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THE RELATION OF SERUM HIGH-SENSITIVE C-REACTIVE PROTEIN TO RISK FACTORS AND TARGET-ORGAN DAMAGE IN HYPERTENSIVE PATIENTS

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Objectives To provide a theoretical basis for evaluating the severity and prognosis of hypertension, we explore the relation of high-sensitive c-reactive protein (hs-CRP) to risk factors and target organ damage in hypertensive patients.

Methods Serum hs-CRP concentration of 216 hypertensive cases and 36 healthy subjects were tested. They were divided into different groups according to the associated diseases, the number of involved target organ and the difference of involved target organ. Hs-CRP and other variables such as TC, TG, LDL-C, BUN, Cr, FPG, LVMI, SBP and DBP were compared. The relativity between variables such as TC, TG, LDL-C, BUN, Cr, FPG, LVMI, SBP and DBP and hs-CRP was analysed by using of linear correlation analysis and multiple linear regression analysis.

Results Hypertensive patients had significantly higher of hs-CRP concentration (1.99 ± 0.34) mg/l than healthy subjects (1.1 ± 0.26) mg/l. The hs-CRP levels in hypertensive patients complicated with CHD group [(2.39 ± 0.24) mg/l] were higher than those complicated with diabetes mellitus (2.1 ± 0.18) mg/l than those merely hypertension (1.85 ± 0.30) mg/l. Correlation analysis showed hs-CRP levels had a positive correlation with the number of damaged target-organ. Following damaged target-organs increased, hs-CRP levels also gradually increased. The correlation coefficient was 0.747 ($p < 0.01$). Hs-CRP in left ventricular hypertrophy group (1.96 ± 0.15) mg/l was significantly higher than carotid atherosclerosis (1.79 ± 0.18) mg/l and renal injury group [(1.81 ± 0.17) mg/l], and carotid atherosclerosis and renal injury group was higher than retinopathy group [(1.65 ± 0.28) mg/l] ($p < 0.01$). Hs-CRP was positively correlated with age, SBP, DBP, FPG, TG, TC, LDL-C, BUN, Cr and LVMI, and negatively correlated with HDL-C. Stepwise regression analysis showed that the dominated factors of hs-CRP concentrations levels were left ventricular mass index, HDL-C and age. The Regression equation was: $y = 1.276 + 0.007a - 0.397b + 0.007c$, y representative of logarithmic after transformation of hs-CRP, a representative of left ventricular mass index, b representative of HDL-C, c representative of the age.

Conclusions Hs-CRP levels of hypertensive patients were significantly higher than healthy subjects. The more number of involved target organ, the higher serum hs-CRP levels were. Patients with different involved target organ had different inflammatory degree, which hypertensive patients with LVH had the highest hs-CRP

levels while retinopathy group had the lowest. Hs-CRP was positively correlated with age, SBP, DBP, FPG, TG, TC, LDL-C, BUN, Cr and LVMI, and negatively correlated with HDL-C. Stepwise regression analysis showed that the dominated factors for hs-CRP levels were LVMI, HDL-C and age.