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 ± SD] 45 ± 13 years, range 24-73; blood pressure 141± 13/95± 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± 15mmolK/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 25mg 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 ± 0.7%), but the decrease in body mass (0.9 ± 0.4 Kg) was small.

<table>
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<tr>
<th></th>
<th>N</th>
<th>Diastolic pressure baseline</th>
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<th>Systolic pressure baseline</th>
<th>final</th>
<th>LVMI baseline</th>
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<tbody>
<tr>
<td>non-pharmacological</td>
<td>16</td>
<td>96 ± 2</td>
<td>92 ± 2</td>
<td>141 ± 4</td>
<td>136 ± 4</td>
<td>127 ± 8</td>
<td>119 ± 6</td>
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<tr>
<td>pharmacological</td>
<td>20</td>
<td>95 ± 1</td>
<td>83 ± 2</td>
<td>138 ± 3</td>
<td>122 ± 3</td>
<td>132 ± 8</td>
<td>124 ± 7</td>
</tr>
</tbody>
</table>

*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.