**Results**

There were 245 CABG patients, of whom 20.4% met criteria for UDMI PPMI and 87.6% for SCAI UDMI. The diagnosis of UDMI PPMI was independently associated with one year mortality (hazard ratio 4.175 [95% confidence interval 1.281–13.608]), whereas there was no association between SCAI PPMI and one year mortality (figure 1). Of the 243 patients who had non CABG cardiac surgery, 11.4% met criteria for UDMI PPMI and 85.2% for SCAI PPMI but neither was associated with one year mortality.

**Conclusions**

The incidence of SCAI PPMI in a real world cohort of cardiac surgery patients is so high as to be of limited clinical value. By contrast, a diagnosis of UDMI PPMI post CABG is independently associated with one year mortality, so may have clinical utility.

**Conflict of Interest**

Beckman Coulter provided the assays used in my research but had no other role in the studies.

**Abstract 38**

**Identifying Predictive Risk Factors for Permanent Pacemaker Implantation up to 30 Days Post-TAVI**

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**Introduction**

Conduction system abnormalities, including AV block, are amongst the most common complications of transcatheter aortic valve implantation (TAVI). Post-TAVI high degree AV block necessitates permanent pacemaker (PPM) implantation.

**Purpose**

To assess the ability of standardly available pre-, intra- and post-TAVI factors to predict PPM implantation within 30 days post procedure.

**Methods**

Demographic and clinical (pre-, intra- and post-procedural) data including ECG parameters were collected from all patients who underwent TAVI at our centre from August 2017 to November 2020. Patients with pre-existing PPM were excluded from the study. Predictive factors were selected through univariate analysis, and selected characteristics were incorporated into a multivariate binomial logistic regression model, in order to create a 30-day PPM risk-prediction model. The Akaike information criterion (AIC) and area under receiver operating curve (AUC/C-statistic) were used to assess discriminative performance.

**Results**

In total, data from a total of 446 patients were analysed. Of these, 40 (8.97%) received PPM implantation within 30 days of the procedure. The mean age of the patients was 81.5 (±7.3 SD) years; 99 (22.2%) had pre-existing first degree AV block, 55 (12.3%) had pre-existing left bundle branch block (LBBB) and 50 (11.2%) had pre-existing right bundle branch block (RBBB). Intra-procedurally 40 (9.0%) developed LBBB, 21 (4.7%) developed 3rd degree AV block, and 95 (21.3%) patients required temporary pacing wire (TPW) pacing. Post-procedurally, 138 (30.9%) exhibited AV block, 107 (24.0%) LBBB and 50 (11.2%) RBBB. The following factors met significance at multivariate logistic regression analysis: pre-TAVI RBBB (OR 6.62 [95% CI, 1.37-36.51]), intra-TAVI 3rd degree AV block (OR 12.80 [95% CI, 3.44-53.34]), intra-TAVI LBBB (OR 4.02 [95% CI, 1.28-12.53]), use of TPW pacing (OR 8.58 [95% CI, 3.19-25.12]) and post-TAVI LBBB (OR 7.84 [95% CI, 2.75-24.46]) (table 1). Finally, variables were incorporated into a multivariate logistic regression model with the outcome variable of 30-day PPM implantation (figure 1). A model incorporating five factors (pre-TAVI RBBB, intra-TAVI 3rd degree AV block, intra-TAVI LBBB, use of TPW pacing and post-TAVI LBBB) demonstrated excellent discriminative ability (accuracy 0.925 and an AUC of 0.952) at predicting PPM implantation (figure 2).

**Conclusions**

Following variable selection, the best performing model incorporated five factors including pre-TAVI RBBB, intra-TAVI AV block (3rd degree), intra-TAVI LBBB, use of TPW pacing and post-TAVI LBBB.
Introduction
Valve-in-valve transcatheter aortic valve implantation (V-in-V TAVI) has become an increasingly popular alternative to re-do surgery for patients with failing aortic bioprosthetic valves. The Trifecta aortic valve replacement (AVR), designed for supra-annular insertion, consists of a titanium stent with externally mounted leaflets fashioned from bovine pericardium. Several studies have reported premature structural degeneration of the Trifecta valve. There are currently few data regarding the feasibility & efficacy of V-in-V TAVI within Trifecta bioprostheses.

Methods
This represents a retrospective review of prospectively collected data at our centre for TAVI procedures performed between January 1st 2015 and December 31st 2020 inclusive. In cases of V-in-V TAVI to treat a failing Trifecta valve, we collected demographic, procedural, echocardiographic and short-term follow-up data from electronic records systems for both this NHS Trust and primary care.

Results
Over a 6-year period, we performed 549 TAVI procedures, of which 51 (9.3%) were V-in-V cases. Of these 51, 15 (29%) were for patients with failing Trifecta valves (9 female, mean age 80.9 ± 5.6yrs; predominant stenosis in 5 & trans-valvular regurgitation in 10). Figures 1 & 2 demonstrate examples of prosthesis stenosis & prosthesis regurgitation treated by V-in-V TAVI. The median time from original AVR to V-in-V TAVI procedure was 59 months (IQR 36.5, range 16–93 months). All procedures were performed via the transfemoral route and 13/15 under conscious sedation. A balloon-expandable TAVI valve was used in 14 patients & a self-expanding valve in 1 patient. Post-procedural echocardiography revealed a mean aortic peak velocity 2.9 ± 0.4m/s & mean aortic gradient 19 ± 5mmHg. Paravalvular aortic regurgitation was absent in 7 cases, trivial in 6 & mild in 2