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EDITORIAL COMMENTARY

# Lack of Benefit of Propranolol Prophylaxis in Children with Migraine without Aura

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Migraine is a disorder with a significant impact on quality of life. Despite being a prevalent condition in children, very few trials have reported the efficacy of any agent, and detecting a signal in terms of reduced morbidity remains elusive. Since the frequency of episodes play an important role in the chronification of migraine, prophylactic therapy in the pediatric age group may be considered to reduce the frequency of episodes [1]. However, it is not clear which patients should be considered for prophylaxis and which agents are most effective. Though propranolol was one of the first drugs to be considered for migraine prophylaxis in children, studies on its role have yielded conflicting results [2, 3].

In this issue of the journal, Keerthana and colleagues report the results of a randomized placebo-controlled trial on the effect of oral propranolol prophylaxis (1–3 mg/kg/d) on headache frequency in children aged 6–12 y with newly diagnosed migraine without aura [4]. In this small trial of 23 patients, authors report inconclusive results for outcomes such as headache frequency, Pediatric Migraine Disability Assessment Scale (PedMIDAS) score for disability, and severity of headaches by visual analog scale over three months period. Authors report a reduction within groups in the number of attacks for both intervention and control arms. Methodological strengths include adequate random sequence generation, concealment of allocation, and blinding using a placebo. Though results were not presented using an intention-to-treat analysis, the frequency of episodes and total patients are few and unlikely to affect the conclusions. For all outcomes, there was no statistically significant difference in the arms, though it is probable that the trial was not powered enough to detect a difference. The uncertainty in the estimates may be better expressed in the form of confidence intervals to reflect the range of plausible values consistent with this data.

This trial, while too small to yield a definitive conclusion on the efficacy of propranolol in migraine, adds to the body of evidence that may guide further investigations in this direction. With respect to investigating the role of any pharmacological agent for migraine prophylaxis in this age group, ascertainment of outcome may pose a challenge, as would the recording of adverse events. Future trials, adequately powered and methodologically robust, may yield further evidence on the role of propranolol in this setting. Evidence of the effect on other patient-important outcomes, such as quality of life, needs to be studied in order to better delineate the role of propranolol.

## Declarations

**Conflict of Interest** None.

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