

Impact of low frequency transcutaneous electrical nerve stimulation on symptomatic diabetic neuropathy using the new Salutaris device.

- [Forst T](#),
- [Nguyen M](#),
- [Forst S](#),
- [Disselhoff B](#),
- [Pohlmann T](#),
- [Pfutzner A](#).

Institute for Clinical Research and Development (IKFE GmbH), Mainz, Germany.
thomasf@ikfe.de

In a double blind, randomised study, 19 patients suffering from mild-to-moderate symptomatic diabetic neuropathy (Total Symptom Score, NTSS 4-16) received either treatment with the new transcutaneous electrical nerve stimulation (TENS) device "Salutaris" (verum group) or a placebo treatment with an identical but electrically inactive device (placebo group). Stimulation pads were placed at the anatomical localisation of the peroneal nerve and stimulation was performed using a low frequency mode. At baseline (V1), after 6 (V2), and 12 (V3) wk of treatment, the patients' symptoms were registered using the new total symptom score (NTSS-6) and a visual analogue scale (VAS). In addition, sensory nerve thresholds (temperature, vibration, pain) and microvascular function were measured at the lower limb at baseline and after 12 wk of treatment. Active TENS-treatment resulted in a significant improvement in NTSS-6 score after 6 wk (-42%) and after 12 wk (-32%) of treatment (baseline: 10.0+/-3.3, 6 wk: 5.8+/-5.0, p<0.05; 12 wk: 6.8+/-3.9, p=0.05; placebo group: baseline: 7.6+/-3.1; 6 wk: 8.1+/-5.1, n.s.; 12 wk: 6.5+/-6.1, n.s.). Subanalysis of the different qualities of the NTSS-score revealed an improvement in numbness (2.2+/-1.0 to 1.6+/-1.3; p<0.03); lancinating pain (1.6+/-1.1 to 0.6+/-0.9; p<0.02) and allodynia (1.4+/-1.6 to 0.5+/-1.0; p<0.05). Also, a significant improvement in the VAS rating was found after 6 wk of TENS therapy (19.8+/-5.0 to 14.4+/-9.6; p<0.05), while no change was observed in the placebo arm. In conclusion, our study indicates that the new TENS device "Salutaris" is a convenient, non-pharmacological option for primary or adjuvant treatment of painful diabetic neuropathy.

PMID: 15334794 [PubMed - indexed for MEDLINE]