Early dual antiplatelet therapy versus acetylsalicylic acid monotherapy after CABG: propensity score analysis addressing survival and safety outcomes

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Funding Acknowledgement: Type of funding source: Public grant(s) – EU funding. Main funding source(s): Universidade do Porto/FMUP, FSE-Fundo Social Europeu, NORTE 2020-Programa Operacional Regional do Norte, Programas Doutorais. Project NetDIAMOND, supported by ESIF under Lisbon Portugal Regional Operational Programme and National Funds through FCT

Background: There is currently conflicting evidence regarding the security profile and outcomes of dual antiplatelet therapy (DAPT) in patients following coronary artery bypass grafting (CABG).

Aim: We aim to compare the effect of early DAPT in short and long-term survival versus acetylsalicylic acid in a monotherapy regimen (ASA). Therapy's safety was evaluated through immediate or early postoperative outcomes, with particular emphasis on the haemorrhagic.

Methods: Single-centre retrospective cohort study on consecutive patients undergoing 1st isolated CABG surgery in 2010. Median follow-up time was 9 years. Pre-, peri- and postoperative data was collected through clinical files and digital databases. The DAPT and ASA groups were defined considering the administration of clopidogrel plus acetylsalicylic acid and only acetylsalicylic acid, respectively, within a 24h window after CABG. T-tests and Pearson's chi-squared tests were used for group comparison. Survival analysis was performed using Kaplan-Meier curves, Log-Rank test and multivariable Cox regression. Propensity scores (PS) were estimated using a multivariable logistic regression model and included in multivariable regressions as a covariate along with DAPT. Early mortality was defined if occurred before discharge or within the 30 days following the surgery; bleeding was assessed through red blood cells' (RBC) transfusion, re-exploration of thorax and drainage.

Results: We included 351 patients, 81% were male, and DAPT was performed in 251 patients (72%). DAPT patients were younger (63±10 vs. 66±10 years, p=0.007) but both groups were similar regarding the cardiovascular modifiable risk factors. Kaplan-Meier curves showed similar cumulative survival between groups (75% in DAPT vs. 67% in ASA group, at 9 years of follow-up, Log-rank p=0.103), as well as the PS adjusted analysis (HR DAPT: 0.93, 95% CI: 0.57–1.51). Regarding safety outcomes, we found no differences in early mortality (two cases in the DAPT group and one in the ASA group). Total median cell-saver transfusion (300mL vs. 250mL, p=0.318) and the re-exploration of thorax due to bleeding (1.6% vs. 4% p=0.231) showed no statistical significance either. On the other hand, post-operative total median chest tube drainage was higher in the ASA group (1220mL in DAPT vs. 1300mL in ASA, p=0.043). There was also a lower frequency of DAPT patients requiring 3 or more peri and post-operative RBC transfusions (8.5% vs. 13.3% $p<0.001$ and 4.8% vs. 13%, p=0.009, respectively) and a shorter in-hospital stay following CABG (median of 7 days for DAPT and 8 days for ASA, $P<0.001$). Redo-CABG was performed in 3 patients (2 DAPT vs. 1 ASA) during follow-up.

Conclusion: Compared with ASA, DAPT showed a non-significant impact on long-term survival but demonstrated to be a safe option within the assessed bleeding outcomes. Further studies are needed to provide recommendations on the therapeutical strategy following CABG.