



## Association of plasma B-type natriuretic peptide concentration with myocardial infarct size in patients with acute myocardial infarction

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**ABSTRACT.** B-type natriuretic peptide (BNP) is widely used in the treatment of early-stage heart failure and coronary heart disease. In this study, the association of plasma BNP concentration with myocardial infarct (MI) size in patients with acute myocardial infarction (AMI) was investigated. Eighty patients with AMI were enrolled in the MI group and 30 healthy volunteers were selected as the control group. Magnetic resonance imaging of the heart and plasma BNP concentration detection were carried out, and then the relationship between plasma BNP concentration and MI size was analyzed in the two groups. Results showed that the plasma BNP concentration was positively related to MI size ( $r = 0.645$ ,  $P < 0.0005$ ), whereas it was negatively correlated to the left ventriculus ejection fraction ( $r = 0.297$ ,  $P = 0.047$ ). Multiple regression analysis showed that MI size was the only parameter that was independently associated with BNP ( $r^2 = 0.32$ ,  $F = 7.712$ ,  $P = 0.007$ ). Moreover, when the BNP level reached 150 pg/mL, it had 85.1% sensitivity and 70.4% specificity of determining MI sizes exceeding 10%. The plasma concentration of BNP is highly related to MI size in patients with AMI, and can be clinically used to evaluate MI size.

**Key words:** Myocardial infarction; B-type natriuretic peptide; Myocardial infarct size; Magnetic resonance perfusion imaging