Risk Factors of Hypertension in Young Thai Sleep Apnea Adults

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Background: Obstructive sleep apnea (OSA) has been linked to hypertension. Few studies have focused on young adults, especially in Thailand.

Objective: To study the association between sleep apnea and hypertension, as well as risk factors and predictor for evaluating risk for severe OSA.

Methods: Cross sectional analysis of polysomnography data and clinical data including sleep questionnaires, body mass index (BMI), upper airway anatomy assessments and blood pressure parameters in 102 participants with confirmed OSA. Exclusion was other causes of secondary hypertension. Independent t test, χ², multivariate analysis, Pearson correlation, linear and binary logistic regression models were used for comparison.

Result: The mean age of participants was 34 years; 78.4% were male. The incidence and severity of sleep apnea were significantly higher in the hypertensive, obesity and over neck circumference groups than the control subjects. Those with hypertension had an OR of 3.7 times of having severe sleep apnea than patients without hypertension (95% confidence interval 1.08-12.90, p-value =0.037). Subjects with obesity had an OR of 6.8 times of having comorbid sleep apnea than patients without hypertension (95% confidence interval 1.41-33.4, p-value = 0.017). Those with over neck circumference had an OR of 7.1 times of having comorbid sleep apnea than patients without hypertension (95% confidence interval 1.86-26.98, p-value = 0.004). Participants with systolic hypertension had an OR of 4.3 times of having severe sleep apnea than patients without hypertension (95% confidence interval 1.24-15.01, p-value = 0.021). Those with Diastolic hypertension had an OR of 6.0 times of having severe sleep apnea than patients without hypertension (95% confidence interval 1.51-23.80, p-value = 0.011). However, we could not provide predictive score & equation to predict severe OSA due to low study population.

Conclusion: Obesity and over neck circumference are risk factors of hypertension in young Thai adults with sleep apnea. The association is more likely with the increasing severity of sleep apnea. Screening for sleep apnea in young adults with hypertension and patients with obesity and over neck circumference without hypertension vice versa to benefit patient outcomes may need further investigation.

Keywords: Obstructive sleep apnea, Hypertension, Young adult