Editorial

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Pediatric Migraine in Korea: New Opportunities in the Era of Mechanism-Based Prevention

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The approval of fremanezumab as a treatment for episodic pediatric migraine in South Korea in May 2026 marked a significant milestone in headache care. Together with the publication of the Korean Headache Society's evidence-based guideline on migraine prevention, this approval provides an opportunity to reassess how pediatric migraine is understood and managed in Korea.[1] For decades, children and adolescents with migraine have generally been treated with medications originally developed for epilepsy, hypertension, or psychiatric disorders.[1] The introduction of calcitonin gene-related peptide (CGRP)-targeted therapy into pediatric practice therefore represents more than the approval of a new drug; it represents the availability of mechanism-based prevention for young patients living with migraine.[1]

Recent articles published in *Headache and Pain Research* have emphasized why pediatric migraine warrants greater clinical attention. Kwon[2] highlighted the role of central sensitization and the developing brain in pediatric headache disorders. Kim and Schwedt[3] described the often-overlooked interictal burden that persists between migraine attacks. Moon and Chung[4] discussed the potential consequences of medication underuse and headache chronification. Most recently, Lee[5] argued that pediatric headache in Korea should be recognized not merely as an episodic complaint but as a chronic neurological condition with meaningful functional consequences. Together, these reports indicate that pediatric migraine is common, disabling, and frequently underestimated.[2-5]

The magnitude of this burden is often underappreciated. Contemporary population-based studies have estimated the prevalence of chronic migraine at approximately 0.6% in children and up to 1.8% in adolescents, although estimates vary by study population, diagnostic method, and geographic region.[6] These figures place chronic migraine within a prevalence range comparable to that of active epilepsy in pediatric populations.[7] However, the difference in research attention is striking: epilepsy has benefited from decades of epidemiological studies, disease registries, and therapeutic innovation, whereas pediatric migraine has historically received far less attention despite causing substantial disability during critical developmental years.[6,7]

The burden of pediatric migraine extends beyond headache days alone. Children with migraine experience increased school absenteeism, impaired academic performance, reduced participation in social activities, and diminished quality of life.[5] Many also continue to experience fatigue, cognitive dysfunction, sensory hypersensitivity, and anticipatory anxiety between attacks.[3] In highly competitive educational environments such as Korea, these effects may influence both current functioning and future opportunities.[3,5] This substantial disease burden raises the question of whether earlier and more targeted preventive approaches might improve long-term outcomes.

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Despite this burden, pediatric migraine remains relatively understudied in Korea. Compared with adult migraine, pediatric migraine has been examined in fewer epidemiological studies and longitudinal cohorts, and real-world evidence on long-term treatment outcomes remains limited.[5] As a result, clinicians often rely on evidence generated outside Korea or extrapolate findings from adult populations.[5] The Korean Headache Society guideline appropriately summarizes the available evidence while also underscoring the need for further pediatric-specific research.[1]

Against this background, the approval of fremanezumab is particularly meaningful. Unlike traditional preventive medications, which were originally developed for other neurological, cardiovascular, or psychiatric disorders and later found to have preventive effects in migraine, CGRP-targeted therapies are the first class of preventive treatments developed directly from advances in modern migraine neurobiology.[8] Their development reflects a shift from empiric treatment toward biologically informed intervention.[8]

At the same time, implementing CGRP-targeted therapy in Korea will require attention to specialist availability, regional disparities in healthcare resources, reimbursement policies, and limited clinical experience in children. Ongoing education and real-world evidence will therefore be important. Importantly, CGRP-targeted therapies are not intended as first-line treatment for all pediatric patients; rather, they are best reserved for those with substantial migraine burden, significant disability, or inadequate response to conventional preventive therapies. Careful patient selection remains essential.

This development also raises an important question: Could early mechanism-based intervention influence the long-term course of migraine? At present, no evidence shows that CGRP-targeted therapies modify the natural history of migraine, and such conclusions would be premature.[8] Migraine remains a complex disorder shaped by genetic susceptibility, environmental influences, sleep, stress, hormonal factors, and developmental neurobiology.[2,8] Pediatric migraine also frequently coexists with anxiety, depression, and sleep disturbances, all of which may independently influence long-term outcomes and treatment response. Future studies should determine whether the effectiveness of CGRP-targeted therapies differs across these clinically important subgroups.

As Kwon discussed, childhood and adolescence are periods of substantial neuroplasticity and ongoing maturation of neural networks involved in pain processing, sensory integration, and emotional regulation.[2] Repeated migraine attacks during these developmental periods may contribute to heightened responsiveness of pain-processing systems and persistent neurological dysfunction.[2] Although this hypothesis remains preliminary and requires rigorous investigation, effective prevention could plausibly reduce cumulative migraine burden and limit recurrent activation of sensitized neural pathways during critical stages of neurodevelopment.[2,8] Whether such effects ultimately alter the disease trajectory remains unknown, but this possibility warrants careful study.[2,4]

The approval of fremanezumab should therefore prompt further clinical and research efforts rather than be viewed as a completed advance. It provides clinicians with a mechanism-specific therapeutic tool while also exposing major gaps in current knowledge.[1] Korea now needs prospective pediatric headache registries, long-term observational studies, and real-world investigations examining educational outcomes, psychosocial functioning, treatment persistence, and disease progression.[5] Such efforts will help determine whether early intervention only improves symptoms or can also meaningfully influence the lifelong burden of migraine.[5]

Whether fremanezumab will ultimately change the future of migraine remains uncertain. What is clear, however, is that pediatric migraine can no longer be regarded as an afterthought in headache medicine.[2-5] As mechanism-specific therapies continue to emerge and pediatric research expands, there is growing reason for optimism about the future care of children and adolescents living with migraine.[1,8]

AVAILABILITY OF DATA AND MATERIAL

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CONFLICT OF INTEREST

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