C-CP-1

Increased Homocysteine Levels in Patients with Ischaemic Heart Disease and Hypertension

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Introduction: Homocysteine (HCY) is increasingly recognized as an important risk factor for cardiovascular disease. We sought to determine if this risk factor is relevant in the Chinese who have a relatively low prevalence of ischaemic heart disease (IHD).

Method: 262 Hong Kong Chinese subjects (61 patients with IHD, 101 patients without IHD but had hypertension and 100 healthy volunteers) were studied with their consent. Venous blood was taken for the measurement of plasma HCY by fluorescence polarization immunoassay.

Results: Plasma HCY was 12.1 ± 0.9 μgmol/L in patients with IHD, which was markedly higher than in patients with hypertension (9.9 ± 0.4 μgmol/L, $p < 0.001$) and healthy volunteers (7.4 ± 0.2 μgmol/L, $p < 0.001$). There was no correlation between plasma HCY and diabetes ($r = 0.05$, NS) or hypercholesterolaemia ($r = 0.08$, NS), confirming its independence from these other classical cardiovascular risk factors.

Conclusions: High plasma HCY is strongly related to IHD in the Chinese as much as in Caucasians. Hypertensive patients have intermediate levels of HCY. This may reflect an unhealthy diet or a decline in renal function in hypertensive subjects. As plasma HCY can be modified by diet and vitamin supplements, correcting this risk factor is a promising strategy of reducing the risk of IHD in the population.

C-CP-2

Plasma Renin Activity and Aldosterone Level in Patients with Essential Hypertension

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Introduction: 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.

Method: 77 newly-diagnosed untreated hypertensive patients (40 men, 37 women; age [mean ± S.D.] 46 ± 11 years, range 24-73; blood pressure 142 ± 14 / 94 ± 8 mmHg) were studied. None had hypokalaemia, renal artery stenosis, heart failure or other oedematous conditions. Patients were on their usual diet, which contained 187 ± 73 mmol Na/day and 50 ± 23 mmol K/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 1.08 ± 1.03 ng/mL/hr. 49%, 20% and 32% patients had a PRA below, within and above the reference range respectively. PRA was not related to gender and the decrease with age was small ($r = -0.25$, $p = 0.03$). Mean plasma ALDO was 182 ± 104 pmol/L. The ALDO in 2 patients were above the reference range but normalised on repeat measurement. Plasma ALDO was not related to gender but was negatively related to age ($r = -0.35$, $p = 0.002$). Repeated measurements of PRA and ALDO were correlated (PRA $r = 0.66$, $p = 0.008$; ALDO $r = 0.47$, $p = 0.05$).

Conclusion: 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.