**Sleep apnea and risk of vertigo – A nationwide population-based cohort study**

**睡眠呼吸中止症與罹患眩暈的風險 – 以全國性人口為基礎之世代研究**

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**Objective:** The objective of the study was to investigate the risk of vertigo among patients with sleep apnea.

**Methods:** We performed a retrospective, nationwide cohort study using population-based data from the Taiwan National Health Insurance Research Database (NHIRD). This study enrolled a total of 5,025 patients who had newly diagnosed sleep apnea from the Longitudinal Health Insurance Database 2000, a nationally representative database of 1 million random patients, along with 20,100 non-sleep apnea controls who were matched at a 1: 4 proportion for age, sex ratio, and socioeconomic status between January 1, 1997 and December 31, 2012. Sleep apnea was defined according to the International Classification of Diseases, 9th Revision (Clinical Modification) codes–780.51, 780.53, and 780.57. Primary outcomes were occurrence of vertigo coded as 386. Patients were followed until death or the end of the study period (December 31, 2013). Death was defined as withdrawal of the patient from the National Health Insurance program.

**Results:** Patients with sleep apnea had a significantly higher cumulative incidence of vertigo compared with controls (*P* < 0.001). The modified Cox proportional hazard model showed that sleep apnea was significantly associated with higher incidence of vertigo (adjusted hazard ratio, 1.70; 95% confidence interval, 1.49–1.95; *P* < 0.001). Using sensitivity analysis and subgroup analysis to adjust confounders including stroke, hypertension, diabetes mellitus and head concussion, it demonstrated sleep apnea to be an independent risk factor of vertigo.

**Conclusions:** This is the first nationwide population-based cohort study to investigate the association between sleep apnea and vertigo. The findings strongly support sleep apnea as an independent risk factor of vertigo. The information provided here may help physicians to retain alertness of potential vertigo following sleep apnea.