



OR041 - Electrical Neurostimulation for the Treatment of Non-Healing Wounds of Arterial Origin in Technically Inoperable Patients

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Goals and Objectives

Wound treatment in patients with arterial occlusive disease (AOD) still remains one of the most difficult operations. AOD treatments are well coded and aimed at achieving revascularisation, the crucial point for tissue repair. Sometimes patients are technically inoperable and delaying amputation is the only result, if pain is well controlled. In these cases vasoactive drugs are used, first of all prostaglandins, the last ditch before amputation. Another alternative could be Hyperbaric Oxygen Therapy which requires repeated cycles. Nevertheless, in many patients neither revascularisation nor prostaglandin therapy can be performed.

Purpose

The primary end point was to reduce the amputation rate with electrical neurostimulation treatment (FREMS™, Lorenz Biotech). Secondary clinical success was to improve symptoms measured by Visual Analogue Scale (VAS).

Methods

A total of 166 patients (87 women; mean age 80.0 ± 12.2 years) with wounds caused by AOD, technically inoperable and with problems with the administration of prostaglandins, were analyzed. Patients with neuropathy were excluded. Fifty nine (35%) patients were treated with FREMS for 10 consecutive twice-daily sessions within two weeks. The others were analyzed as control group.

Results

In a one-month period, the amputation rate was reduced from 52.34% to 30.51% (controls vs. FREMS, $p=0.0187$). The reduction was mostly in minor amputation rate (13.07% less). In FREMS group, vascularisation of the wound bed was increased from the first application and repair process was reactivated at the end of treatment. The clinical improvement in wound healing corresponded to pain control that was achieved 48 hours after the first FREMS application. VAS was reduced from 7.1 ± 2.9 to 2.9 ± 2.0 ($p < 0,0001$) at the end of treatment.

Discussion / Conclusion

FREMS is safe and effective for the treatment of wounds of arterial origin in technically inoperable patients and with problems with the administration of prostaglandins.