OSTEOPROTEGERIN IN ACUTE ST-ELEVATION MYOCARDIAL INFARCTION - TIMING OF SAMPLE DRAWING AND IMPACT ON OUTCOME

ACC Moderated Poster Contributions
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Background: For osteoprotegerin (OPG), a cytokine of the tumor necrosis factor superfamily, a prognostic impact in coronary heart disease and acute coronary syndromes has been shown recently. In acute ST-elevation myocardial infarction (STEMI) there is some correlation to final infarct size in single photon emission computed tomography (SPECT).

However, data on correlation with outcome in STEMI is lacking. Also the timing of sample drawing after the acute index event has not been investigated, yet.

Methods: We enrolled 251 consecutive patients with acute STEMI undergoing primary percutaneous coronary intervention (PCI) within 12 hours of symptom onset. Blood samples were collected directly during primary PCI (OPG0), after 24 hours (OPG24) and 48 hours (OPG48). The blood was centrifuged directly after sample drawing and the serum was immediately frozen at -87°C. OPG was measured with a standard ELISA-Kit. A combined endpoint of major adverse cardiac events (MACE) including death, myocardial infarction and new onset of congestive heart failure was used for outcome assessment.

Results: Median follow-up was 17.3 months (Interquartile range [IQR] 8.8,20.8). OPG levels (in pg/ml) decreased over time of sample drawing (OPG0 710.8, IQR 515.9;992.3); OPG24 580.2, IQR 453.9;935.1; OPG48 568.2, IQR 415.3;820.2). In a multivariate model for prediction of MACE including left ventricular ejection fraction, age, diabetes, patent culprit vessel after PCI, OPG0, OPG24 and OPG48 only age, ejection fraction and OPG24 levels remained independent factors for MACE. An OPG24 level > median showed higher rates of MACE (31.4% vs. 13.6%; OR 2.9; 95% CI:1.4-5.9; p=0.003).

Conclusions: OPG serum levels after 24 hours are significantly associated with MACE at long-term follow up in acute STEMI patients undergoing primary PCI, whereas OPG levels in the acute phase and after 48 hours are no MACE predictors. OPG for risk assessment in STEMI patients should therefore be assessed at 24 hours after reperfusion.