# Coronary Artery Disease

## Comparison of TIMI, PURSUIT, GRACE risk scores and SYNTAX scores in patients presenting with non-ST-elevation myocardial infarction in Indian population – a prospective cohort study

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**Background**: Patients with non ST elevation myocardial infarction are a very heterogenous population, with varying risks of early and long term adverse events. Early risk stratification at admission seems to be essential for planning therapeutic strategy.Several groups have developed comprehensive risk scores that use clinical variables which include TIMI, PURSUIT, GRACE and syntax risk score. In this study we sought to compare these risk scores in a Indian NSTEMI cohort.

**Methods and result**: This is a prospective cohort study. A total 213 patients with NSTEMI were included in this study. The mean age of the cohort was $61 \pm 12$ years. For early mortality all three RS had good discriminative accuracy. Again the GRACE RS is better (AUC $-0.824$ CI: $0.69-0.95$) as compared to TIMI or PURSUIT RS. GRACE RS also has a good sensitivity, specificity and negative predictive value and hence has better predictive accuracy when compared to TIMI and PURSUIT RS. In longterm (1year) mortality all the RSs have a good discriminative accuracy with GRACE having a higher AUC of 0.778 CI: $0.69-0.86$. All the risk scores have a good predictive accuracy for long term events and mortality. Early mortality in this group shows syntax to have a better discriminative accuracy (AUC $-0.885$ CI: $0.78-0.98$) than the other risk scores. After logistic regression, the predictors of early mortality were CCS class IV, low systolic and low diastolic blood pressure. For the longterm mortality the predictors were age, low systolic and diastolic blood pressure, low ejection fraction, low haemoglobin, high serum creatinine and cardiac failure during hospital stay.

**Conclusions**: The three scores have good discriminative accuracy and predictive accuracy for both short – term and long term events and mortality in Indian population. The GRACE risk score has better AUC at both the early and 1-year prognostication. Diastolic blood pressure, echocardiographic variables like regional wall motion abnormalities, ejection fraction and haemoglobin are significant prognostic variables in Indian population.

## Vascular inflammation and angiographic severity of coronary artery disease in young Asian Indians

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**Background**: By 2015, India will have the largest coronary artery disease (CAD) burden in the world. Indians manifest CAD at a younger age. Inflammation plays a key role in CAD progression. Inflammatory marker high sensitivity C-reactive protein (hsCRP) predicts CAD risk either by correlation with CAD extent (disease marker) or as an indicator of inflammatory event that leads to plaque rupture (a process marker).

**Aim**: To assess the role of vascular inflammation and correlate with coronary atherosclerosis in an economically and relevant section of population of young Indians.

**Methods**: Serum hs-CRP (measured by immune-turbidimetry technique) level was measured in young adults (18–45 years) with angiographic proven CAD (60 patients), and compared with those >45 years age (24 patients), and in controls with no CAD (14 patients).Later, the levels of hs-CRP were compared with the angiographic stenosis and extent score in young CAD patients.

**Results**: Mean hsCRP was elevated in Young CAD patients more than in those of Old CAD patients and Controls, and this trend was found to be significant by ANOVA (P = 0.028).The hs-CRP levels were found to be in direct proportion to both stenosis and extent score of coronary artery disease (P < 0.01) in young adults.

**Conclusion**: Serum hs-CRP levels and inflammation have a positive correlation with the disease burden in the young CAD patient. Premature CAD in Young Asian Indians could be partly explained by increased vascular inflammation. Further studies and interventions to identify & reduce risk factors in an economically and socially relevant section of population of a fast developing country like India is urgently needed.

## Safety and efficacy of Reteplase IV Injection-recombinant plasminogen activator in management of ST elevated myocardial infarction (STEMI)

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**Background**: ST elevated myocardial infarction is a serious and life threatening condition. In patients suitable for thrombolytic treatment, time is critical and reperfusion should be initiated as soon as possible. Reteplase is commonly used in the management of ST elevated myocardial infarction.

**Objective**: To assess the safety and efficacy of intravenous Retelex (Reteplase) injection in management of patients with ST elevated myocardial infarction in clinical practice.