Economic analysis of platelet aggregability-guided surgical revascularization compared with standard of care in ACS patients: subanalysis from PLAT-CABG randomized clinical trial.

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On behalf: Antiplatelet Therapy Study Group (AnTS)

Topic(s):
Health Economics

Background: Dual antiplatelet therapy (DAPT) is recommended for patients with acute coronary syndromes (ACS). Up to 15% are submitted to coronary artery bypass graft (CABG) during the hospitalization for the index event. However, as current guidelines recommend withdrawal of clopidogrel at least 5 days prior to CABG, this waiting time may increase hospital length of stay, thus potentially having negative impacts on costs and clinical outcomes. As previously presented at the ESC 2019 Congress, the PLAT-CABG study showed that the strategy to shortening CABG waiting time guided by platelet function test was non-inferior to the standard of care in terms of perioperative bleeding and led to shorter length of hospital stay among ACS patients. In this subanalysis, we present results regarding the in-hospital expenses for the two strategies.

Purpose: To determine, from the perspective of the Brazilian Government Health System (BGHS), the hospital expenses of patients undergoing CABG guided by platelet aggregability tests in comparison to the standard of care.

Methods: The PLAT-CABG study was a randomized and open label clinical trial testing a strategy of platelet aggregability-guided CABG after ACS versus standard-of-care. A total of 185 ACS patients on DAPT (aspirin plus clopidogrel) scheduled for on-pump or off-pump CABG were randomized to clopidogrel withdraw 5 to 7 days prior to CABG (control group) vs. daily measurements of platelet aggregability using Multiplate ADP-test (intervention group). Hospital cost (expressed in Brazilian currency - reais) subanalysis was pre-specified in the main trial statistical analysis plan. All patients had their hospital expenses covered by the BGHS and platelet aggregability tests costs were included in the analysis. Patients randomized to intervention group were allowed to undergo CABG when platelet aggregation recovered (pre-defined as Multiplate ≥46 AUC). In per protocol analysis, only patients who underwent CABG on the day after reaching the pre-specified aggregability cut point were analyzed.

Results: The main results are depicted in the Figure. In the intention-to-treat analysis, median hospital expenses for the intervention group were R$15,202.33 and for the control group R$16,251.37 (mean difference of R$1,049.04, or 6.4%, P=0.014). In per protocol analysis, the mean hospital expenses for the intervention group were R$14,248.41 and for the control group R$ 16,039.55 (difference of R$ 1,791.14 or 11.2%, P=0.003). For an estimated 70,000 CABG procedures/year in Brazil, we estimate that the implementation of this routine would save up to R$125,370,000.00/ year.

Conclusion: In patients with ACS taking DAPT, a strategy of platelet function-guided timing to CABG resulted in lower hospital expenses compared to a standard of care of waiting at least 5 days after clopidogrel withdrawal.
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