Is the ICHOR Platelet Works Test as Valid as Flow Cytometry to Assess the Efficacy of Platelet Glycoprotein IIb/IIIa-Receptor Inhibitors in Patients Undergoing Percutaneous Coronary Intervention?  

**Background**  
Inhibition of the glycoprotein (GP) IIb/IIa receptor on platelets by tirofiban and abciximab has shown to reduce ischemic complications in patients undergoing elective percutaneous coronary intervention (PCI). The effect of GP IIb/IIIa antagonists can be measured by flow cytometry, but it is a labour intensive and expensive method. The ICHOR platelet-works is a quick and inexpensive method for measuring platelet aggregation. The ICHOR method determines a reference platelet count in 1 ml blood in a tube containing K3-EDTA and the anticoagulant. This process is repeated with a second tube with blood containing 20 μmol/L ADP. In the presence of ADP, platelets associate and aggregate. The ratio between the two numbers of platelets in the two tubes that did not aggregate is calculated as percent platelet aggregation. The purpose of this study was to compare the results of these two methods in patients treated with abciximab or tirofiban.

**Methods**  
We randomised 40 AMI patients to abciximab (Group A, N=20) and to tirofiban (Group B, N=20). Before, immediately after, 30 minutes after, 60 minutes after and 120 minutes after PCI, bloodsamples were obtained and tested with the ICHOR test (platelet aggregation) and with flowcytometry (Biotex GP IIb/IIa receptor occupancy kit). Correlation was tested between the median values of flowcytometry and the ICHOR test for abciximab and tirofiban with the use of Pearsons correlation.

**Results**  
In Group A, GP IIb/IIa receptor occupancy was at the different time points respectively: 0%, 86%, 90%, 87% and 88% and platelet aggregation was respectively: 63%, 31%, 40%, 43% and 52%. In Group B, GP IIb/IIa receptor occupancy was at the different time points respectively: 0%, 60%, 56%, 51% and 51% and platelet aggregation was respectively: 68%, 77%, 77%, 80% and 81%.

No significant correlation between GP IIb/IIa receptor-occupancy and platelet aggregation was found between both groups at the different time points. (Abciximab: r = 0.090; tirofiban: r = 0.031)

**Conclusion**  
As compared with the "gold standard" flowcytometry, the ICHOR plateletworks method is not useful to monitor de level of GP IIb/IIa-receptor occupancy in patients treated with abciximab or tirofiban.

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**Abstracts - Angiography & Interventional Cardiology**

**1025-44** Is the ICHOR Platelet Works Test as Valid as Flow Cytometry to Assess the Efficacy of Platelet Glycoprotein IIb/IIIa-Receptor Inhibitors in Patients Undergoing Percutaneous Coronary Intervention?  

**Ischemia Markers and Cytokines in Patients With Acute ST Elevation Myocardial Infarction Undergoing Rotational Atherectomy**

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**Background**  
Extensive microembolization occurs during rotational atherectomy (RA), which contributes to high rates of post-procedural cardiac enzyme elevation. We hypothesized that statin therapy might ameliorate the deleterious effects of microembolization during RA and reduce post-procedural enzyme elevations.

**Methods**  
We studied 230 consecutive patients who underwent coronary interventions utilizing RA between September 2000 and April 2003. Patients with renal insufficiency or with elevated cardiac troponin I (cTnI) or creatinine kinase (CK) prior to RA were excluded. Baseline, procedural, and post-procedural outcomes were compared for those patients on statin therapy prior to RA and for those not on statin therapy.

**Results**  
Baseline characteristics were similar between the two cohorts. There was no significant difference in the use of stents or IIb/IIIa inhibitors. Patients on statin therapy had significant reductions in mean peak cTnI and in the rate of elevated cTnI (> 1.5 ng/ml) following the procedure. On multivariate analysis, lack of statin therapy was the only independent predictor of cTnI elevation.

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**1025-45** Preprocedural Statin Medication Reduces Small and Large Periprocedural Myocardial Infarction in Patients With Stent Implantation

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**Background**  
Stenting-related myocardial injury (MI) is caused by microembolisation of platelet aggregates and plaque debris together with inflammation. The pleiotropic effects of HMG-CoA reductase inhibitors (statins) include anti-thrombotic and anti-inflammatory aspects. Thus, we tested whether pre-procedural statin therapy limits the extent of periprocedural MI.

**Methods**  
We stratified 1218 consecutive patients (pts)/with uncomplicated according to their pre-procedural status of statin therapy (1012 statin-pos. and 206 statin-neg. pts). Per-procedural MI was assessed by analysis of creatine kinase (CK: upper limit of normal (ULN) 80 IU/l), CK-MB (threshold ULN >8% of CK fraction) and cardiac troponin I (cTnI >0.04 μg/L) before, 6, 12, and 24 hours after the intervention. Results: Baseline characteristics including lipid levels were similar between statin-pos. and statin-neg. pts. Postinterventional maximum CK, CK-MB, and TnI elevations were larger in statin-neg. pts (68±62 vs 52±46 IU/L; 24±20 vs 18±16 IU/L; and 0.46±0.48 vs 0.38±0.42 μg/L, all p<0.001). Statin pretreatment reduced the relative risk for MI for all cut-off criteria separating small, intermediate and large MI.

**Conclusions**  
Pre-procedural statin therapy reduces stenting-related MI independent of the ischemia marker and the cut-off levels with relative risk reductions (RRR) ranging from 70 to 75%.