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Profile of endogenous pain modulation and functional disability in migraine: a comparative analysis between individuals with and without associated cervicalgia

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Introduction
Migraine is a primary headache disorder characterized by unilateral location, throbbing pain of moderate to severe intensity, exacerbated by routine physical activity, and associated with nausea and/or photophobia and phonophobia. Its pathophysiology is not yet fully elucidated, given the multifactorial complexity of the disorder. However, it has been strongly associated with musculoskeletal symptoms, mainly related to cervical pain, present in approximately 80% of this population. This coexistence of cervical pain in migraine is evaluated as a possibility of a higher degree of central sensitization and the existence of alterations in nociceptive processing in these individuals.

Objective
To investigate whether patients with chronic migraine and cervical pain show amplification of neural pain sensitization compared to a diagnosis of chronic migraine alone.

Methods
A comparative cross-sectional observational epidemiological study. Individuals of both sexes, aged 18 to 59 years, diagnosed with chronic migraine with or without associated neck pain were included. The following aspects of the patients were assessed during screening: intensity of neck pain at rest (11-point numerical scale), temporal summation test (algometer), conditioned pain modulation test (algometer), pressure pain threshold (algometer), and cervical disability (Cervical Disability Index).

Results
The sample consisted of 54 individuals distributed into two groups: migraine with neck pain and migraine without neck pain. No statistically significant differences were found between the groups with migraine with neck pain and without associated neck pain regarding temporal summation ($p<0.05$), inhibitory pain mechanisms ($p<0.05$), primary mechanical hyperalgesia ($p<0.05$), and self-reported neck disability ($p<0.05$).

Conclusion
It is concluded that the functioning of pain facilitation and inhibition pathways, as well as the level of cervical disability, do not show significant variations depending on the presence or absence of neck pain in individuals with migraine. These results reinforce the hypothesis that the suprasegmental dysfunction characteristic of migraine is the main determinant of alterations in somatosensory processing, independently of peripheral cervical nociceptive afferents.

Keywords:
Migraine
Neck pain
Sensitization
Trigeminal-cervical complex

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