C-E-4

Effects of Angiotensin II Receptor Antagonist on Endothelial Vasomotor Function and Urinary Albumin Excretion in Type 2 Diabetic Patients with Microalbuminuria

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Background: Microalbuminuria is associated with dysfunction of the vascular endothelium in patients with diabetes mellitus. The objective of this study was to determine whether treatment with losartan at a dose sufficient to lower urinary albumin excretion was accompanied by an improvement in endothelial function in type 2 diabetic patients with microalbuminuria.

Methods: Endothelial function was measured in 80 type 2 diabetic patients with microalbuminuria and 68 non-diabetic controls using high resolution vascular ultrasound. The diabetic patients were randomized to receive either losartan 50 mg daily or placebo in a 6-month double-blind study. Urinary albumin excretion and endothelial function were assessed at baseline, 3 and 6 months.

Results: Both endothelium-dependent ($p<0.01$) and independent vasodilation ($p<0.01$) were significantly impaired in diabetic patients compared to the non-diabetic controls. At baseline, the losartan and placebo-treated groups were comparable in their clinical characteristics. Blood pressure did not change significantly in either groups throughout the study. Urinary mean albumin excretion rate (MAER) decreased in the losartan-treated group ($p<0.01$) whereas an increase was observed in the placebo group ($p<0.05$). At 6 months, the losartan-treated group had significantly lower MAER than the placebo-treated group [54.5 (58.3) μg/min vs 78.5 (100.5), $p<0.05$; median (interquartile range)]. No significant differences were found in endothelium-dependent or independent vasodilation.

Conclusions: Angiotensin II receptor antagonist exerts differential effects on urinary albumin excretion, arterial pressure and endothelial function. Treatment with low dose losartan is sufficient to reduce microalbuminuria without alteration in endothelial function and systemic blood pressure.

C-E-5

Obesity in Relation to the Prevalence and Incidence of Hypertension in Southern Chinese

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Introduction: Association between hypertension and obesity is well documented. Both cross-sectional and prospective studies among Caucasians have demonstrated that increases in weight are associated with increases in blood pressure. Whether such relationship also holds true for other ethnic groups is not well established. This study investigated the relationship between obesity and hypertension in a population of Hong Kong Chinese with a lower prevalence of obesity (BMI ≥30 kg/m^2) [5.6% (95% CI 4.4-6.8%) in men; 7.7% (95% CI 6.3-9.1%) in women], using data from the 1995-96 Hong Kong Cardiovascular Risk Factor Prevalence Study.

Method: Baseline demographic, anthropometric, and biochemical parameters were stratified according to categories of BMI in a community-based population survey of 2772 Chinese, aged 25-74 years. Of these, 644 non-diabetic subjects were re-studied after 2 years.

Results: At baseline, increasing BMI was associated with increasing prevalences of hypertension (SBP ≥140 or DBP ≥90 mmHg or on treatment) ($p<0.001$; cross tabulation analysis). Multiple logistic regression analysis showed that age ($p<0.0001$), body mass index (BMI) ($p<0.0001$) and Homeostasis Model of Assessment (HOMA) IR (estimate of insulin resistance) ($p<0.01$) were significant determinants of hypertension at baseline. Among the 473 normotensive subjects at baseline, age, systolic blood pressure and BMI were significant independent predictors of hypertension at 2 years.

Conclusion: Both the prevalence and 2-year cumulative incidence of hypertension are closely related to obesity in this group of Southern Chinese.