



## Cervicogenic headache, incidence and differential diagnosis

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### Introduction

Cervicogenic headache is classified as a secondary headache by the International Headache Society (IHS). It is linked to cervical pathological changes, exhibiting a heterogeneous profile with prodromes. Its incidence has shown an increase following the SARS-CoV-2 pandemic, which may have been due to both social habit changes and pathological side effects.

### Objective

To elucidate and guide the medical community on the clinical presentation, diagnosis, and appropriate treatment, emphasizing underdiagnosis and differential diagnosis.

### Methods

Literature search in the databases of PubMed, Nature, Scielo, Wiley. Keywords used: cervicogenic headache, spanning from 1980 to 2022. Inclusion criteria comprised articles within this scope, exclusion criteria were articles unrelated to the topic or with outdated information.

### Results

1319 articles were found, of which 106 were eligible. After reading and analysis, 27 older articles proved relevant for this study. The etiology and pathophysiology of cervicogenic headache, as suggested by clinical imaging studies, involve referred pain from C2-C3 nerve roots via the trigeminal nerve afferent territory. However, most cases are related to C3 fibers due to disturbances in the C2-C3 vertebral junction, triggered by muscle trigger points, inflammatory cartilage diseases, trauma, home office work, and SARS-CoV-2 infection. Two diverging lines exist regarding the presence of prodromes and organic symptoms in the clinical profile and for diagnosis. The International Study Group of Cervicogenic Headache (CHISG) asserts that cervicogenic headache consists of unilateral pain of varying intensity, worsening and radiating to the frontal, supraorbital, temporal, parietal, and occipital regions after neck movement and improper head positioning. It may involve pain starting in the frontal region and extending through the temporal, parietal, and occipital regions ipsilaterally, respecting dermatomes up to the cervical region. They also highlight the presence of prodromes such as throbbing and stabbing neck and occipital pain ipsilaterally. Accompanying symptoms include hypoesthesia, dysphagia, xerostomia, and stiffness in the passive movement of the upper limbs and neck. IHS does not recognize prodromes, differentiating cervicogenic headache from diagnoses such as tension headache, occipital neuralgia, and migraine. Consequently, there is a decrease in sensitivity and an increase in specificity, leading to up to 50% of cases being mistakenly treated as other pathologies. For treatment, a double-blind study demonstrated the efficacy of pregabalin at a dose of 450 mg/day in reducing the number of days with pain. Gabapentin at a dose of 600 mg/day shows positive effects with a rapid and sustained response (Level of Evidence C). Anesthetic blockade of pain with corticosteroids is effective but presents an average recurrence in 23.5 days. Non-pharmacological therapy is accepted as a treatment for cervicogenic headache. A Brazilian study compared three groups using corticosteroid blockade associated with physiotherapy techniques or not, demonstrating a significantly greater reduction in pain with Maitland's physiotherapy. Other studies were inconclusive regarding the use and effectiveness of techniques such as nerve excision or radio-frequency neurotomy. Additionally, implant neuromodulation and Coblation showed a partial response in pain reduction. It can be inferred that a combination of therapies forms the basis of treatment with better responses.

### Conclusion

Cervicogenic headache presents various manifestations, with lifestyle changes impacting its incidence, necessitating medical training for identification. Confounding factors should be ruled out, and regarding treatment, the use of medications should be combined with physiotherapeutic methods to enhance positive results. Finally, cervicogenic headache should be included in the diagnosis of primary headaches, avoiding underdiagnosis and inadequate treatment.

**Keywords:** Cefaleia; Cervicogênica; SARS-CoV-2.