Relationship between plasma biomarkers and prognosis of patients with acute cerebral infarction

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[Foundation Project]: Funded as new technology of Guangdong Province (grant No. gd281723)

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Received: 2014-10-31 Revised: 2014-11-15

JHMC,2015;21(2):256-258

View from specialist: It is creative, and of certain scientific and educational value.

[ABSTRACT] Objective: To discuss the difference in plasma biomarkers between healthy people and patients with acute cerebral infarction, and to explore the value of plasma biomarkers in prognosis of patients with acute cerebral infarction. Methods: A total of 118 patients with first-ever acute cerebral infarction and 112 healthy controls were recruited and plasma N-terminal pro-brain natriuretic peptide (NT-proBNP), D-dimer (D-D) and homocysteine (HCY) were tested. The neurological deficits in patients with cerebral infarction were evaluated by using National Institutes of Health Stroke Scale (NIHSS). Death, disability and recurrent stroke events were followed up. Results: Plasma NT-proBNP levels in patients with acute cerebral infarction was significantly higher than those of healthy controls (373.4 ± 112.3 pg/mL vs. 64.5 ± 21.4 pg/mL). Plasma D-D levels was significantly higher than those in healthy controls. Plasma HCY levels was significantly higher than those in healthy controls. 11 patients (9.32%) died, 15 patients (12.71%) disabled, and 18 patients (15.25%) had nonfatal recurrent stroke during the follow-up period. There was significant positive correlation between plasma NT-proBNP, D-D, HCY levels and NIHSS scores. Multivariate logistic regression analysis demonstrated that advanced age, NIHSS scores, NT-proBNP and HCY level were the independent predictors of poor outcome. Conclusions: The increased plasma biomarkers, such as NT-proBNP, D-D, HCY levels can be used to judge the severity of the disease, and NT-proBNP and HCY are the independent predictors in patients with acute cerebral infarction.

[KEY WORDS] Acute cerebral infarction, N-terminal pro-brain natriuretic peptide, D-dimer, homocysteine