

A Retrospective Review of Pain at End of Treatment Utilizing 60-day Peripheral Nerve Stimulation for Chronic Osteoarthritic Knee Pain in a Veteran Population

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Background

It has been estimated that 25% of all adults are affected by chronic knee pain. 60-day peripheral nerve stimulation is an opioid-sparing treatment option that has demonstrated significant and sustained pain relief in both clinical and real-world studies involving knee pain.

Details & Objectives



After IRB approval we reviewed 60 cases of osteoarthritic knee pain which were treated in our Richmond Veterans Affairs Medical Center pain clinic with ultrasound guided 60-day temporary PNS at various nerve

target combinations. The primary outcome measured was the percentage of subjects that achieved $\geq 50\%$ pain relief at 60-day end of therapy.



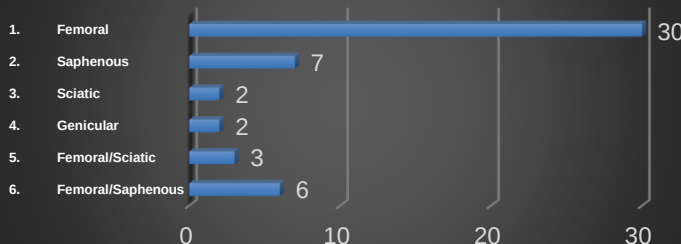
Participant Characteristics

Age (average in years)	61 (36-82)
Males	83% (50/60)
Females	17% (10/60)
Black or African American	57% (34/60)
White	40% (24/60)
American Indian or Alaska Native	1.69% (1/60)
Declined to Answer Race	1.6% (1/60)

Methods

The treatment combinations included: Leads powered by one external pulse generator (femoral, saphenous, sciatic, or genicular). Leads powered by two external pulse generators (femoral/sciatic and femoral/saphenous). All leads received sensory stimulation and no motor stimulation for 60 days of therapy. PNS Leads were removed 60 days after implantation.

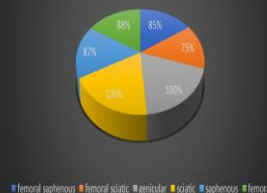
Successful Pain Relief 50% at EOT



Results

85% of our patient sample responded to 60-day PNS treatment with greater than 50% pain relief at end of treatment. The small sample of non-responders (9/60) exhibited 100% non-compliance with use of therapy resulting in very low hours (less than 10% expected hours) of use. Of note, our cohort had a larger number of single femoral leads and this led to selection bias with the small number of genicular and sciatic nerves being 100% success vs the femoral exhibiting 88% success.

Percentage of Subjects Achieving $\geq 50\%$ Pain Relief at EOT



femoral
saphenous

femoral
sciatic

85%

75%

6/7

3/4

Types of Lower Extremity 60 Day PNS



genicular	sciatic	saphenous	femoral	TOTAL
100%	100%	87%	88%	85%
2/2	2/2	7/8	30/34	51/60

Conclusion

85% of the 60 patients in our facility who received 60-day PNS had greater than 50% relief of knee pain throughout the 60-day treatment including the EOT..

During this period they did not use additional analgesics or other therapies for pain. This study is the largest retrospective review to date at a single center that we are aware of that evaluates osteoarthritic chronic knee pain outcomes retrospectively using the 60-day PNS. .

References

Goree Jhet al. [Randomized Placebo-Controlled Trial of 60-Day Percutaneous Peripheral Nerve Stimulation Treatment Indicates Relief of Persistent Postoperative Pain, and Improved Function After Knee Replacement](#). Neuromodulation: Technology at the Neural Interface, May 2024

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