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THE STUDY OF CORRELATION BETWEEN PLASMA LEVELS OF HYPERHOMOCYSTEINEMIA AND ACUTE CORONARY SYNDROME

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Objectives o investigate HCY plasma concentration of acute coronary syndrome (acute coronary syndrome, ACS) after confirming diagnosis by clinic data and coronary angiography (coronary arteriography, CAG) and the relationship between plasma HCY level and coronary artery lesions.

Methods This study was conducted with 90 ACS patients and 60 healthy subjects randomly. The blood specimens were collected after on the second morning with a fasting status. Coronary angiography was carried out on each one of the selected objects, rule out other heart diseases such as an dilated cardiomyopathy, hypertrophic cardiomyopathy, rheumatoid cardiomyopathy, hyperthyroidism cardiomyopathy, abnormal of kidney and liver function and infection, malignant tumor, problems of the blood system, respiratory system disease and immune system disease. A total of 150 patients were selected divided into four groups, 30 cases of acute ST-segment elevation myocardial infarction group, 30 cases of the non-ST-segment elevation myocardial infarction group, 30 cases of unstable angina pectoris group and 60 healthy subjects with normal control group. All subjects were recorded general situation, the ages, blood fat and CAG results. All subjects were determined by high performance liquid chromatography (HPLC) method to detect HCY plasma concentration, with all the data SPSS17.0 package statistics processing.

Results (1) plasma HCY level of the acute ST-segment elevation myocardial infarction (STEMI) group is 17.83 ± 2.56 , plasma HCY level of the non-ST-segment elevation myocardial infarction (NSTEMI) group is 17.07 ± 1.51 , plasma HCY level of unstable angina pectoris is 17.00 ± 1.60 , There are not statistical significance among three groups HCY level difference, plasma HCY level of the control group is 10.15 ± 2.00 . There are significantly statistical significance between the three groups HCY level difference and the control group ($p < 0.001$). (2) Acute coronary syndrome groups and control group are categorised into 4 count groups according to coronary artery lesions count; plasma HCY level normal of the control group (60 cases) is 10.15 ± 2.00 ; plasma HCY level of single vessel lesion group (26

cases) is 16.32 ± 1.31 ; plasma HCY level of double vessel lesions group (30 cases) is 17.56 ± 2.40 and, plasma HCY level of three lesions group (34 cases) is 17.84 ± 1.30 , F value 169.169, $p < 0.001$. single lesion group, double vessel lesions group, three lesions group of plasma HCY level are obviously higher than those in the control group. (3) The correlation analysis between level of plasma HCY and coronary artery lesions count, $r_s = 0.804$ ($p < 0.001$), has the remarkable statistical significance. Plasma HCY level and coronary artery lesions count are positively related.

Conclusions The level of plasma HCY and acute coronary syndrome is relevant and can reflect the coronary artery lesions. In acute coronary syndrome groups of patients, plasma HCY level is obviously higher than those in the control group. The more serious coronary artery lesions are, the higher plasma HCY concentration is. Therefore, in some extent, plasma HCY level could be regarded as an indicators used to guide disease assessment of clinical acute coronary syndrome.