

The Taiwanese Adult Patients with Chronic Obstructive Pulmonary Disease Had Increased Sleep Apnea Risk

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Objective: Chronic obstructive pulmonary disease (COPD) is a chronic airway inflammatory disease characterized by airflow limitation. Whether COPD is associated with sleep apnea (SA) have been discussed in the literature, but their association remained inconclusive. We performed a nationwide population-base cohort study using Taiwan National Health Insurance (NHI) Research Database (NHIRD) to determine the association between COPD and SA in Taiwan.

Methods: Using Taiwan National Health Insurance (NHI) database of one million representative subjects randomly sampled from individuals enrolled in the NHI system in 2005, we enrolled adult patients having COPD and excluded those having a diagnosis of SA prior to COPD. The dates of their first COPD diagnosis were defined as their index dates. Each COPD patient was matched to 5 randomly selected, age- and sex-matched control subjects without any COPD diagnosis. The control subjects were assigned index dates as their corresponding COPD patients, and were ensured having no SA diagnosis prior to their index dates.

Results: Totally, 35,095 COPD patients were matched to 175,475 control subjects. The incidence rate of SA was significantly higher in COPD patients as compared with the corresponding control subjects (0.5 vs. 1.0 per 1000 patient-year; adjusted incidence rate ratio = 1.5 [95% CI: 1.5-1.6], $p < 0.0001$). The cumulative incidence of SA was also significantly higher in the COPD patients ($p < 0.0001$). In multivariable Cox regression analysis, COPD remained a significant risk factor for the development of SA after adjusting for age, sex, residency, income level and comorbidities (hazard ratio = 1.5 [95%CI: 1.3-1.8], $p < 0.0001$). In COPD patients, risk factors for incident SA included male, living in Northern Taiwan, higher income, heart disease, and peptic ulcer disease.

Conclusion: We found that the COPD patients had higher risk of SA. Therefore, for patients with COPD, clinicians need to pay attention to the risk of incident SA, especially for male patients living in Northern Taiwan with higher income, heart disease, and peptic ulcer disease

中文題目：台灣成年肺阻塞病人有較高的睡眠呼吸中止症風險

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