Abstracts

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Aortic Valve Replacement
Improved Endothelial Function Following

Patients with Aortic Stenosis Exhibit Early Improved Endothelial Function Following Aortic Valve Replacement
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Background: Patients with severe aortic stenosis (AS) have impaired coronary flow reserve (CFR), resulting in myocardial ischaemia in absence of obstructive coronary disease. Endothelial dysfunction (ED) contributes towards impaired CFR in patients with AS, although it remains unknown whether endothelial function recovers following valve replacement. It is also unclear whether any hypothesised improvement immediately as consequence of arterial haemodynamics or more long-term.

Methods: Patients with severe AS undergoing transcatheter and surgical valve replacement had assessment of endothelial-independent and dependent flow-mediated dilation (FMD) via ultrasound and EndoPAT2000. Measurements were performed prior to, 24 hrs and 28 days after valve replacement. Intraobserver FMD reproducibility was excellent (intraclass correlation coefficient 0.96).

Results: To date, 8 out of 40 patients have been recruited into the trial (75% male). Seven (87.5%) patients underwent transcatheter valve replacement. FMD was successfully performed in all patients pre- and immediately post-procedure, while EndoPAT measurements were possible in 75% of patients. FMD significantly increased from 5.8% (pre-) to 11.6% post-procedure (p = 0.01). Although a similar trend was observed for EndoPAT measures (pre=2.00 vs. post=2.36), this did not reach statistical significance (p > 0.05). FMD follow-up data at 28 days was available for 2 patients and demonstrated that the improvement was sustained (8.5%). We anticipate complete data will be available by time of presentation.

Conclusion: Our preliminary data shows that endothelial function in patients with AS improves quickly after valve replacement, likely as a result of improved arterial haemodynamics. This improvement may result in restoration of CFR and alleviate myocardial ischaemia.

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Percutaneous Coronary Intervention Outcomes Following Out-of-Hospital Cardiac Arrest For Patients With and Without ST-Elevation Myocardial Infarction
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Background: Outcomes after out-of-hospital cardiac arrest (OHCA) remain poor, and percutaneous coronary intervention (PCI) may have prognostic benefit in patients with a culprit coronary lesion. We aimed to describe outcomes among patients undergoing PCI following OHCA and the effect of ST-elevation myocardial infarction on outcome.

Methods: Data were prospectively collected on 1,047 consecutive PCI procedures following OHCA at six Victorian public hospitals from 2005 to 2017. Patients were divided into those with STEMI (OHCA-STEMI) and those without (OHCA-NonSTEMI). Outcomes were compared against patients with STEMI only without OHCA (n = 9,694).

Results: OHCA-STEMI patients were younger and the treated lesion was more commonly occluded at time of PCI (63% vs 22%, p<0.001). GP-IIb/IIIa antagonists, thrombus aspiration and intra-aortic balloon pump insertion were more frequently used for OHCA-STEMI (p<0.001). Cardiogenic shock (CS) was present in 47% of OHCA-STEMI and 29% of OHCA-
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Beyond 30-days, long-term outcomes are similar to uncomplicated STEMI cohorts. 93

Conclusions: At our centre, MitraClip implantation was carried out with high procedural success and low complication rates. There was successful post-procedural reduction of MR severity and sustained improvements in NYHA class at 12 months.

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Pericardiocentesis for Pericardial Effusion – a Single Centre Experience

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Background: Diagnostic and therapeutic drainage of pericardial effusions can be performed percutaneously or surgically.

Methods: A retrospective audit was performed for consecutive patients who underwent pericardiocentesis at Liverpool hospital from February 2018-January 2019 using the hospital electronic medical record.

Results: 34 patients required drainage of pericardial effusions. Mean age was 60.8±19.4 years (55% male). 25/34 (74%) were performed percutaneously by Cardiology AT performing the majority of cases (17/25). All were echocardiographic-assisted. 47% were performed after-hours. Mean effusion-maximal diameter was 2.77 cm±1.02 cm. 85% had echocardiographic features of tamponade and 71% had clinical features of tamponade. 33 (37%) were malignant, 9 (25%) iatrogenic (44% post-cardiothoracic surgery) and 4 (11%) were inflammatory. 11% took aspirin,17% DAPT and 26% were anticoagulated. Most common approach was subcostal (68%). Mean total drainage output was 770.8±460 ml, average dwell time 54.7 h±31.4 h. 4/25 had fluid re-accumulation managed with surgical pericardial window. Complications occurred in 2/25 cases [1 RV needle perforation successfully surgically repaired, 1 death from cardiac arrest from pacing wire perforation]. 9/34 (26%) had initial surgical management and were more likely to be loculated and posterior or post-surgical with suspected clot tamponade. There was 1 failed drainage and 1 death in the surgical group. Surgical management was associated with an increased ICU-stay (mean 2.7±4.5 days) compared to nonsurgical (0 days).

Conclusion: Percutaneous pericardiocentesis is a successful approach to draining pericardial effusions. Complications are rare and commonly successfully surgically managed.

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