

The Association between Gastroesophageal Reflux Disease and Sleep Structure

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Objective: To assess the association between gastroesophageal reflux disease (GERD) and sleep structure.

Methods: The enrolled subjects were received Dx-pH oropharyngeal probe monitoring from about 6 PM to 6 AM of the next day and performed overnight polysomnography (PSG) in the period. PH value was embedded into PSG with time synchronization. The event of GERD was defined as the nadir of PH drops below to 5.5 and 10% of the baseline. Spearman correlated to GERD events was analysis among apnea-hypopnea index (AHI), arousal index, body mass index (BMI) and the difference of PH in REM (Diff_REM) and NREM sleep stage (Diff_NREM). Path analysis was conducted with significantly correlated factors.

Results: A total of 23 subjects with male of 17 (73.9%) were enrolled in the present study. Median (Q1, Q3) for age, AHI, BMI, arousal index, PH_min in REM and NREM were 50 (39, 53), 3.3 (3, 11.3), 23.9 (21.5, 26.7), 4.3 (3.1, 7.3), 6.1 (5.7, 6.4) and 5.8 (5.3, 6.2), respectively. Results showed that GERD events were significantly ($p < 0.05$) correlated to AHI ($r = 0.419$), BMI ($r = 0.674$) and Diff_NREM ($r = 0.628$). Path analysis showed that Diff_NREM ($p = 0.048$) and BMI ($p = 0.006$) were the direct and indirect effect, respectively, for GERD events.

Conclusion: The higher BMI contributed to the more difference of PH drops in NREM and those were of the indirect and direct effect, respectively, for GERD events. However, AHI and arousal showed no effect for GERD with significance. It was suggested that the BMI could be the feature for GERD as clinical inspection.

中文題目：胃食道逆流疾病與睡眠結構之關係

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