MYOCARDIAL ISCHEMIA AND INFARCTION

PLASMA MYELOPEROXIDASE LEVEL AIDS IN PREDICTING LONG-TERM OUTCOME OF ACUTE MYOCARDIAL INFARCTION

ACC Poster Contributions
Georgia World Congress Center, Hall B5
Tuesday, March 16, 2010, 9:30 a.m.-10:30 a.m.

Session Title: Stable Ischemic Syndromes--Biomarkers and Outcomes
Abstract Category: Unstable Ischemic Syndrome/Long-Term Outcome
Presentation Number: 1263-257

Authors: _Mehmet Kaya_, Ridvan Yalcin, Kaan Okyay, Fatih Poyraz, Nilufer Bayraktar, Hatice Pasaoglu, Bulent Boyaci, Atiye Cengel, Erciyes University, Kayseri, Turkey

Background: We sought to investigate the prognostic importance of plasma myeloperoxidase (MPO) levels in patients with STEMI at long term follow-up period and to analyze the correlation of plasma MPO levels with other biochemical parameters.

Methods: We evaluated plasma MPO levels in 73 consecutive patients (56 men, mean age; 56 ± 11 years) diagnosed with acute ST elevation myocardial infarction and 46 age- and sex- matched healthy controls. The median plasma MPO levels of the patients were 68 ng/ml. Patients were classified into 2 groups according to the median MPO value (Group 1: plasma MPO $\leq$68 ng/ml and Group 2: plasma MPO >68 ng/ml). Patients were monitored for the occurrence of major adverse cardiovascular events (MACE). MACE were defined as cardiac death, reinfarction, new hospital admission for angina, heart failure and revascularization procedures.

Results: Mean follow-up period was 25 ± 16 months. Plasma MPO levels were higher in STEMI patients than the subjects in control group (82 ± 34 ng/ml vs 20 ± 12 ng/ml $p = 0.001$). Patients with high MPO levels were more likely to have anterior wall myocardial infarction, low LVEF and multi-vessel coronary artery disease than those with low plasma MPO levels. Composite MACE occurred in twelve of the patients with high MPO levels (33%) and four of the patients with low MPO levels (11%) ($p=0.020$). The incidences of nonfatal recurrent myocardial infarction and verified cardiac death were higher in the high MPO levels group. At multivariate analysis, high plasma MPO levels were independent predictors of MACE [odds ratio (OR) 3.843, <95% CI 1.625-6.563; $p = 0.003$] together with CRP (OR 2.863, 95% CI 1.337-6.452; $p = 0.012$) and LVEF <40% (OR 3.225, 95% CI 1.434-6.554; $p = 0.001$). Plasma MPO levels were also correlated with CRP levels ($r=0.451$, $p=0.004$), troponin T ($r=0.390$, $p=0.004$), and NT pro BNP levels ($r=0.445$, $p=0.002$) but not with WBC count ($r=0.166$, $p=0.189$) in the STEMI patients.

Conclusions: High plasma MPO levels identify patients with a worse prognosis after STEMI at two-year follow up period. Evaluation of plasma MPO levels may be useful in determining patients at high risk of death and MACE, who might benefit from a further aggressive treatment and closer follow-up.