Increased Incident of Sleep Apnea in Patients with Allergic Rhinitis

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Objective: Allergic rhinitis (AR) is characterized by repeated rhinorrhea and nasal obstruction. The narrowed nasal airway might increase the risk of sleep apnea (SA). Although the association between AR and SA has been discussed in some studies, most of them were relatively small and focused on children. Because the association between AR and SA has not been evaluated in a large-scale study, particularly in the Asian adult population, we performed a nationwide population-base cohort study using Taiwan National Health Insurance (NHI) Research Database.

Methods: From the Longitudinal Health Insurance Database 2005, we identified adult patients with a diagnosis of AR in at least three outpatient claims or one inpatient claim, and excluded those having the diagnosis of SA prior to the AR diagnosis. The date of first AR diagnosis was defined as the index date for each patient. Each AR patient was matched to 2 randomly-selected, age- and sex-matched control subjects who never had AR diagnosis. The incidence of SA was compared with Chi-square test. The cumulative SA incidence was calculated and compared with Kaplan-Meier method and log-rank test. Multivariable Cox proportional hazards regression analyses were also performed to assess the effect of AR on incident SA.

Results: A total of 137,358 AR patients and 274,716 control subjects were enrolled. The incidence of SA was significantly higher in the AR patients than in the control subjects (1.43% vs. 0.27%, $p<0.0001$). The cumulative SA incidence was also significantly higher in the AR patients ($p<0.0001$). After adjusting for age, sex, income level, residency, and comorbidities, AR remained a significant risk factor for incident SA (hazard ratio [95% confidence interval]: 4.655 [4.270 – 5.074], $p<0.0001$).

Conclusion: This large-scale population-based study revealed an increased SA incidence in Asian adult patients of AR, suggesting AR as an important risk factor for SA. Physicians need to pay more attention to the presence of SA while caring for AR patients.

中文題目：過敏性鼻炎病患有較高的睡眠呼吸中止症發生率

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