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BLOOD PRESSURE-LOWERING EFFECT OF CPAP IN PATIENTS WITH RESISTANT HYPERTENSION AND OBSTRUCTIVE SLEEP APNEA: PRELIMINARY RESULTS OF A RANDOMIZED CONTROLLED TRIAL

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Background: Recognition and treatment of secondary causes of hypertension among patients with resistant hypertension may help to control blood pressure and reduce cardiovascular risk. Obstructive sleep apnea (OSA) is the most common condition associated with resistant hypertension. It is unknown if continuous positive airway pressure (CPAP), the main treatment of OSA, improve blood pressure (BP) control in these patients.

Objectives: To assess the effect of CPAP on 24 hour ambulatory BP monitoring values in patients with truly resistant hypertension and OSA.

Methods: This is a double blind, randomised, placebo controlled trial of 46 consecutive patients with resistant hypertension, defined as uncontrolled BP despite the concurrent use of 3 or more antihypertensive agents, including a diuretic, with adherence to treatment and without white phenomenon. All participants should have a diagnosis of OSA, defined by AHI $\geq$ 15 in a portable monitoring sleep exam. Patients were assigned to therapeutic CPAP (n=22) or placebo CPAP (n = 22) for two months. The main outcome was changes in 24 hour ambulatory blood pressure monitoring values from baseline to two months of therapeutic CPAP or placebo CPAP.

Results: Most patients were men (58%); with a mean age of 59.3 ± 7,8 years, a BMI of 29.9 ±4.4 and AHI of 27 ±13.9. Characteristics of participants were similar at baseline. Compared with placebo and analyzed by intention to treat, the mean 24 hour blood pressure monitoring measures are shown in table 1.

Conclusions: The results of this ongoing clinical trial show that there is a trend for BP control with the use of CPAP in patients with resistant hypertension.

Table 1: Adjusted diferences between BP change according to the treatment assigned

Pressure	Group	Baseline	Follow up	Difference Between Groups (CI 95%), Adjusted*	P
SBP 24h	CPAP(22)	151.0 ± 19.0	140.9 ± 20.4	-7.5	0.15
	Placebo(22)	146.2 ± 18.0	144.6 ± 24.1		
DBP 24h	CPAP (22)	89.2 ± 13.1	83.2 ± 14.1	-4.6	0.10
	Placebo(22)	88.6 ± 13.1	87.0 ± 17.1		
Daytime SBP	CPAP(22)	154.9 ±	144.7 ± 22.2	-6.8	0.21
	Placebo(22)	21.3 148.9 ± 19.5	147.0 ± 22.4		
Daytime DBP	CPAP(22)	92.4 ± 14.6	86.3 ± 15.7	-5.5	0.07
	Placebo(22)	90.6 ± 14.7	89.2 ± 16.1		
Night time SBP	CPAP(22)	142.2 ± 16.4	132.0 ± 19.4	-6.8	0.22
	Placebo(22)	138.1 ± 12.4	136.3 ± 21.3		
Night time DBP	CPAP(22)	82.3 ± 10.3	76.2 ± 12.8	-4.2	0.28
	Placebo(22)	81.9 ± 10.9	79.9 ± 16.1		

* ANCOVA adjusted for correspondent baseline BP and time used CPAP or Placebo CPAP.

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