In clopidogrel-treated patients undergoing percutaneous coronary intervention (PCI), high platelet reactivity (HPR) is associated with a higher risk for thrombotic events including stent thrombosis (ST). A personalised therapy with selective intensification of treatment may improve HPR patients’ outcome in this setting although recent randomised trials are against this hypothesis. The aim of the ISAR-HPR registry was to assess whether clopidogrel-treated HPR patients benefit from selective intensification of P2Y12 receptor inhibition. For the registry, outcomes were compared between two cohorts. We identified 428 clopidogrel treated HPR patients (AU x min>= 468 on the Multiplate analyser) between 2007-2008 (historical control cohort) without a change of treatment based on platelet function (PF) testing results. Between 2009-2011, we identified 571 HPR patients (guided therapy cohort) and used this information for guidance and selective intensification of P2Y12 receptor directed treatment (reloading with clopidogrel, switch to prasugrel, re-testing) in a setting of routine PF testing. The primary outcome was the composite of death from any cause or ST after 30 days. Major bleeding according to TIMI criteria was also
monitored. The incidence of the primary outcome was significantly lower in the guided vs the control cohort (7 [1.2%] vs 16 [3.7%] events; HR 0.32, 95% CI 0.13-0.79; p=0.009). The incidence of major bleeding was numerically but not statistically higher in the guided vs the control cohort (1.9 vs 0.7%; p=0.10). In conclusion, present findings are in support for a PF testing guided antiplatelet therapy with selective intensification of P2Y12 receptor inhibition. The issue of personalised antiplatelet treatment warrants further investigation in randomized and well-controlled clinical trials.