EFFICACY OF PERIPHERAL NERVE FIELD STIMULATION IN CHRONIC PAIN PATIENTS DUE TO COMPLETE SPINAL CORD INJURY

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1. INTRODUCTION

A complete spinal cord injury (CSCI) may cause intense neuropathic pain. Often, pharmacological treatment is unsatisfactory and spinal cord stimulation is difficult or contraindicated. We report the effects of peripheral nerve field stimulation (PNfS) in CSCI patients.

2 PATIENTS AND METHODS

Five CSCI patients (age 55 ± 10 years) with at-level, chronic (> 6 months) intense pain (VAS > 6) with neuropathic features underwent PNfS. Patients had been unresponsive/intolerant to previous pharmacological treatments and contraindicated to spinal cord stimulation. Following a successful 2 week trial (pain relief > 50%) with an external generator, patients were implanted with two permanent octopolar arrays in the subcutaneous tissue of painful dermatomes (EON, St Jude Medical Italia, Agrate Brianza MB, Italia; stimulation: 40 Hz, 4-8 Volts). Patients were evaluated before and during PNfS with pain VAS, the Beck Depression Inventory (BDI) and the Short Form Healthy Survey (SF39v2). Stats by two-tail *t*-test; significance P < 0.01.

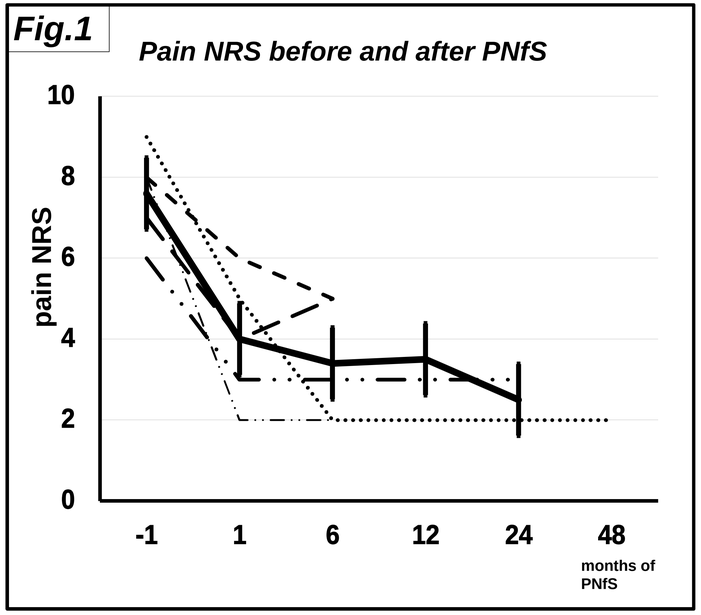
3. RESULTS

After six months of PNfS, three patients were responsive, one partially responsive and one nonresponsive (Fig.1 . Compared to baseline, PNfS significantly (P < 0.05) decreased pain intensity (VAS from 7,5 ± 2,3 to 3,3 ± 0,5) (Fig. 1), depressive symptoms (BDI from 15 ± 4.5 to 7.6 ± 3.5) and improved SF36v2 (Fig.2). Dosage of antineuropathic drugs decreses by 20-60% in the first six months of PNfS. Duration of PNfS was on average 29 ± 24 months and longer than 48 months in 2 patients.

4. DISCUSSION AND CONCLUSIONS

In this group of CSCI patients, PNfS significantly improved pain symptoms and quality of life. PNfS had an analgesic efficacy similar to that of spinal cord stimulation and should be considered as a therapeutic alternativ for CSCI patients.

Fig.1



5. FIGURE LEGENDS

Figure 1. Pain NRS in individual patient (broken lines) at 1 month before and at after 1, 6, 12, 24 and 48 months of PNfS, and their mean (solid line).

Figure 2. Quality of Life (SF36v2) before (open bars) and at 6 months after PNfS.The broken line is reference norm values for same age subjects. **, different from baseline, P < 0.01

Figure 3. Drug dosage decrease after 6 months of PNfS.

Fig.2

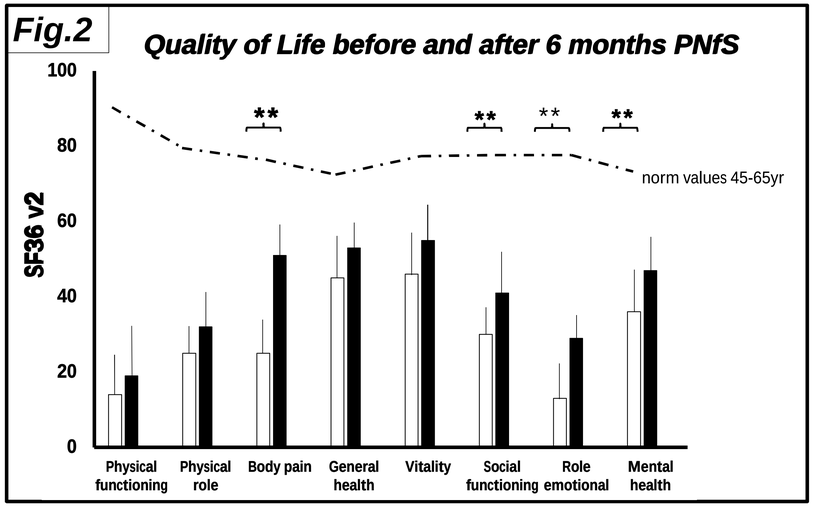


Fig.3