Summary:

Introduction:
Antiplatelet therapy is a cornerstone in the management of cardiovascular diseases. With regard to interindividual variability in platelet reactivity and recurrence of thrombotic events despite therapy the importance of platelet function monitoring seems to be much higher.

Objectives:
The aim of our study was to describe the prevalence of high on treatment platelet reactivity in our study population. We were looking for the potential relationship between platelet reactivity and comorbidities or medication and tried to assess measurement reproducibility.

Methods and results:
207 patients with cardiovascular diseases on ASA treatment (daily dose 100mg) were enrolled. Platelet functions were monitored by optic aggregometry (LTA) with cationic propylgallate as inductor. Residual platelet reactivity was assessed initially and afterwards (median value 9 months) without changes in ASA dose. In 82,1% suppression of platelet reactivity was adequate in both assessments, in 16,9% suppression of platelet reactivity was inadequate in at least one of the measurements. Our results show wide variability in platelet reactivity in time (p=0,67). No statistically significant differences in platelet reactivity were found in subpopulation with acute coronary syndromes (p=0,37), with chronic stable coronary artery disease (p=0,70), with hypertension (p=0,30), with diabetes mellitus (p=0,30), with obesity (p=0,48) or with heart failure (p=0,21). No intersex difference was found (p=0,99). No relevant is statistically significant difference in platelet reactivity in patients with hyperlipidaemia (p=0,007). Test power is low. Concomitant medication has no statistically significant influence on platelet reactivity: ACE-inhibitors (p=0,86), beta-blockers (p=0,12) and hypolipidemics (p=0,47). Monitored quantity seems to have poor reproducibility and high variability (according to Bland-Altman method).

Conclusions:
In conclusion routine platelet function monitoring has many limitations. We don´t found statistically significant difference in platelet reactivity between sex or in relation to comorbidities or medication. Our results with LTA (propylgallate as agonist) showed wide variability and inadequate reproducibility. We found wide results variability in time, without changes in therapy or knowledge of suggestible factors.