

Comparison of the effects of different antihypertensive drugs in patients with obstructive sleep apnea and hypertension following CPAP therapy

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Rationale: Hypertension is prevalent among patients with obstructive sleep apnea (OSA). Among antihypertensive drugs, whether angiotensin II receptor blockers (ARB) or long-acting calcium channel blockers (CCB) would be more effective remains to be elucidated in patients with OSA whose hypertension is not well controlled after continuous

positive airway pressure (CPAP) therapy.

Methods: We recruited 26 patients with OSA and hypertension that remained poorly controlled (defined as systolic blood pressure >130 mmHg or diastolic blood pressure >80 mmHg) after optimal CPAP therapy. They received olmesartan (ARB) 20 mg per day or azelnidipine (CCB) 16 mg per day for 3 months in a randomized, open-label fashion, and monitored their blood pressure and pulse rate using a home blood pressure monitor.

Results: Although both olmesartan (n=13) and azelnidipine (n=13) lowered systolic and diastolic blood pressure in the morning (-8.7 ± 12.0 (systolic)/ -6.6 ± 8.6 (diastolic) mmHg and -9.4 ± 12.0 / -5.4 ± 7.3 mmHg, respectively) and in the evening (-7.3 ± 10.9 / -5.2 ± 7.0 mmHg and -8.4 ± 8.3 / -4.1 ± 7.2 mmHg, respectively) after 3 months, significant differences were not found between the two types of drugs. However, with azelnidipine, the pulse rate was significantly reduced in comparison with administration of olmesartan both in the morning (-5.7 ± 5.5 /min vs. 0.5 ± 4.1 /min, $p=0.0025$) and evening (-4.5 ± 3.8 /min vs. -1.1 ± 4.7 /min, $p=0.049$).

Conclusions Both olmesartan and azelnidipine had similar beneficial effects in lowering blood pressure in patients with OSA and hypertension not controlled well even after CPAP therapy. However, the decrease in pulse rate was significantly greater with the latter drug.