CORRELATION OF RENAL RESISTIVE INDEX, TUMOUR NECROSIS \(\alpha\) AND INTERLEUKIN 10 WITH HYPERTENSIVE RENAL DAMAGE

doi:10.1136/heartjnl-2012-302920a.173

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Objectives To investigate the changes of renal resistive index (RRI) and the serum levels of necrosis \(\alpha\) (TNF-\(\alpha\)) and interleukin 10 (IL-10) in patients with hypertensive renal damage, whereby to explore the correlation of RRI, TNF-\(\alpha\) and IL-10 with the hypertensive renal damage.

Methods Seventy three patients with primary hypertension were divided into two groups according to their urinary albumin excretion rate (UAER): normal albuminuric hypertensive group (n=37), hypertensive renal damage group (n=36). RRI was measured using Doppler ultrasonography, serum TNF-\(\alpha\) and IL-10 using radioimmune assay. Thirty normotensive healthy persons were selected as normotensive control group.

Results RRI and TNF-\(\alpha\) were significantly higher and IL-10 significantly lower in patients with essential hypertension than those in normotensive control group \(p<0.5\), and in patients with hypertension, those with renal damage had higher RRI and TNF-\(\alpha\) and a lower IL-10 than those without \(p<0.5\), with a statistically significant difference among groups \(p<0.5\). RRI, TNF-\(\alpha\) and IL-10 were found to have correlations with UAER \((r=0.801, p<0.01; r=0.703, p<0.01; r=-0.613, p<0.01)\), but no correlation with the level of blood pressure, and RRI positively correlated with TNF-\(\alpha\) \((r=0.609, p<0.001)\), negatively with IL-10 \((r=-0.533, p<0.01)\).

Conclusions RRI is remarkably increased in patients with hypertensive renal damage, whereby can be used as a parameter, together with UAER, in evaluating hypertensive renal damage. TNF-\(\alpha\) is increased and IL-10 decreased significantly in patients with hypertensive renal damage, indicating that the imbalanced cytokine network may play a role in the pathological mechanisms of hypertensive renal damage.