AN ESSENTIAL ROLE OF SERUM B-TYPE NATRIURETIC PEPTIDE IN PATIENTS WITH ACUTE INFERIOR MYOCARDIAL INFARCTION

doi:10.1136/hrt.2010.208967.432

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Objective To investigate the relationship between the level of serum B-type natriuretic peptide (BNP) and right ventricular infarction in patient s with acute inferior myocardial infarction (AIMI).

Method The serum BNP level was measured in 213 consecutive patient s with AIMI who were admitted in the coronary care unit (CCU) and in the normal control with 98 cases from October 2006 to May 2009. The patients were divided into five groups in accordance with the coronary angiographic findings and ECG. Acute inferior myocardial infarction group; acute inferior myocardial infarction and right ventricular infarction group; control group; left anterior circumflex (LXC) group; proximal, middle and distal segment of right coronary artery (RCA)group. All patient s were performed directly percutaneous coronary intervention (PCI) within 24 h after the onset of AIMI. The incidence of major adverse cardiac events (MACE), including arrhythmia, heart failure, cardiac shock and mortality, had been observed during hospital, 30 days and 3 months.

Result BNP level in the acute inferior myocardial infarction and right ventricular infarction group was significantly higher than that in acute inferior myocardial infarction group (p<0.010). The level in the proximal2mid segment of RCA group was higher than that in the LXC group (p<0.101). Additionally, logistic regression analysis showed that the level of BNP was an independent predictor of MACE in the 30 days and 3 months in acute inferior myocardial infarction patient s (r=0.701, 95 % CI <0.01 to 0.615, p<0.010).

Conclusion We demonstrated the level of BNP in patients with acute inferior myocardial infarction or/and right ventricular infarction, and BNP could be a good predictor for patients with acute inferior myocardial infarction and right ventricular infarction.

EFFECT OF ATROVASTATIN THERAPY ON BORDERLINE VULNERABLE LESIONS IN PATIENTS WITH ACUTE CORONARY SYNDROME

doi:10.1136/hrt.2010.208967.432

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Objective To evaluate the effect of atrovastatin therapy on borderline vulnerable lesions in patients with acute coronary syndrome (ACS) and to investigate the relationship between lesion reversion and the level of MMP-9, TIMP-1, hs-CRP respectively.

Methods Patients with ACS whose serum LDL-C is lower than 2.1 mmol/L underwent coronary angiography (CAG) and intravascular ultrasound (IVUS) investigation. If the culprit lesions were demonstrated to be borderline lesions (coronary artery stenosis between 50-70%) by CAG and minimal lumen cross-sectional area (CSA) >4.0 mm² by IVUS, the patients were enrolled in the present study. Intravascular ultrasound was performed to assess coronary atheroma at baseline and 12 months after atrovastatin therapy. The level of MMP-9, TIMP-1, hs-CRP were respectively measured by ELISA at baseline and 12 month-follow-up.

Results No adverse events were reported during follow-up period. Comparing with baseline data, the level of ApoB decreased significantly at the end of the study (0.589±0.156 g/l vs 0.681±0.152 g/l, p<0.05). At 12 month IVUS follow-ups, minimal lumen CSA increased ((6.32+1.42) mm² vs (4.63+0.51) mm², p<0.01), the plaque/media (P&M) area decreased (6.70±1.19 mm² vs 8.17±1.55 mm²), p<0.05; Plaque Burden decreased (56.94±8.47% vs 61.4±10.34%, p<0.01). A total of 25 soft plaques (50%) transformed into fibrous plaque. Comparing with baseline data, level of MMP-9 and hs-CRP decreased at the end of the study, ((1636+483) ng/ml vs (0.39+0.19 mg/l) vs (3.48+1.50) mg/l, p<0.001), respectively. TIMP-1 increased ((788+110) ng/ml vs (664+102) ng/ml, p<0.001). In stepwise multivariate linear regression analysis, the only independent predictor of changes in P&M area per year was decrement of MMP-9 and hs-CRP (γ=0.85, p<0.01, and γ=0.83, p<0.01, respectively). Regression equation is Annual Change of P&M area=−1.327+0.003 Annual Change of MMP-9 +0.344 Annual Change of hs-CRP, R Square=0.830, Adjusted R Square=0.819, F=78.152, p=0.000.

Conclusions Atrovastatin therapy stabilises borderline vulnerable plaque and reverses atherosclerosis progression in patients with ACS. Reversion of the atherosclerotic progression of vulnerable plaque is accompanied by the decrement of the level of plasma MMP-9 and hs-CRP. Changes in the level of MMP-9 and hs-CRP could predict the stabilisation of vulnerable plaque.