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THE EXPRESSION AND SIGNIFICANCE OF ADIPONECTIN AND IGF-1 IN PATIENTS WITH CHRONIC HEART FAILURE

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Objectives To observe the expression of adiponectin and insulin–like growth factor-1 (IGF-1) and to explore the relationship between the two hormones and the severity and clinic significance in patients with chronic heart failure (CHF).

Methods 77 patients with chronic heart failure were divided into four groups (Grade I, n=19; Grade II, n=13; Grade III, n=22; Grade IV, n=23) according to New York Association functional class (NYHA class) and 19 patients without CHF were used as control group. The concentrations of plasma brain natriuretic peptide (BNP) and serum fasting insulin (FINS) were measured by Microparticle Enzyme Immunoassay (MEIA) and IGF-1 and adiponectin by Enzyme linked Immunosorbent assay (ELISA) and parameters of lipids or glucose metabolism at baseline.

Results Compared with the control group, Levels of adiponectin were significantly increased in the study with CHF ((12.11±5.21) vs (6.62±2.32) mg/l, $p<0.01$). Serum adiponectin levels were significantly increased according to the severity of NYHA functional class in the patients with CHF; The log-transformed values of serum adiponectin levels correlated positively with the log-transformed values of plasma BNP levels ($r=0.459$, $p<0.001$). Serum concentration of IGF-1 were lower in patients with CHF than those in control group (150.2±31.1 vs 94.5±42.7 ng/ml, $p<0.001$). There were negative correlations between log-transformed values of serum IGF-1 and plasma BNP ($R=-0.355$, $p=0.002$). Compared with the group with normal adiponectin level, the CHF patients with hyperadiponectinemia showed significantly low serum IGF-1 level ((74.2±26.7) vs (98.5±42.2) ng/ml, $p=0.010$). Serum adiponectin was inversely associated with serum IGF-1 ($r=-0.335$, $p=0.003$).

Conclusions There were high adiponectin levels and low IGF-1 levels in patients with chronic heart failure. IGF-1 was also negatively associated with adiponectin. The alteration of adiponectin level in different grade of heart failure is very sensitive, and could be an independent risk marker to evaluate CHF severity. Adiponectin and IGF-1 were contributed to reveal the prognosis of patients with CHF.

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