INCIDENCE, CLINICAL IMPACT AND PREDICTORS OF THROMBOCYTOPENIA AFTER AORTIC VALVE REPLACEMENT WITH TRANSCATHETER OR SUTURELESS HEART VALVES


Background: Thrombocytopenia is a poorly understood complication after surgical (mechanical or biological) (SAVR) and transcatheter aortic valve replacement (TAVR). The etiology of this platelet count decrease remains unknown. A higher incidence of thrombocytopenia has been associated with sutureless-SAVR (S-SAVR) and transcatheter balloon-expandable valves (BEV) compared to stented and self-expandable valves (SEV), respectively. However, its clinical impact, and furthermore the best cut-off point to predict clinical outcomes has not been elucidated.

Objectives: The objective of this study therefore was to analyze the incidence, clinical impact and predictors of thrombocytopenia in patients undergoing transcatheter (TAVR) or S-SAVR replacement.

Methods: Consecutive patients (n=760) with severe aortic stenosis undergoing TAVR (n=679) or S-SAVR (n=81) in a single center between September 2007 and September 2018, and who did not have baseline thrombocytopenia, were included. Patients were classified according to the nadir platelet count, and the time-to-nadir: early nadir (<4 days) or late nadir (greater than or equal to 4 days) post procedure. Receiver Operating Characteristic (ROC) curves for early (30-day or in-hospital) mortality were performed using nadir platelet count and percentage decrease in platelet count. Mid-term mortality was defined at 2-years. Clinical outcomes were defined according to Valve Academy Research Consortium (VARC-2) criteria.

Results: The median percentage decrease in platelet count was 37.8% [IQR: 28.8–48.4], resulting in moderate (<100*10⁹/L) and severe (<50*10⁹/L) thrombocytopenia in 28.8% and 4.2% of patients, respectively. BEV had a lower incidence of moderate-severe thrombocytopenia (27.6%) compared with SEV (37.7%, p=0.008) and S-SAVR (51.9%, p<0.001), Percentage decrease in platelet count showed a greater area under the curve by ROC analysis than absolute platelet nadir for predicting early mortality with the optimal cut off for percentage platelet decrease being greater than or equal to 46% (sensitivity: 79.0% and specificity: 70.6%). Percentage decrease in platelet count greater than or equal to 46% predicted early mortality with an odds-ratio of 4.8 (95%CI: 2.0–11.5). Late nadir platelet was also an independent predictor of early mortality (OR: 4.6, 95%CI 2.1–10.0). The combination of both factors (greater than or equal to 46% and greater than or equal to 4 day) predicted higher 2-year mortality (51.6%) compared to an early significant nadir (greater than or equal to 46% and <4 day, 24.0%) and non-significant nadir (<46%, 20.2%), p<0.001 for both comparisons.

Conclusions: Moderate-to-severe thrombocytopenia occurred in approximately one third of patients after TAVR or S-SAVR. Percentage decrease in platelet count best predicted short-term clinical outcomes. Only late and significant platelet decrease was associated with mid-term mortality.

LONG TERM OUTCOMES AFTER DEFERRAL OF REVASCULARIZATION FOR INSTANT RESTENOSIS USING PHYSIOLOGICAL ASSESSMENT

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Background: Instant restenosis (ISR) remains a significant clinical problem. Both bare metal (BMS) and drug eluting stents (DES) can present with ISR, with rates of up to 30% for BMS and 12% for second generation DES on routine angiographic surveillance being reported. Current guidelines recommend repeat stenting or the use of drug coated balloons however, treatments can result in multiple stent layers and recurrent stenosis are not uncommon. While abundant data exists on the deferral of non-significant stenosis in native coronary arteries after physiological assessment, there is a paucity of data on the safety of deferral of ISR after physiological assessment.

Objectives: To investigate the outcomes of deferred revascularization in patients with non-significant in-stent restenosis (ISR) by physiological assessment.

Methods: A propensity-score matched analysis of patients with ISR and native artery disease deferred based on physiological evaluation was performed. Matching was on a 1:2 basis of ISR to native artery disease and data were collected retrospectively. The primary end point was a composite of major adverse cardiovascular events (MACE) including: all-cause mortality, target lesion revascularisation (TLR) or target vessel MI (TVMI) at 36 months in the ISR group versus the matched comparator group.

Results: A matched cohort of 68 ISR and 136 native artery stenosis were analyzed. The mean percentage stenosis was 53.46 and 54.60% in the ISR and native artery groups respectively (p=0.363). Most restenosis was within the body of the stent, and of Mehran classification 1C (30 cases, 46.16%). No significant differences were found between groups regarding the artery interrogated: the left anterior descending artery was most frequently assessed in both groups accounting for approximately half of all physiological