



ORIGINAL ARTICLE

Allergic rhinitis and associated risk of migraine among children: a nationwide population-based cohort study

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Background: Increased frequency of migraine was reported in adults with allergic rhinitis (AR). Although migraine is less common in children than in adults, it can begin in early childhood and persist into adulthood. We conducted this population-based cohort study to investigate the incidence and subsequent risk of migraine in children with AR.

Methods: From 2000 to 2007, 461,850 children with recently diagnosed AR and 460,718 non-AR controls were included in the study. By the end of 2008, incidences of migraine in both cohorts, the AR to non-AR cohort hazard ratios (HRs), and confidence intervals (CIs) were measured.

Results: The incidence of migraine during the study period was 3.2-fold higher in the AR cohort (95% CI, 2.97 to 3.46) than in the non-AR cohort (11.4 vs 3.49 per 10000 person-years). The risk was greater for boys than for girls, and for children aged <6 years. The HR for migraine in children with AR was 1.44 (95% CI, 1.31 to 1.58) for those with

≤2 annual AR-related medical visits, whereas, 14.8 (95% CI, 13.6 to 16.2) for those with >4 visits ($p < 0.0001$, the trend test). The risk of migraine development in the AR cohort was highest within the first year after AR diagnosis (HR 4.89; 95% CI, 3.98 to 6.00). Children with AR were more likely to have migraine without aura than migraine with aura.

Conclusion: Children with AR had a higher incidence and subsequent risk of migraine. Physicians should be more aware of migraine in children with AR who complain of headache. © 2015 ARS-AAOA, LLC.

Key Words:

allergic rhinitis; migraine; children; cohort study; hazard ratios; confidence intervals

How to Cite This Article

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Allergic rhinitis (AR) is a common allergic disease among children, affecting 14.3% to 61.9% of the pediatric population.¹⁻³ AR frequently occurs with other comorbidities, such as asthma, middle ear effusions, sinusitis, lymphoid hypertrophy with obstructive sleep apnea, and headache.⁴⁻⁶ Children with concurrent symptoms of AR and headache are commonly diagnosed with sinus headaches in clinical settings.^{7,8} However, when the headache occurs recurrently, migraine is the most probable differential diagnosis.⁹ Migraine has a great effect on a child's quality of life, including increased instances of absence from school, learning disabilities, decreased interactions with family members, and decreased socialization with peers.^{9,10} In addition, migraine may persist into adulthood.¹¹ Therefore, identifying the triggering factors and underlying mechanisms of migraine is important to prevent and treat the disease. Migraine is a

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