Background: It has been reported that slight elevation of N-terminal Pro-brain natriuretic peptide (NT-proBNP) is a predictor of cardiovascular events. In patients with heart failure, biomarkers of myocyte injury are elevated. However, the correlation between these markers in patients with essential hypertension has not been elucidated. We evaluated the relationship between NT-proBNP and heart-type fatty acid-binding protein (H-FABP) in hypertensive patients.

Methods: We measured serum NT-proBNP and H-FABP concentration of discontinuous 187 patients with essential hypertension, except the history of heart failure and angina pectoris. Single and multiple variable regression analyses were carried out in search of correlation between clinical variable and NT-proBNP concentration.

Results: The average of H-FABP was 3.57±1.68 ng/ml (Max: 12.0 ng/ml, Min: 1.3 ng/ml, Median: 3.3 ng/ml). In single variable analysis, age (p<0.0011, odds ratio (OR): 1.05, 95% confidence interval (CI): 1.02-1.08), Hb (p=0.03, OR: 0.8, CI: 0.65-0.98), eGFR (p=0.001, OR: 0.94, CI: 0.92-0.97) were factors that independently correlated with H-FABP concentration<median 3.3 ng/ml. In multiple variable analysis, eGFR (p=0.001, OR: 0.95, CI: 0.92-0.97) remained as independent correlate of H-FABP concentration. The average of NT-proBNP was 90.1±82.7 pg/ml (Max: 527 pg/ml, Min: 5 pg/ml, Median: 67 pg/ml). In single variable analysis, age (p<0.0001, OR: 1.10, CI: 1.01-1.14), eGFR (p=0.0072, OR: 0.98, CI: 0.96-0.99), Hb (p=0.0001, OR: 0.60, CI: 0.48-0.76), H-FABP (p=0.004, OR: 1.5., CI: 1.20-1.89), and gender (men) (p=0.0006, OR: 0.39, CI: 0.20-0.64) were factors that independently correlated with a NT-proBNP concentration<median 67 pg/ml. In multivariable analysis, age (p<0.0001, OR: 1.08, CI: 1.04-1.12) and H-FABP (p=0.012, OR: 1.33, CI: 1.05-1.68) remained as strong independent correlate of NT-proBNP concentration.

Conclusions: H-FABP is a significant factor that induced the elevation of NT-proBNP in hypertensive heart without heart failure and ischemic etiology. These results suggest that there is myocardial injury in patient with essential hypertension.