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Brain Natriuretic Peptide as an Indicator of Left Ventricle Dysfunction and a Predictor of Cardiovascular Events in Acute Coronary Syndromes

Abstract

Background: Acute coronary syndromes can cause systolic and diastolic left ventricle (LV) dysfunction. Determination of LV dysfunction in ACS provides benefit to stratification and optimizing therapy. Brain Natriuretic Peptide (BNP) is secreted primarily from and synthesized in left ventricle in response to increased myocardial stretch. BNP increase in heart failure. BNP increase in the 24 hours in acute myocardial infarction. We hypothesized that BNP level could be as an indicator of systolic and diastolic dysfunction and a predictor of cardiovascular events in acute coronary syndromes. Objective: To investigate plasma level of BNP in systolic and diastolic dysfunction in acute coronary syndromes hospitalized to ICCU. To investigate plasma level of BNP as a predictor of cardiovascular events in acute coronary syndromes. Method and Result: We measured BNP in plasma specimen obtained 3 days after the onset of ischemic symptoms in 25 patients of acute coronary syndromes and prospectively followed the patients for 30 days. Patients diagnosed with evidence of systolic LV dysfunction had a mean BNP concentration of 301.11 ± 189.62 pg/ml, higher than those patients with normal LV function (42.67 ± 22.44 pg/ml, p = 0.003). Patients diagnosed with evidence of diastolic LV dysfunction had a mean BNP concentration of 273.70 ± 146.27 pg/ml, higher than those patients with normal LV function (42.67 ± 22.44 pg/ml, p = 0.006). Patients with cardiovascular events had a mean BNP concentration of 392.30 ± 157.14 pg/ml, higher than patients without cardiovascular events (118.67 ± 78.53 pg/ml, p < 0.0001). In patients with cardiovascular events, minimum plasma BNP level (248 pg/ml) was higher than maximum plasma BNP level in patients without cardiovascular events (234 pg/mL). Conclusion: Plasma BNP level can reliably detect the presence of diastolic or systolic LV dysfunction on echocardiography in acute coronary syndromes. Moreover, plasma BNP level can also predict patients with cardiovascular events in 30-days after acute coronary syndromes.

Keyword : BNP, Left, ventricle, dysfunction, cardiovascular, events, acute, coronary, syndromes,

Daftar Pustaka :