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CORRELATION OF RENAL RESISTIVE INDEX, TUMOUR NECROSIS α AND INTERLEUKIN 10 WITH HYPERTENSIVE RENAL DAMAGE

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Objectives To investigate the changes of renal resistive index (RRI) and the serum levels of necrosis α (TNF- α) and interleukin 10 (IL-10) in patients with hypertensive renal damage, whereby to explore the correlation of RRI, TNF- α 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 buminuric hypertensive group (n=37), hypertensive renal damage group (n=36). RRI was measured using Doppler ultrasonography, serum TNF- α and IL-10 using radioimmune assay. Thirty normotensive healthy persons were selected as normotensive control group.

Results RRI and TNF- α 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- α and a lower IL-10 than those without ($p<0.5$), with a statistically significant difference among groups ($p<0.5$). RRI, TNF- α 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- α ($r=0.609$, $p<0.001$), 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- α 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.