▪ Headache Medicine 2026, Supplement ▪ p-ISSN 2178-7468, e-ISSN 2763-6178

Headache Medicine

ID: 21

Clinical improvement in HIT-6 and pain scores after cranial nerve blocks in patients with migraine treated at a referral headache center

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Introduction
Cranial nerve blocks (CNB) have been increasingly used as an adjunctive strategy in patients with migraine, particularly in those with prolonged attacks, partial response to conventional therapy, contraindications to acute medications, or refractory symptoms. The procedure commonly involves blockade of the greater and lesser occipital nerves and branches of the trigeminal nerve, including the supraorbital, supratrochlear, and auriculotemporal nerves.

Objective
To evaluate the clinical response to cranial nerve blocks in patients with migraine treated at the Headache Outpatient Clinic of Santa Casa de Misericórdia de São Paulo using the Headache Impact Test (HIT-6) and the Visual Analog Scale (VAS) before and after the procedure.

Methods
This was an open observational study including patients with migraine and partial symptom control treated at the Headache Outpatient Clinic of Santa Casa de Misericórdia de São Paulo between 2021–2022 and 2025–2026 who underwent cranial nerve blocks. Clinical response was evaluated through comparison of HIT-6 and VAS scores obtained before and one month after the procedure. Paired comparisons between pre- and post-procedure scores were performed using paired Student's t-tests, with 95% confidence intervals.

Results
Thirty-two patients were included. Most participants were female (87.5%), with a mean age of 50.9 years (range: 18–80). Regarding preventive treatment, 78.1% of patients were using at least one prophylactic medication, while combined preventive therapy was observed in 50%. The mean VAS score before the procedure was 8.93 (range: 7–10), decreasing to 5.27 (range: 2–9) after CNB. Paired analysis demonstrated a statistically significant reduction in VAS scores following the intervention (mean difference: −3.66±1.44; t(31)=−14.40; p<0.001; 95% CI: −4.18 to −3.14). The mean HIT-6 score before CNB was 64.88 (range: 48–78), decreasing to 54.66 (range: 36–76) after the intervention. This reduction was also statistically significant (mean difference: −10.22±7.50; t(31)=−7.71; p<0.001; 95% CI: −12.92 to −7.52). These findings demonstrated significant improvement in both pain intensity and headache-related disability after cranial nerve block treatment.

Conclusion
Cranial nerve blocks showed potential as a complementary therapeutic strategy to assist conventional migraine treatment, with significant reductions in pain intensity and headache-related functional impact measured by VAS and HIT-6 scores. Although this was an open study and therefore does not allow definitive conclusions regarding treatment efficacy, the findings corroborate previous studies suggesting a potential benefit of cranial nerve blocks in migraine management.

Keywords:
Migraine
Cranial nerve blocks
Migraine treatment

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