

中文題目：快速動眼期的阻塞性睡眠呼吸中止症與第二型糖尿病盛行率的相關性

英文題目：Obstructive sleep apnea during REM sleep and type II diabetic mellitus

作者：林均叡¹，陳蕙君²，林孟志²，蘇茂昌²，秦建弘²，陳永哲^{2*}

服務單位：¹高雄長庚紀念醫院內科部，²高雄長庚紀念醫院內科部呼吸胸腔科

Background: Obstructive sleep apnea (OSA) is associated with poor glycemic control in type 2 diabetes. We aim to quantify the independent association of OSA during rapid eye movement (REM) sleep and prevalent diabetes mellitus (DM).

Methods: In this cross-sectional study, 1149 sleep-disordered breathing patients who underwent all-night polysomnography in Kaohsiung Chang Gung Memorial Hospital were analyzed. Logistic regression analysis was performed to determine the separate effects of OSA during REM and/or non-REM sleep (apnea-hypopnea index [AHI]) and several other polysomnography parameters on the prevalence of DM after adjustment for several known risk factors.

Results: Quartile of REM-AHI was independently associated with DM ($P = 0.014$) (Q2: OR, 1.224; 95% CI, 0.653 to 2.292; Q3: OR, 1.582; 95% CI, 0.875 to 2.861; Q4: OR, 2.227; 95% CI, 1.234 to 4.019 relative to Q1), whereas quartile of non-REM-AHI was not ($P = 0.074$). Similarly, categorical REM-AHI ($p=0.048$) ($5 \leq \text{AHI} < 15$: OR, 1.837; 95% CI, 0.652 to 5.177; $15 \leq \text{AHI} < 30$: OR, 0.927; 95% CI, 0.319 to 2.8697; $30 \leq \text{AHI} < 50$: OR, 2.053; 95% CI, 0.922 to 4.573; $\text{AHI} \geq 50$: OR, 2.489; 95% CI, 1.19-5.207 relative to $\text{AHI} < 5$) was independently associated with DM, whereas categorical non-REM-AHI was not ($P = 0.816$). Additionally, age, body mass index, and continuous REM AHI were independently associated with the prevalence of DM in OSA patients. Receiver operating characteristic curves showed that the risk of DM was well-captured by REM AHI at a cut-off value of 32.85 events/hour (AUC=0.59, 95% CI 0.54-0.641, $p=0.001$) with a sensitivity of 80.4% and a specificity of 70.4%.

Conclusions: Our findings indicate that REM OSA is independently associated with type II DM. This is clinically relevant because treatment of OSA is often limited to the first half of the sleep period leaving most of REM sleep untreated.