



Acute Coronary Syndromes

NEUTROPHIL TO PLATELET RATIO: A NOVEL PROGNOSTIC BIOMARKER IN STEMI PATIENTS UNDERGOING PRIMARY PERCUTANEOUS CORONARY INTERVENTION

Poster Contributions

Poster Hall B1

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Background: Several studies demonstrated the usefulness of inflammatory biomarkers in risk stratification of ST-Elevation Myocardial Infarction (STEMI). The study assessed the prognostic potential of a new biomarker, neutrophil to platelet ratio (NPR), developed with the purpose of correcting the entity of the acute inflammatory response (expressed by neutrophils) with that of pre-existing chronic inflammation (expressed by platelets).

Methods: The predictive role of NPR at admission was evaluated in all consecutive patients undergoing pPCI for STEMI in our center from 2006 to 2013 (n=1532). We compared patients in the highest quartile of NPR values with patients in the other 3 quartiles. We then performed multivariable mortality analyses by logistic and Cox regression models.

Results: [NPR was 0.0681 in the 4th quartile and 0.0281 in the other three]. Patients in the 4th NPR quartile had higher Killip class, higher peak CK and lower LV ejection fraction (all $p < 0.001$), higher incidence of cardiogenic shock, use of IABP, length of stay in CCU and higher creatinine values (all $p < 0.01$), lower incidence of ST-resolution ($p = 0.024$). They showed higher short-term mortality (6.8% vs 2.3%, $p < 0.001$), higher all-cause long-term mortality (14.2% vs 6.6%, $p < 0.001$), and a higher cardiovascular long-term mortality (13% vs 4.5%, $p < 0.001$). After adjusting for age, LVEF, haemoglobin and serum creatinine at admission and anterior AMI, NPR was found to be an independent predictor of short-term mortality (HR 2.28, 95%CI 1.16-4.51, $p = 0.017$), all-cause long-term mortality (HR 1.6, 95%CI 1.03-2.38, $p = 0.034$), and cardiovascular long-term mortality (HR 2.14, 95%CI 1.34-3.42, $p = 0.001$).

Conclusion: The neutrophil to platelet ratio at admission was an independent predictor of short- and long-term mortality in STEMI patients undergoing pPCI: patients in the 4th quartile showed a two-fold risk of long-term cardiovascular mortality. Should its powerful predictive value be confirmed in other large cohorts, NPR could be easily introduced in the clinical practice.