

# PENS THERAPY FOR THE TREATMENT OF INTRACTABLE OCCIPITAL NEURALGIA

## PRELIMINARY DATA

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### AIM:

Percutaneous neuromodulation therapy (PNT), with leads and pulse generator implanted for continue stimulation, has been successfully used for treatment of chronic neuropathic disorders, including intractable occipital neuralgia, for more than 20 years. PENS is a relatively novel, minimally invasive neuromodulation technique, in which one (or two) electrically conductive probes are placed percutaneously alongside or crossing a peripheral nerve and then stimulated for 25-30 min at high (100Hz) and low (2Hz) frequencies in a rapid alternating fashion. It is usually performed as a single-shot treatment, but can be repeated if required.

### METHODS:

In this study, we recruited 10 patients (7 women and 3 men; mean age 64 years) affected by severe chronic (>6 months duration) occipital neuralgia characterized by pain intensity values of 8/9 , as assessed by a numerical rating scale (NRS, and unresponsive to drug therapy. All patients reported transient variable improvement after local anaesthetic block of the greater occipital nerve. Exclusion criteria were local infections, demand-type cardiac pacemakers, psychiatric disorders and use of anticoagulants. In June 2013 all patients underwent single-shot PENS sessions during which a 21G 100mm probe was inserted percutaneously to cross the occipital nerve. Pain valuation by an NRS scale was performed before treatment (NRS T0), one month (NRS T1), three months (NRS T2) and six months after procedure (NRS T3, December 2013)

Name -Age- Sex	NRS T0	NRS T1	NRS T2	NRS T3
1) SA 53 y M	8	5	5	5
2) MA 61y F	9	7	7	7
3) FN 83 y F	8	3	3	3
4) NG 63 y F	8	3	3	3
5) RA 77 y F	8	3	3	3
6) TR 55 y F	8	3	3	0
7)LPM 70 y F	9	7	6	5
8) CS 50 y M	8	0	3	8
9) BV 80 y F	8	8	7	5
10) IC 48 y M	8	4	3	3



**CONCLUSIONS:** These preliminary short-term results suggest that PENS therapy can be an effective technique in the management of pain in patients with severe occipital neuralgia; furthermore, PENS, being less invasive, free of possible complications and less costly, might be considered as a valid alternative to PNT in the treatment of intractable occipital neuralgia. Larger studies with longer follow up duration are clearly needed to validate these findings and support the use of PENS in clinical practice.