Repeated peripheral nerve blocks reduce cutaneus allodynia symptoms, headache-related disability, depression, and anxiety in chronic migraine

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INTRODUCTION

Cutaneous allodynia (CA) is the perception of pain generated by a non-noxious stimulus to the skin. Approximately 70 to 80% of patients with migraine experience CA during attacks. CA is associated with chronicity and higher levels of disability. Comorbid psychiatric symptoms are likely to increase the risk of chronification in migraine and to complicate the treatment. Furthermore, it has been reported that depression is associated with allodynia and high attack frequency in migraineurs. Interventional therapies targeting peripheral nerves are able to modulate nociceptive processing and neuroplastic mechanisms within trigeminocervical pathways involved in pain control and they could be useful in patients with migraine. Local anesthetics stabilize peripheral nociceptor sensitization by reducing local cytokines and regulating ion channels and current flows and inhibit the expression of sensitization of the central nervous system in the course of migraine. Up to date, there is a lack of evidence whether the combination of trigeminal nerve branch blocks and occipital nerve blocks is more effective than greater occipital nerve blocks (GON) alone, or if the injections should only be inserted to the localization of the migraine pain.

In this study, the effects of repeated trigeminal nerve branch and greater occipital nerve blocks on cutaneus allodynia, migraine-related disability, depression, and anxiety symptoms in chronic migraine were assessed.

METHODS

This study was undertaken between January 2018 and December 2018. Twenty patients with chronic migraine patients who failed adequate trials of at least 3 preventive drug classes were evaluated in our headache clinic during the study period diagnosed migraine based on the International Classification of Headache Disorders III-beta criteria.

The sociodemographic and clinical characteristics were recorded for all patients who had bilateral supraorbital nerve, auriculotemporal nerve, and GON blocks for six months monthly. A total of 10 mL of 2 lidocaine HCL was injected. Change in the Numeric Pain Rating Scale (NPRS), Allodynia Symptom Checklist (ASC), Beck Depressionn and Anxiety Inventory, and MIDAS were used to assess the response to blocks.
SPSS 23.0 was used as the statistical analysis program.

Table 1. Demographic and clinical data of patients with migraine

Sex (female:male)	19/1
Age (years) ±SD	46.25±9.92
Education	
None	1
Primary School	10
High School	7
University	2
Marital Status	
Single	9
Married	10
Divorced	1
Level of Income	
None	
Minimum Wage	2
More than Minimum Wage	12
	6
Headache duration (years) ±SD	22.80 ±10.49
Number of headache Attacks	21.10±5.07

RESULTS

The mean age of patients was 46.25±9.92, 95 % were female. The duration of migraine was 22.80 ±10.49 years and mean number of headaches days/month was 21.10±5.07. Table 1 demonstrates the demographic and clinical data of patients with migraine

The mean headache days reduced to 6.1±2.11 (p=0.012). For analysing mid term effect of injections on ASC, NPRS, depression, anxiety, and MIDAS scores, Anova with repeated measures test was used. These differences were noted to be statistically significant (p=0.000, p=0.000, p=0.013, p=0,001, p=0,000, respectively).

Medication over use headache and localization of migraine pain were not associated with ASC scores decline over time (p=0.461).

DISCUSSION

This study demonstrates that repeated occipital plus trigeminal branch nerve blocks with local anesthetics may be an effective option for management of chronic migraine, contribute to treatment of allodynia and prevent migraine chronification.

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