

G-CP-3

Plasma Renin and Aldosterone in Patients with Hypertension before Treatment

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Background: Response to different antihypertensive drugs is affected by the status of the renin-angiotensin system (RAS), so we studied the renin and aldosterone levels in hypertensive patients.

Methods: 28 newly-diagnosed untreated hypertensive patients (15 men, 13 women; age [mean \pm SD] 45 ± 13 years, range 24-73; blood pressure $141 \pm 13/95 \pm 8$ mmHg) were studied. None had hypokalaemia, renal artery stenosis, heart failure or other oedematous conditions. Patients were on their usual diet, which contained 186 ± 58 mmolNa/day and 48 ± 15 mmolK/day. Venous blood was taken according to a strict protocol after prolonged rest in a supine position. Plasma renin activity (PRA) and aldosterone (ALDO) were measured. These were repeated after 3 months in 15 patients to assess reliability. The reference ranges in our laboratory are 0.68-1.36 ng/mL/hr for PRA and 28-444 pmol/L for ALDO.

Results: Mean PRA was 1.07 ± 0.82 ng/mL/hr. 12, 5 and 11 patients (43%, 18% and 39%) had a PRA below, within and above the reference range respectively. PRA was not related to gender and the decrease with age is small ($r = -0.29$, $p = 0.14$). Mean plasma ALDO was 186 ± 97 pmol/L. The ALDO in all patients were within the reference range. Plasma ALDO was not related to gender but was negatively related to age ($r = -0.55$, $p = 0.003$). Repeated measurements of PRA and ALDO were correlated (PRA $r = 0.66$, $p = 0.008$; ALDO $r = 0.47$, $p = 0.05$).

Conclusions: Chinese hypertensive patients are heterogeneous in terms of their renin status and there was a trend towards lesser activation of the RAS in older hypertensive patients. Inhibitors of the RAS may be less effective in such patients but more effective in the young.

G-CP-4

Non-Pharmacological Treatment of Hypertension

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Background: Non-pharmacological treatment is the preferred initial step in the management of mild hypertension. We compared its efficacy with drug treatment.

Methods: Thirty-six patients (M:F, 18:18; age 45 ± 12 yrs) with untreated mild essential hypertension were randomised after a placebo run-in period to drug treatment (with hydrochlorothiazide 25 mg daily [$n = 12$] or metoprolol 100 mg daily [$n = 8$]) or non-pharmacological treatment (lifestyle modification including a low-fat, low-salt, high fibre diet, weight control, smoking cessation, moderating alcohol intake and regular exercise) for 6 months. Additional drugs were allowed after 12 weeks if the blood pressure was not controlled. Left ventricular mass index (LVMI) was determined by echocardiography.

Results: In the non-pharmacological group, there was a significant decrease in sodium intake (43 ± 14 mmol/day) and body fat ($1.5 \pm 0.7\%$), but the decrease in body mass (0.9 ± 0.4 Kg) was small.

	N	Diastolic pressure		Systolic pressure		LVMI	
		baseline	final	baseline	final	baseline	final
non-pharmacological	16	96 ± 2	92 ± 2	141 ± 4	136 ± 4	127 ± 8	119 ± 6
pharmacological	20	95 ± 1	$83 \pm 2^*$	138 ± 3	$122 \pm 3^*$	132 ± 8	124 ± 7

* $P < 0.05$

Conclusion: Non-pharmacological treatment reduces blood pressure slightly, but to a lesser extent than antihypertensive drugs. It can therefore be used in patients with very mild hypertension. In patients with more severe hypertension, non-pharmacological treatment should be implemented in conjunction with antihypertensive medications.