Management and Outcomes of Spontaneous Coronary Artery Dissection in Christchurch
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Background: Spontaneous Coronary Artery Dissection (SCAD) is an uncommon presentation of acute coronary syndrome. Awareness of this condition has grown over recent years. The optimal management and prognosis remains unknown.

Method: We reviewed hospital records of all patients with angiographically confirmed SCAD in Christchurch since August 2011.

Results: 103 SCAD patients (86% female, median age 54) presented with NSTEMI (63%), STEMI (29%), cardiac arrest (5%), angina (2%) or stroke (1%). The commonest culprit was the LAD (44%), with left main involved in 1% and multiple vessels in 5%. Initial management was conservative in 85% and percutaneous coronary intervention (PCI) in 15%, with 67% procedural success. 85% of patients were prescribed dual anti-platelet therapy, including 94% of those with PCI. Beta-blockers were prescribed in 76%. Further in-hospital myocardial infarct (MI) occurred in 5% of patients with unplanned revascularisation in 3% (including CABG in 2%). Over median follow-up of 1.8 years, 16% of patients had recurrent MI, including 9% with complications of the index event, and 7% recurrent SCAD in a different vessel (median 2.5 years since index presentation). There was a trend towards increased in-hospital MI, unplanned revascularisation and recurrent MI in those treated with PCI however this was not statistically significant (p-value 0.21, 0.08 and 0.47 respectively). 3 patients died, one by intracranial haemorrhage during index presentation and the others non-cardiac.

Conclusion: The majority of our SCAD cohort were managed conservatively with relatively few major in-hospital adverse events. However, recurrent SCAD is not rare and further research is needed to identify those at highest risk.

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Measurement Variability in TAVI Annulus and Coronary Ostia Analysis
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Background: Obtaining accurate annular and coronary ostia measurements are vital in peri-procedural TAVI decision making and TAVI outcomes. Pre-operative planning software allows operators to analyse cardiac CT data in 3-dimension to ensure accurate assessment. We have noted a degree of operator variability when measuring aortic annular and coronary ostia heights (13.4 ± 3.3 VS 12.8 ± 3.4, p = 0.7). How-ever, there were five instances where the valve size decision was changed following a second measurement which crossed one of the cut-offs.

Results: There was no significant difference in the measurement of annulus areas (457 ± 93 VS 439 ± 96, p = 0.43), left coronary ostia heights (13.4 ± 3.3 VS 12.8 ± 3.4, p = 0.8) or right coronary ostia heights (16.2 ± 3.5 VS 15.9 ± 3.3, p = 0.7). However, there were five instances where the valve size decision was changed following a second measurement which crossed one of the cut-offs.

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Conclusion: In our retrospective observational study of TAVI measurement variability, we found that there was no significant difference in the measurement variability of annular area or coronary heights between TAVI operators or our experienced radiographers. However, clinical decision making was altered on five occasions with changes in valve sizing due to minor measurement variability.

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655 Mechanical Circulatory Support for Semi–elective PCI in High-risk Patients with Extracorporeal Membranous Oxygenation (ECMO) Compared to Impella Heart Pump Device

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Background: Impella and Veno-Arterial extracorporeal membranous oxygenation (VA-ECMO) provide consistent augmentation of cardiac output, which can alleviate haemodynamic fluctuations during high-risk PCI. Paucity of data Australian exists.

Methods: We retrospectively analysed (January 2010-January 2019) Liverpool Cardiac Catheterisation and ICU database for consecutive patients receiving Impella or VA-ECMO support for semi-urgent high-risk PCI (non-shock).

Results: 20 patients received VA-ECMO (3 with adjunctive IABP) and 16 IMPELLA for non–operable (heart team) high risk PCI. VA – ECMO group mean age 70.8 ± 14.6 years (44-82). All with severe LV dysfunction and MVD (4 severe LM ischemia + MVD post-STEMI). All had general anaesthesia and ICU admission [LOS 9.5 ± days (24 –1)] and surgical cannulation. VA-ECMO dwell time 18.2 ± 8.8 hours (3-24 hours). 6 access site complications [1 minor bleed, 5 major bleed (4 femoral, 1 axillary), 2 limb ischemia (1 amputation).

IMPELLA patients mean age 66.5 ± 14 years (92 –51). Severe LV dysfunction in 77.8%, MVD (4 severe LM ischemia + MVD post NSTEMI). Majority non- GA sedation (88%). Impella removed immediately post procedure. 2 cases required ICU (ICU LOS 0.5 –1.3 days). 6 access site complications [3 minor (2) major bleeds, (1) limb ischemia requiring OT].

Impella was associated with reduced post-PCI and ICU LOS compared to VA – ECMO. Post PCI LOS 7 ± 8.4 days, median 4 days vs VAECMO mean15 ± 7.7 days, median 13 days (p value = 0.04). All PCI cases were successful with a 0% mortality and complete recanalisation.

Conclusions: VA-ECMO and Impella support for high-risk PCI (complex anatomy/non-operable/poor LV function) achieves excellent results. VA ECMO is resource intensive with high access-site complications. IMPELLA associated with significantly reduced ICU admissions, and reduced post PCI length of stay.

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Multi-vessel Coronary Artery Disease in STEMI: Prevalence, Management and Impact on Length of Stay

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Background: St George Hospital is a tertiary facility located in Southern Sydney offering 24/7 PCI for STEMIa. The prevalence of multi-vessel coronary disease (MVD) in STEMI is significant and the decision to treat non-culprit (NC) arteries during the index procedure, as a staged procedure or to not treat at all is contentious. The aim of this study was to assess the prevalence of MVD during STEMI, interrogate the management and look at the overall length of stay.

Methods: Data was retrospectively collected from consecutive patients presenting with STEMI in 2017 and 2018. Demographic, procedural and outcome data was recorded.

Results: There were 190 STEMI during the study period. 107 (56%) patients had MVD. Of this 22 (20%) had NC PCI during the index procedure, 28 (26%) had NC PCI as an inpatient, 27 (25%) had NC PCI as an outpatient, 17 (16%) had inpatient CABG, 4 (3.5%) were referred for outpatient CABG and 22 (21%) were medically managed. Excluding 2 extreme outliers, the average length of stay for those who had NC PCI during the index procedure was 5.08 days and as an inpatient was 7.5 days.

Conclusions: MVD is common during STEMI. Patients who received NC PCI during the index procedure had an overall shorter length of stay compared to those who had NC PCI as an inpatient.

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Non-adherence to Anti-platelet Therapy Increases Long-term Mortality After Percutaneous Coronary Intervention; 5-year Outcomes from the GenesisCare Cardiovascular Outcomes Registry (GCOR)

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Introduction: Secondary prevention therapies including dual anti-platelet therapy (DAPT) are recommended after percutaneous coronary intervention (PCI). However, long-term outcomes of patients who cease anti-platelet medication are unknown.

Methods: Patients discharged on evidence-based medications were stratified into those continuing DAPT or anti-platelet monotherapy (MAPT), or no anti-platelet therapy at 2 years. We assessed the association of DAPT and MAPT adherence with 5-year all-cause mortality adjusted for baseline clinical and lesion characteristics,