Corin Level as a Predictor of Major Adverse Cardiac Events Post PCI

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Introduction : Corin is a Type II transmembran enzyme that cleaves Pro BNP and Pro ANP to the active natriuretic peptides. Natriuretic peptides confer multiple effects on the cardiovascular system.

Hypothesis: High level of corin is associated with reduced future cardiac events in CAD patients post PCI .

Methods: One hundred thirty six consecutive patients with coronary artery disease that were admitted to the cardiology department between the years 2004 and 2006. Most of the patients were admitted for acute coronary syndrome; mainly NSTEACS .These patients underwent coronary angiography and PCI. Patients with normal coronaries or insignificant CAD were excluded from the study .Corin level in the serum was measured pre-PCI by ELISA assay. At the same period serum corin level was measured in 98 healthy volunteers in the same ages. The two populations were followed for MACE (MI, Death, Revascularization ,CVA/TIA, and Angina) between two and three years.
Data were analyzed with SAS statistical software, version 8 .
$P< 0.05$ was considered significant.
Continuous variables were reported as the mean value ± SD , and comparisons between groups were performed using t test .
Categorical data were compared by the chi square test.
Logistic regression analysis was used to determine predictors of MACE.

Results: Mean corin level in healthy volunteers was 1125 ±640 pg/ml and 802±296 in the CAD patients ($P<0.0001$) .Patients that underwent PCI were followed for 2-3 years .Seventy patients suffered from MACE (51.4 percent).
Fifty two percent needed repeat PCI ,26 percent suffered from angina ,4 percent CABG ,7 percent suffered from stroke ,7 percent MI and 4 percent mortality .
Mean corin level in the whole study population was 802 ±296 pg/ml unit.
Mean corin level in the MACE group was 701±223 pg/ml unit ,and in the non-MACE group was 892±316 pg/ml unit ($P=0.0001$).
Using multivariate analysis to compare corin with known risk factors of CAD ,only corin was statistically significant as predictors of MACE ($P=0.0007$,OR-0.85 ,95% CI -0.785-0.937).
Using corin level of 850 pg/ml or less we were able to predict MACE post-PCI with sensitivity of 83 percent ,specificity of 46 percent ,positive predictive value of 60 percent and negative predictive value of 73 percent.

Conclusion:
Patients with CAD have low serum corin levels compared to the general population. Low Serum corin level is an independent predictor of MACE following PCI.
In our cohort the risk factors of CAD were not proven to be predictors of MACE post-PCI.