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

Headache Medicine

ID: 362

Headache chronification in adolescents associated with medication overuse: a systematic literature review

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Introduction
Headache is one of the most prevalent neurological complaints in childhood, with rates reaching up to 28% among adolescents from 15 to 17 years. The transition from episodic migraine to chronic is frequently driven by Medication Overuse Headache (MOH), defined by ICHD-3 criteria by the consumption of triptans or opioids ≥10 days/month or non-opioid analgesics ≥15 days/month during more than three months. This condition remains severely underdiagnosed, given that 45.7% of patients do not receive a specific diagnosis in their initial consultation, which favors suboptimal acute treatment and the progression of functional disability.

Objective
Investigate the correlation between the frequency of analgesic use and the headache chronification profile in adolescents, evaluating the functional impact and the efficacy of preventive interventions.

Methods
This is a systematic review according to PRISMA guidelines. The search covered the PubMed, Cochrane Library and Web of Science databases (2016-2026, 10-19 years), with the descriptors "Chronic Migraine", "Adolescents" and "Analgesics", analyzing the variables: frequency and type of analgesics (including opioids and barbiturates), headache chronification profile, functional disability (PedMIDAS score) and efficacy of preventive interventions. The statistical analysis was performed via Software R, considering the significance level of $p<0.05$.

Results
220 articles were identified, with 19 eligible, of which 7 were included. The results indicate that Medication Overuse Headache (MOH) is present in up to 40% of adolescents with chronic headache, with a higher prevalence in Tension-Type Headache (42%) compared to Migraine (23%). Epidemiologically, a female predominance of 73% is revealed ($p=0.033$) and an average symptom duration of 25 months ($p=0.04$) in cases of overuse, a significantly longer time than in patients without this condition. Although the formal diagnosis of migraine increases by 4.71 times the chances of a correct prescription (CI 95%: 4.17–5.33; $p<0.001$), only 16.1% of patients receive evidence-based medicine (EBM) treatment in initial care. Isolated analgesic suspension benefits only 55% of patients, while the introduction of pharmacological prophylaxis reverses the 'non-responder' status to acute medication in 65.4% of cases after three months ($p < 0.05$). Additionally, this improvement occurs independently of psychiatric comorbidities, which reach 69% of the sample ($p = 0.05$). It is also highlighted that the use of barbiturates for only 4 days per month is already sufficient to trigger the risk of evolution to the chronification profile.

Conclusion
The excessive use of analgesics is a potent engine of chronification, aggravated by the failure in early diagnosis and low initial adherence to EBM. It is concluded that effective management requires the introduction of multimodal preventive therapies are fundamental to reduce functional disability and restore therapeutic response in previously resistant patients.

Keywords:
Chronic migraine
Analgesics
Medication overuse headache
Adolescents

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