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THE CORRELATION BETWEEN RENAL FUNCTION AND ARTERIAL ELASTICITY INDICES IN ESSENTIAL HYPERTENSIVE PATIENTS

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Objective To study the correlation between renal function (GFR and mAlb) and arterial elasticity indices (baPWV, cfPWV, C1, C2 and ABI) in hypertensive patients.

Methods One hundred and forty subjects (38 normotensive subjects (NS group) and 102 essential hypertensive patients (EH group)) were enrolled. baPWV, cfPWV and ABI were measured by BP-203RPE II (VP-1000) device, and C1, C2 were measured by CVProfilor DO-2020 device. Glomerular filtration rate (GFR) and microalbuminuria (mAlb) were used as the indexes of renal function.

Results (1) baPWV, cfPWV and ABI were significantly higher in EH group than that in NS group. C1, C2 and GFR were significantly lower in EH group than that in NS group. (2) baPWV and cfPWV increased progressively with decreasing GFR ($p < 0.05$), but C1, C2 and ABI had insignificantly change with decreasing GFR. With increasing mAlb, no significant difference was found in all indexes of arterial elasticity function. (3) There was a significant and negative correlation between PWV and GFR. baPWV showed the best correlation with GFR ($r = -0.405$,

$p < 0.01$). C2 correlated positively with GFR ($p < 0.05$). No correlation was found between mAlb and all indexes of arterial elasticity function. Adjusting for age and blood pressure, even significant association between all indices of arterial elasticity and GFR disappeared.

Conclusions The association between arterial stiffness and renal function in essential hypertensive patients was largely associated with their associated risk factors, such as age and blood pressure.