

The impact of body weight status on blood pressure in obstructive sleep apnea children underwent adenotonsillectomy

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Objectives: Obstructive sleep apnea (OSA) is a common disorder, affecting to 2 to 3% of children. In children with OSA, baseline body weight status can predict either residual OSA or blood pressure (BP) after adenotonsillectomy (AT). This study aimed to access the impacts of BMI on post-AT BP.

Method: This study is a retrospective case series with chart review in a tertiary referral center. From 2012 to 2013, a total of 72 OSA children underwent AT were included. We recorded preoperative and postoperative body mass index (BMI) z-score and full-night polysomnography (PSG). We measured blood pressure 3 times before PSG (nocturnal BP) in a sleep laboratory.

Results: The mean age of study participants (53 boys and 19 girls) was 7.6 ± 3.0 years. The mean follow-up period was 1.0 ± 0.6 years. Postoperatively, the mean AHI significantly reduced from 18.4 ± 19.1 to 4.0 ± 9.9 ($P < 0.001$, paired Student *t* test). None of BMI z-score, systolic BP, and diastolic BP changed significantly ($P = 0.47$, 0.61 , and 0.21 , respectively). The proportion of systolic hypertension did not change significantly (21% vs. 15%, $P = 0.45$) whereas the proportion of diastolic hypertension significantly reduced from 24% to 10% ($P = 0.03$). Spearman correlations revealed that preoperative obesity was significantly associated with preoperative systolic hypertension ($P = 0.03$) whereas postoperative obesity was significantly associated with postoperative systolic BP ($P = 0.03$) and postoperative systolic BP ($P = 0.04$). Using logistic regression models, preoperative obesity (odds ratio = 3.5, 95% CI = 1.1–11.4) independently predicted preoperative systolic hypertension; preoperative systolic hypertension (odds ratio = 4.3, 95% CI = 1.1–16.7) independently predicted postoperative systolic hypertension; preoperative systolic hypertension (odds ratio = 6.5, 95% CI = 1.3–33.5) independently predicted postoperative systolic hypertension.

Conclusion: Despite bodyweight status contributes modestly to hypertension among

the children undergoing AT for OSA, residual hypertension is not uncommon and needs further management.

中文題目：體重狀態對接受腺樣體扁桃腺切除術治療阻塞性睡眠呼吸中止症兒童的血壓影響

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