

Plasma osteopontin level ,prediction of LV systolic dysfunction,correlation with infarction size in ST elevation myocardial infarction

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Abstract

Background: The Outcome of patients diagnosed with ST elevation myocardial infarction (STEMI) varies widely despite similar presentation and management., this highlights the importance of establishing prognostic predictors for those patients. Osteopontin (OPN) expression increases with coronary artery disease(CAD), where it is associated with increased cardiac myocytes apoptosis and myocardial dysfunction, hence it is implicated to be a marker for occurrence of major adverse cardiac events (MACE).

OBJECTIVE:

To study the role of serum OPN level as a potential short term prognostic marker for the occurrence of MACE in patients presenting with STEMI and to study the correlation with infarction size (IS) measured by resting myocardial perfusion imaging.

Patients and METHODS:

A prospective, cohort ,controlled study was conducted in the period between january 2014 and December 2014 involving forty consecutive patients (29 male and 11 female, mean age 52 ± 11 years) who were admitted to Critical care department ,Faculty of medicine ,Cairo university with established diagnosis of STEMI and thirty control subjects diagnosed to have normal coronaries(19 male,11 female, mean age 48.4 ± 9.2 years). In all patients, plasma OPN level were assessed on admission . primary percutaneous intervention(PCI) was the reperfusion strategy in the whole study population. Rest myocardial perfusion imaging was done 3 days post PCI to assess the infarction size. One month follow up for the occurrence of MACE was done for the studied population.

RESULTS:

Patients with STEMI had higher OPN levels (106 ± 15 ng/ml) on admission than the control subjects (27.5 ± 12.7 ng/ml, $P = 0.01$). Mean IS was (21.88 ± 8.99). There was a statistically significant relationship between OPN level and LV systolic dysfunction ($r: 0.3$, $p: 0.045$). Yet , there was no statistically significant correlation between OPN level and mortality or reinfarction ($r: 0.2$, $p: 0.08$, $r: 0.12$, $p: 0.075$, respectively).we found a significant statistically significant relationship between IS and LV systolic dysfunction ($r: 0.9$, $p < 0.001$) and between IS and mortality($r: 0.6$, $p: 0.003$). OPN level were significantly correlated with the IS. ($r: 0.3$, $p: 0.045$) .

CONCLUSION:

The plasma OPN level might be useful as a novel prognostic short term marker in patients with STEMI after revascularization (as regarding LV systolic dysfunction, but not mortality or reinfarction).Also, IS may be used as a short term prognostic factor in patients with STEMI after revascularization for LV systolic dysfunction and mortality.

Key word: Plasma osteopontin level, MACE, STEMI