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Leukotriene receptor antagonists and risk of neuropsychiatric events in children, adolescents and young adults: a self-controlled case series

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Shareable abstract (@ERSpublications)
Risk of neuropsychiatric events associated with leukotriene receptor antagonist use differs between risk periods and age groups. Risk is increased 4–14 days after initiation of the medication in adolescents and young adults, but not in children. https://bit.ly/3kcKFvE

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Abstract

Background Leukotriene receptor antagonists (LTRAs) are widely used for asthma and allergic rhinitis (AR), but concerns about the risk of neuropsychiatric events (NPEs) have been raised since the first Drug Safety Communication by the US Food and Drug Administration in 2008. This study evaluates the association between LTRA use and NPEs in children, adolescents and young adults with asthma or AR.

Methods A self-controlled case series study was conducted using the Korean National Health Insurance Service claims database from two 3-year observation periods (observation period 1 (Obs1): 2005–2007; observation period 2 (Obs2): 2016–2018). Asthma or AR patients aged 3–30 years who were prescribed LTRAs and diagnosed with NPEs were included. The incidence rate ratios (IRRs) for the exposed period and risk periods (1–3, 4–7, 8–14, 15–30, 31–90 and >90 days from initiation of LTRA) compared with unexposed periods were calculated using conditional Poisson regression. Subgroup analysis according to age group, type of NPEs and indication of LTRA was performed.

Results Among 17 001 included patients, the risk of NPEs increased in Obs2 (IRR 1.11, 95% CI 1.00–1.22), but did not increase in Obs1. Risk was increased during risk periods 4–7 days (IRR 2.36, 95% CI 1.99–2.76) and 8–14 days (IRR 1.78, 95% CI 1.46–2.15) after initiation of LTRA, particularly in adolescents (IRR 1.28, 95% CI 1.05–1.55) and young adults (IRR 1.14, 95% CI 1.02–1.28), while risk was decreased in children (3–11 years). Risk was not increased for any single type of NPE. AR patients were at increased risk (IRR 1.19, 95% CI 1.01–1.39), but not those with asthma.

Conclusions Overall, risk of NPEs with LTRA use differed between risk periods and subgroups. Physicians should prescribe LTRAs according to indications and inform patients about possible NPEs.