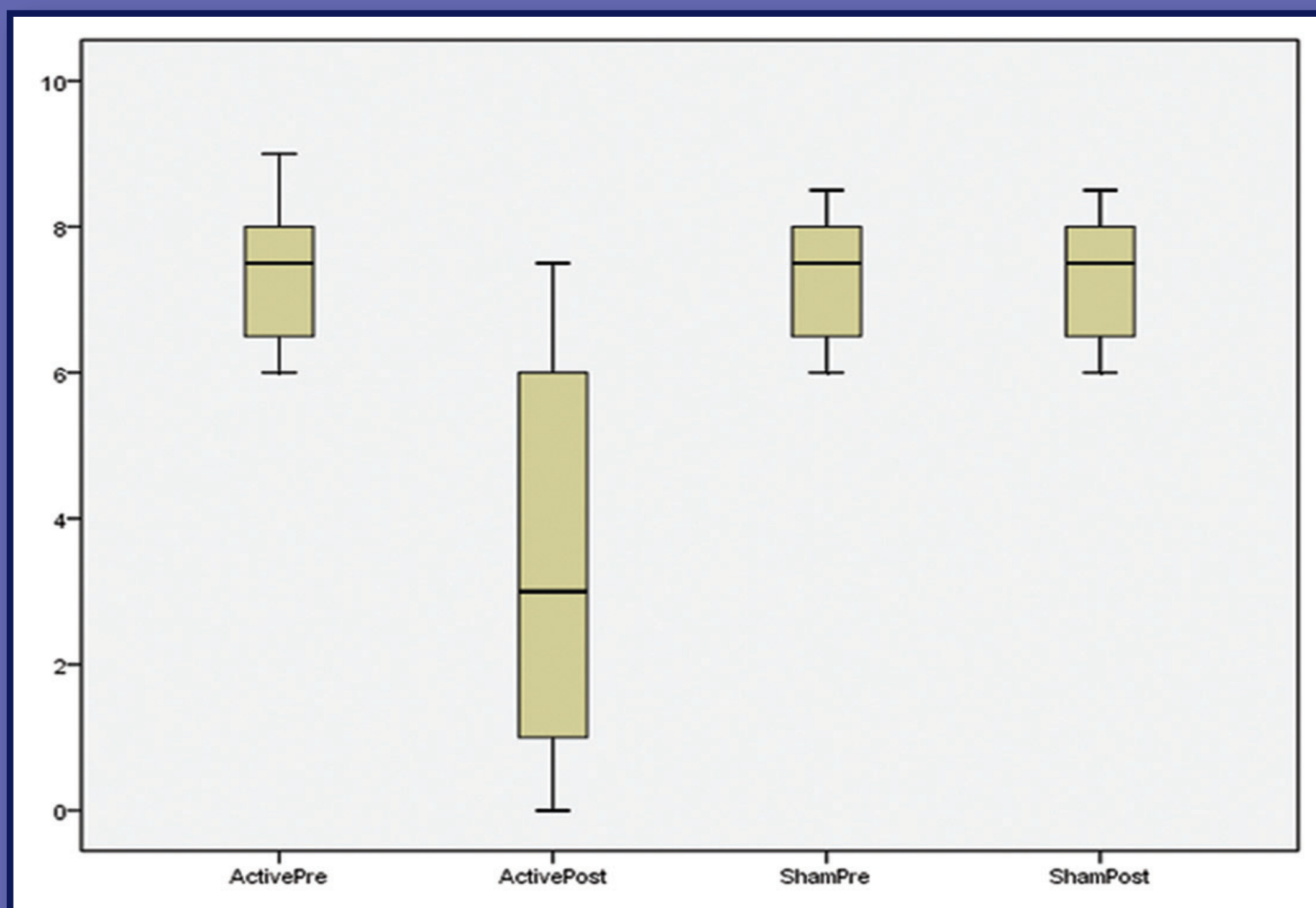
Chronic neuropathic conditions with hyperalgesia are often resistant to pharmacological treatment. Percutaneous electrical nerve stimulation (PENS) is a relatively new therapy for pain relief in which probes are placed under the skin to bypass the hyperalgesic areas and so aid compliance. The frequency of stimulation rapidly alternates between 2 and 100 Hz. Open studies and single-blinded controlled studies are suggestive of benefit in some chronic pain states. ^(1, 2)

Our aim is to investigate in a randomised, double-blinded, sham-controlled study the short term effect of PENS on pain intensity in patients with chronic hyperalgesia.

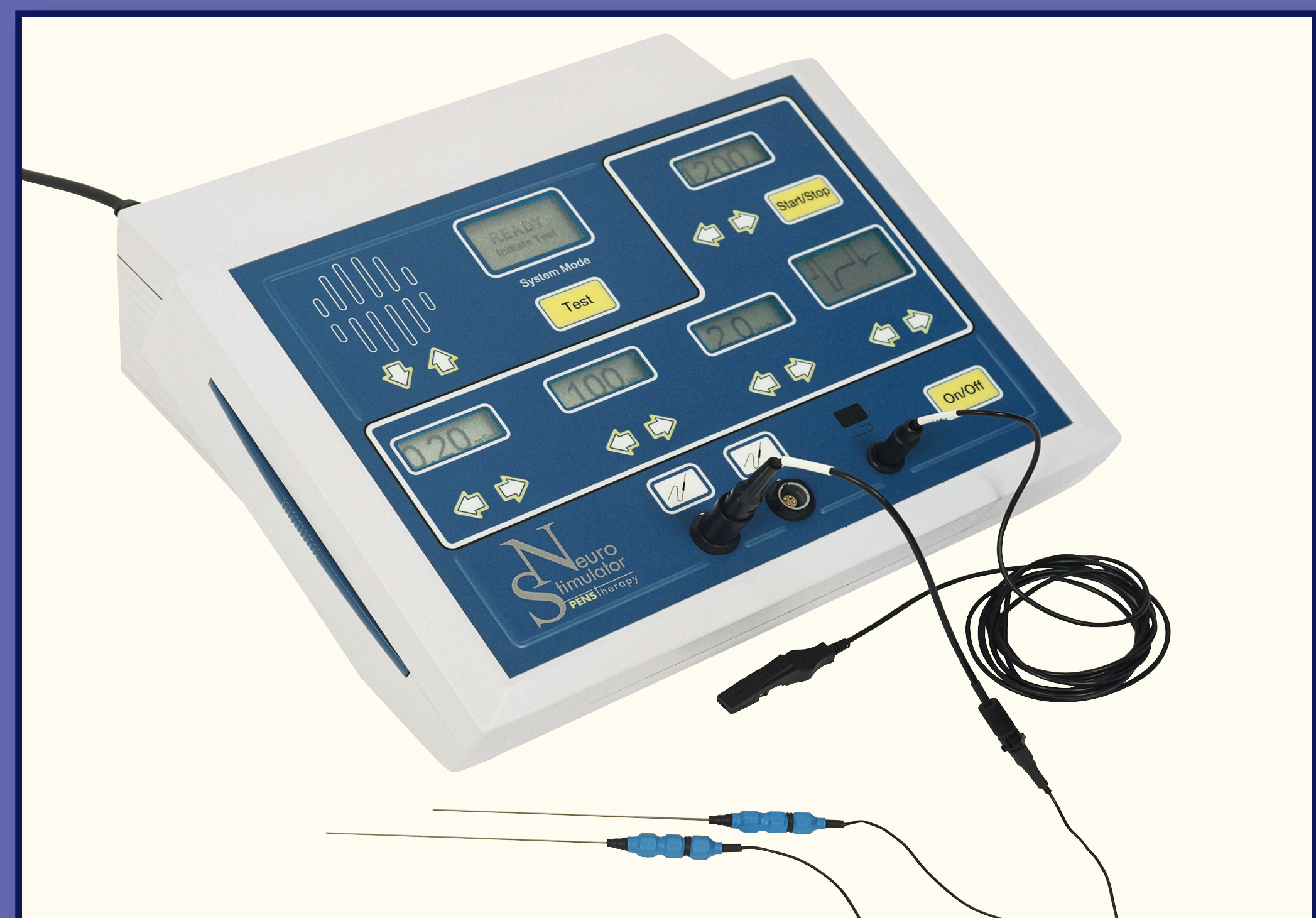
Methods:

13 patients with chronic hyperalgesia, unresponsive to conventional and adjuvant analgesic medications and to local anaesthetic/steroid infiltrations have presently been recruited to this double-blind cross-over randomised sham-controlled clinical trial. For each of the two arms of the study, the numerical rating scale (NRS) score for pain, was assessed immediately before and 1 - 7 days post-therapy. The Neurostimulator™ (Algotec-ltd) PENS therapy device was used.

Results:



Box-plot: NRS pre & post-therapy



The Neurostimulator PENS therapy Device

For the active therapy; the median NRS changed from 7.5/10 pre-therapy to 3/10 post-therapy, $Z = -2.692$, $n = 13$, $P = 0.007$ (2-tailed); whilst for the sham therapy; the median NRS remained at 7.5 pre- and post-therapy, $Z = 0$, $n = 13$, $P = 1$ (2-tailed) (*Wilcoxon matched pairs signed rank sum test*).

Conclusion:

From the interim results of this study, it appears that percutaneous electrical nerve stimulation may produce a significant reduction in pain intensity in the short term in patients with chronic hyperalgesia. Further data is being collected.

References:

- (1) Borg-Stein J, et al. *Pain Practice*, 2003; 3(2):125-34.
- (2) Ghoname E-SA, et al. *Pain*, 1999; 83: 193-9.