HYPERTENSION. CLINICAL

SP111 RENAL FUNCTIONAL RESERVE AND RENAL HEMODYNAMICS IN HYPERTENSIVE PATIENTS
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Introduction and Aims: The renal functional reserve (RFR) is the ability of the kidneys to increase renal plasma flow and glomerular filtration rate (GFR) in response to protein intake. It is not known what relation between RFR and kidney Doppler parameters. We aimed to study the relation between the RFR and resistive index (RRI) in hypertensive patients with normal kidney function.

Methods: Twenty-four hypertensive subjects with nephropathy (HTN-n, n=10) and without nephropathy (HTN, n=14) and 11 healthy subjects were included in the study. Baseline GFR (GFR1) and after intake of egg protein 1 mg/kg of body weight were determined (GFR2). RFR was calculated as: (GFR2-GFR1)/GFR1 х 100%. Doppler sonography, blood pressure (BP), body mass index (BMI), and GFR by CKD-EPI formula were recorded.

Results: HTN and HTN-n groups had impaired levels of RFR compared with controls (p<0.05), significantly decreased value of flow velocity parameters (Vmax, Vmin) and increased RRI compared with controls. There was significant negative correlation of RFR with blood pressure levels (sBP, r=-0.435, p=0.009; dBP, r=-0.504, p=0.002), RRI (r=-0.456, p=0.008) and positive correlation with Vmax and Vmin (r=0.556, p=0.001 and r=0.643, respectively, p<0.001). Logistic regression showed that independent predictors of combined low responded (<5%) and non-responded (<0%) RFR were Vmax (p=0.011) and RRI (p=0.013).

SP111 Independent predictors of combined low (<5%) and non-responded (<0%) RFR

Variables in step 4 B S.E. Wald OR 95% CI P value
Vmax (+1mm/sec) -0.085 0.034 6.461 0.918 0.860-0.981 0.011
RRI (+0.1) 0.806 0.326 6.113 2.239 1.182-4.244 0.013

Logistic regression analysis with backward stepwise (Conditional method). Variables entered on step 1: sBP, dBP, Vmax and Vmin. Model was finished at step 4.

Conclusions: RFR is lower in hypertensive patients despite near-normal level of kidney function and is related to particular level of blood pressure. RRI and Vmax were independent predictors of low and non-respondent RFR.

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