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

Headache Medicine

ID: 301

Efficacy and safety of onabotulinumtoxinA and anti-CGRP therapies for migraine prevention in children and adolescents: a systematic review

Sofia Melo Peixoto, Isabella Ferreira de Faria Lima, Halley Ferraro Oliveira

Tiradentes University, Aracaju, Sergipe, Brazil

Sofia Melo Peixoto
smelopeixoto@gmail.com

Introduction

Migraine is a common neurologic disorder in childhood and adolescence, with an estimated prevalence of 11%, significantly impairing school performance and psychological well-being. Until recently, no preventive therapy was formally approved for pediatric migraine, as landmark trials were conducted exclusively in adults. Two preventive approaches have gained particular attention in the literature: onabotulinumtoxinA (BoNT-A), which inhibits nociception in peripheral trigeminal neurons, and anti-CGRP monoclonal antibodies that selectively target calcitonin gene–related peptide (CGRP). Both are approved in adults for preventive treatment of episodic and chronic migraine.

Objective

To evaluate the efficacy and safety of onabotulinumtoxinA and anti-CGRP therapies for migraine prevention in the pediatric population.

Methods

A systematic review of randomized clinical trials and observational studies was conducted in accordance with de Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, structured according to the PICO strategy, considering: population (pediatric patients with migraine), intervention (BoNT-A and anti-CGRP therapies), comparison (no preventive treatment), and outcomes (efficacy and safety outcomes). Furthermore, a literature search was performed in the PubMed/MEDLINE, Lilacs/BVS and Cochrane Library database through the combination of the following descriptors: "child" AND "migraine" AND "onabotulinumtoxinA", resulting in 78 articles, and also "child" AND "migraine" AND "monoclonal antibodies", resulting in 81 articles identified. However, eligibility criteria included studies whose content was pertinent to the research theme, published within the last five years, and available in full text. A total of 10 articles were selected for analysis.

Results

In accordance with the studies conducted, both therapeutic approaches demonstrated satisfactory results in pediatric patients with migraine. BoNT-A injections are effective and well tolerated for relief of migraine headaches, with an average 5-point decrease on the 10-point Visual Analogue Scale (VAS) for pain score. They also led to a significant reduction in monthly headache days (−17.5 days/month). Only 3% of the patients presented minimal and rapidly resolved side effects, such as temporary pain, mild erythema, and slight dizziness. Moreover, anti-CGRP therapies, such as fremanezumab and eptinezumab, decreased by 21.6 points in the PedMIDAS total score. Mild reactions at the injection site are the most common side effects. No substantial differences in the safety profile of the therapies were identified between children and adolescents. Additionally, combined anti-CGRP therapy and BoNT-A was associated with reduced migraine duration and intensity in 91.3% of patients, with minimal side effects (4.3%).

Conclusion

BoNT-A and anti-CGRP are effective, safe, and well tolerated in pediatric migraine, supporting their potential role as second-line preventive options in this population.

Keywords:
Migraine Disorders
OnabotulinumtoxinA
Pediatrics
Anti-CGRP

© Copyright 2025