Prevalence of QT Prolongation in Patients with Obstructive Sleep Apnea

Cheraka Takrutkaeo, Wanwarang Wongcharoen, Theerakorn Theerakittikul

1Department of Internal Medicine, Faculty of Medicine, Chiang Mai University, Chiang Mai 50200, Thailand

Background: Obstructive sleep apnea (OSA) has been shown to increase risk of sudden cardiac death. The prolonged corrected QT (QTc) interval is associated with increased risk of ventricular arrhythmias. However, the prevalence of prolonged QTc interval in patients with OSA has not been clearly elucidated.

Objective: This study aimed to examine the prevalence of QTc prolongation and the association between QTc interval and severity of OSA. We used Bazette’s formula to correct QT interval. QTc prolongation was defined as QTc interval ≥ 450 ms in male and ≥ 460 ms in female. Severity of OSA was categorized to non-severe OSA (apnea-hypopnea index, AHI 5-30) and severe OSA (AHI>30).

Methods: This is a cross-sectional study which enrolled patients diagnosed with OSA from polysomnography from January to December 2017. Demographics, cardiovascular risk factors, severity of OSA, and 12-lead ECG were collected in all patients.

Results: A total of 210 OSA patients were included in the study (male 54.3%, mean age 59.9±1.4 years). Baseline characteristics were not different between those with and without QTc prolongation. Majority of patients (93%) had severe OSA. The prevalence of QTc prolongation was 11.9% which was not different between severe and non-severe OSA groups (11.8% vs 13.3%, P=0.695). Mean AHI in those with and without QTc prolongation were 81.1±35.6 and 77.7±31.9, P=0.405, respectively.

Conclusion: The prevalence of prolonged QTc interval in patients with OSA is not negligible. Screening for QTc interval prolongation should be encouraged irrespective of severity of OSA.

Keywords: QT prolongation, Arrhythmia, OSA, AHI