Turkish Journal of Clinical Research

Turk J Clin Res. 2025;1(1):15-20
https://doi.org/10.63909/1453009

RESEARCH ARTICLE

Our neural therapy outcomes

Nöral terapi sonuçlarımız

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Abstract

Aim: To evaluate the clinical outcomes and patient satisfaction levels following neural therapy in individuals with chronic low back pain lasting more than five years.

Methods: This retrospective, single-center, observational study included 18 patients who presented to the Neurosurgery Outpatient Clinic with complaints of chronic low back pain. Subcutaneous neural therapy was administered using 2% prilocaine hydrochloride at 10 to 30 points identified by the patients as most painful. Visual Analog Scale (VAS) scores were recorded before the treatment, and at the first and sixth months post-treatment. Demographic and clinical data were extracted from hospital records.

Results: The mean age of the patients was 66.16±9.27 years. The average duration of chronic low back pain was 10.38±5.22 years. Pre-treatment VAS scores averaged 8.33±0.88, decreasing to 3.61±2.36 at the 1-month follow-up and rising slightly to 5.88±1.85 at 6 months. Four patients showed no improvement, while 14 patients (77%) experienced sustained pain reduction and reported satisfaction with the procedure.

Conclusion: Neural therapy appears to be a feasible and easily applicable option in the treatment of chronic low back pain, providing clinically meaningful symptom relief and high patient satisfaction up to six months. Further large-scale, prospective studies are required to validate these findings and to determine its effectiveness across diverse spinal pathologies.

Keywords: Neural therapy, chronic low back pain, visual analog scale, patient satisfaction.

Özet

Amaç: Beş yıldan uzun süredir bel ağrısı şikayeti bulunan hastalarda nöral terapi uygulamasının klinik sonuçlarını ve hasta memnuniyetini değerlendirmek.

Yöntemler: Bu retrospektif, tek merkezli, gözlemsel çalışmaya, kronik bel ağrısı nedeniyle Beyin Cerrahisi Polikliniği'ne başvuran 18 hasta dahil edildi. Hastaların en ağrılı olarak belirttiği 10 ila 30 noktaya %2 prilokain hidroklorür içeren subkutan nöral terapi uygulandı. Görsel Analog Skala (VAS) skorları tedavi öncesi, 1. ay ve 6. ay takiplerinde kaydedildi. Demografik ve klinik veriler hastane kayıtlarından elde edildi.

Bulgular: Çalışmaya dahil edilen hastaların ortalama yaşı 66,16±9,27 yıl olup, ortalama kronik bel ağrısı süresi 10,38±5,22 yıldı. Tedavi öncesi ortalama VAS skoru 8,33±0,88 iken, 1. ayda 3,61±2,36'ya düştü ve 6. ayda 5,88±1,85'e yükseldi. Dört hastada iyileşme gözlenmezken, 14 hasta (%77) ağrıda azalma bildirdi ve tedaviden memnun olduklarını ifade etti.

Sonuç: Nöral terapi, kronik bel ağrısı tedavisinde uygulanabilir ve pratik bir yöntem olup, altı aya kadar klinik olarak anlamlı semptom kontrolü ve yüksek hasta memnuniyeti sağlayabilir. Bulgularımızı doğrulamak ve yöntemin farklı omurga patolojilerindeki etkinliğini ortaya koymak amacıyla daha geniş örneklemli, prospektif çalışmalara ihtiyaç vardır.

Anahtar Kelimeler: Nöral terapi, kronik bel ağrısı, görsel analog skala, hasta memnuniyeti.

INTRODUCTION

A thorough understanding of the pathophysiological mechanisms underlying low back pain is essential for effective clinical management (1). Despite extensive research, the pathophysiological and anatomical foundations of low back pain remain incompletely understood by clinicians (2). Moreover, non-specific low back pain remains the most frequently observed subtype in clinical settings (2). Initial treatment strategies for low back pain typically involve physical therapy and rehabilitation interventions, patient education on proper spinal alignment, and the use of analgesic medications (3). Recent clinical guidelines recommend therapeutic exercise, nonsteroidal anti-inflammatory drugs (NSAIDs), spinal manipulation, and acupuncture for the management of chronic low back pain (4). However, discrepancies exist among guidelines regarding the use of acupuncture, electrotherapy, thermal modalities (heat or cold), and various pharmacological treatments (4). Patients with acute low back pain who fail to improve rapidly and whose symptoms persist beyond three

Corresponding Author: Abdullah Emre TACYILDIZ abdullahemretacyildiz@gmail.com
Cite as: Tacyıldız E, Sofuoglu OE, Akıncı C. Our neural therapy outcomes. Turk J Clin Res. 2025;1(1):15-20

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Received: 25 April 2025 | **Accepted:** 22 May 2025 | **Published:** 30 May 2025

Turk J Clin Res. 2025;1(1):15-20
https://doi.org/10.63909/1453009

months are at increased risk of developing chronic pain and long-term disability (1, 5).

Low back pain is not typically regarded as a well-defined or distinct clinical entity, but rather as a non-specific condition marked by intermittent and recurrent episodes that vary in duration and intensity (6). Cognitive-behavioral therapy, self-management approaches, and the application of the biopsychosocial model are strongly recommended in contemporary guidelines for the management of low back pain (4,7,8).

Neural therapy is among the modalities employed in the management of chronic low back pain, aiming to provide long-term pain relief through the administration of local anesthetics (9, 10). Peripheral nociceptive sensory neurons are considered key contributors to the widespread and intense pain associated with degenerative spinal conditions (11). Furthermore, the inflammatory response triggered by spinal degeneration has been reported to play a pivotal role in the pathogenesis of low back pain (12). Neural therapy has demonstrated promising outcomes in other pain-related disorders, such as shoulder pain and fibromyalgia (13,14).

In this study, we aim to report the clinical outcomes of neural therapy administered to patients with low back pain persisting for more than five years.

METHODS

Study Design

This study is a single-center, non-randomized, observational, descriptive, and retrospective analysis. It was conducted on approximately 22 patients who presented to the Neurosurgery Outpatient Clinic of Karabük Training and Research Hospital with complaints of chronic low back pain. Patients with long-standing symptoms were included in the study. Ethical approval was obtained from the Karabük University Ethics Committee (Reference No: 2025/2229; Date: April 16, 2025).

Data Collection

Patient data will be retrieved from both the hospital's electronic medical records and manually maintained patient files. Demographic information, including age, sex, and duration of symptoms, will be recorded. Visual Analog Scale (VAS) scores for low back pain will be assessed at three time points: prior to treatment, and at the first and sixth months following the intervention. Magnetic resonance imaging (MRI) findings and other radiological evaluations will be obtained from the hospital's digital archives.

Inclusion and Exclusion Criteria

Patients with continuous low back pain persisting for at least five years were included in the study. Individuals with acute or subacute low back pain were excluded, as the intervention was not intended for such cases. Patients presenting with acute radicular symptoms—such as extruded or sequestered disc herniation—or with underlying pathologies including spinal tumors were also excluded.

Details of Neural Therapy

Prior to the procedure, patients were thoroughly informed about the treatment, and written informed consent was obtained. Patients were asked to indicate the most painful areas on their lower back and dorsal region. After triple antiseptic cleansing with povidone-iodine, subcutaneous neural therapy was administered at 10 to 30 identified points. Prilocaine hydrochloride 2% was used as the local anesthetic agent (Figure 1).

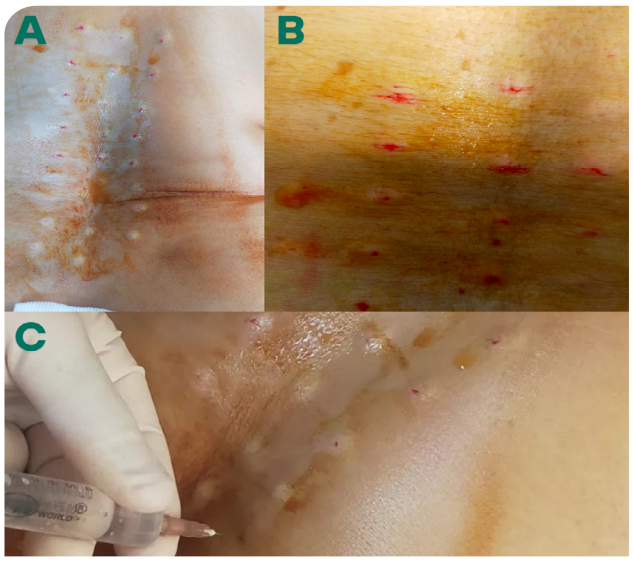

Figure 1. This figure illustrates representative clinical examples of patients treated with neural therapy

Turk J Clin Res. 2025;1(1):15-20
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Statistical Analysis

Descriptive statistics, including minimum, maximum, and mean values, will be used to present the results of this study. No inferential statistical analyses will be conducted, as the study is observational and descriptive in design.

RESULTS

The study included 18 patients, comprising 11 females and 7 males, with a mean age of 66.16±9.27 years. All participants reported severe low back pain as their primary complaint, while 16 patients also presented with concurrent leg pain. The mean duration of chronic low back pain was 10.38±5.22 years.

The mean pre-treatment Visual Analog Scale (VAS) score was 8.33±0.88. At the 1-month follow-up, the mean VAS score decreased to 3.61±2.36, indicating a marked improvement. By the 6-month follow-up, the mean VAS score was 5.88±1.85.

Four patients exhibited no improvement in VAS scores at the 1-month evaluation. In contrast, 14 patients showed a reduction in VAS scores at both the 1st and 6th months compared to baseline.

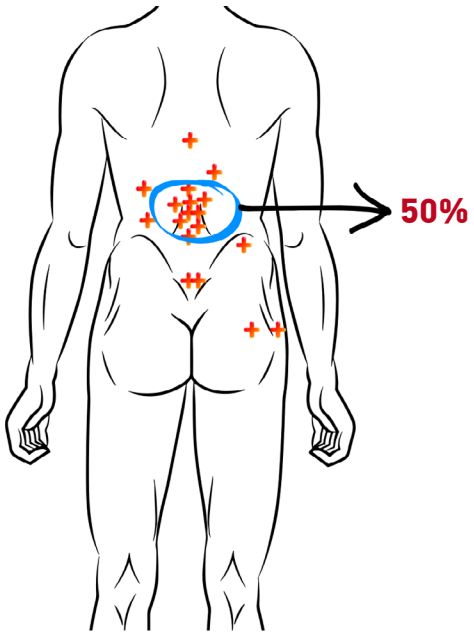

Figure 2. Figure 2 shows the specific anatomical sites selected for neural therapy application

The anatomical injection sites for neural therapy are illustrated in Figure 2. All 18 patients had lumbar degenerative spine pathology. Additionally, 5 patients presented with spondylolisthesis, 2 patients had spinal canal stenosis measuring less than a few millimeters, 1 patient had a pars defect (Figure 3), and 1 patient had osteoporotic vertebral fractures (Figure 4).

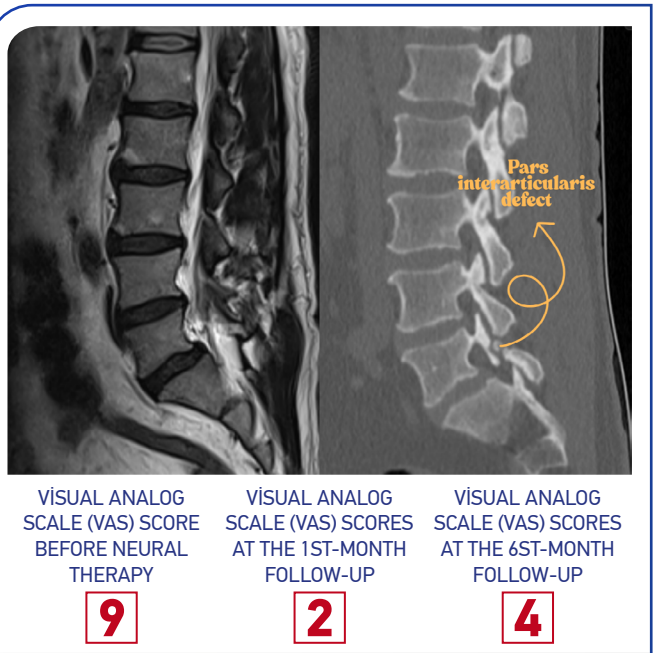

Figure 3. This figure presents pre- and post-treatment VAS scores in a patient diagnosed with a pars defect and chronic low back pain who underwent neural therapy

DISCUSSION

In our study, 14 patients reported a reduction in low back pain at the 6-month follow-up and expressed satisfaction with the neural therapy procedure. A substantial decrease in pain intensity was observed at the 1-month follow-up, with the mean VAS score dropping from 8.33±0.88 at baseline to 3.61±2.36. However, by the 6th month, pain scores demonstrated a tendency to increase, reaching a mean of 5.88±1.85.

Yılmaz et al. reported that neural therapy may be effective for up to six months in patients with chronic low back pain who exhibit inadequate functional recovery and significantly reduced quality of life due to poor pain control (15). Our findings are consistent with those of Yılmaz et al. In another study, Bakılan et al. compared

Turk J Clin Res. 2025;1(1):15-20
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VİSUAL ANALOG SCALE (VAS) SCORE BEFORE NEURAL THERAPY	VİSUAL ANALOG SCALE (VAS) SCORES AT THE 1ST-MONTH FOLLOW-UP	VİSUAL ANALOG SCALE (VAS) SCORES AT THE 6ST-MONTH FOLLOW-UP
8	1	2

Figure 4. This figure presents the pre- and post-treatment VAS scores of a patient with an osteoporotic vertebral fracture and chronic low back pain following neural therapy

patients receiving pharmacological treatment, physical therapy alone, and neural therapy alone for chronic low back pain. They concluded that neural therapy was superior in both pain reduction and patient satisfaction (16). Similarly, in our study, 14 patients (77%) reported satisfaction with the treatment.

Several studies have demonstrated the effectiveness of neural therapy even in cases of piriformis syndrome (17). Moreover, local anesthetics used in neural therapy have been reported to produce favorable long-term outcomes, even in patients unresponsive to conventional, evidence-based treatments (18).

Nociceptive stimuli can elicit various reflex responses via cutivisceral, viscerocutaneous, and viscerosomatic motor reflex pathways, primarily mediated by the sympathetic nervous system (19, 20). These responses may result in altered regional blood flow, increased skin turgor, localized hyperalgesia, dysfunction of organs linked to the corresponding metameric level, and elevated muscle tone. Such reflex responses emerge from the interplay between the somatic and autonomic nervous systems and are often secondary to underlying visceral pathologies (19, 20). Nociceptive afferent fibers converge in the dorsal horn of the spinal cord, where signals are further transmitted to the sympathetic nervous system, skeletal muscles, and the brain (18). These sympathetic–afferent interactions contribute to the initiation and perpetuation of a vicious cycle of pain (18, 21).

The sympathetic nervous system can initiate neurogenic inflammation by releasing proinflammatory neuropeptides, inducing vasodilation, and promoting plasma extravasation from its nerve terminals—processes that ultimately contribute to pain perception (22, 23). This inflammatory response reduces the activation threshold of nociceptors and may also activate previously "silent" nociceptors in the surrounding tissue. Consequently, peripheral sensitization develops, further perpetuating the pain–inflammation cycle (24). Egli et al. have proposed that local anesthetics may simultaneously modulate several components of this vicious cycle, including nociceptor activity, sympathetic outflow, circulatory disturbances, neurogenic inflammation, and muscle hypertonicity (18).

Both clinical studies (15-17) and mechanistic investigations (19-22) suggest that neural therapy may represent a viable alternative for pain management, particularly in cases of chronic low back pain. The findings of our study are in line with the existing literature, demonstrating effective pain control and a high level of patient satisfaction in 77% of participants.

This study has several limitations. Foremost among them is its retrospective design. The relatively small sample size also limits the generalizability of the findings. Patient satisfaction was assessed solely using the Visual Analog Scale (VAS); incorporating additional measures could have provided a more comprehensive evaluation of quality of life. We included a single case of vertebral compression fracture; however, we acknowledge that this is insufficient to draw meaningful conclusions regarding the efficacy of neural therapy in such cases. Similarly, only one patient with a pars defect was included, and no claims are made about the effectiveness of neural therapy in addressing symptoms related to this condition. Further prospective, non-randomized, and larger-scale clinical studies are warranted to better evaluate the therapeutic potential of neural therapy

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across various spinal pathologies.

CONCLUSION

We believe that neural therapy represents a feasible and easily applicable alternative for the management of chronic low back pain. In our study, clinically acceptable improvement was observed for up to six months, with a 77% patient satisfaction rate—an outcome that may be considered meaningful in the context of chronic pain management. However, further research is necessary to strengthen the current level of evidence. Specifically, prospective, double-blind, multicenter studies with larger patient cohorts are required to more definitively evaluate the efficacy of neural therapy.

Acknowledgement: None.

Ethical Approval: Ethical approval for this study was granted by the Karabük University Ethics Committee (Date: 16.04.2025; Decision No: 2025/2229).

Author Contributions: Idea/Concept: A.E.T.; Design: A.E.T.; Supervision: C.A.; Resources: O.E.S.; Materials: A.E.T.; Data Collection and/or Processing: C.A.; Analysis and/or Interpretation: A.E.T.; Literature Review: C.A.; Written: A.E.T.; Critical Reviews: O.E.S., C.A.

Conflict of Interest: The authors have no conflict of interest to declare.

Financial Disclosure: None.

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