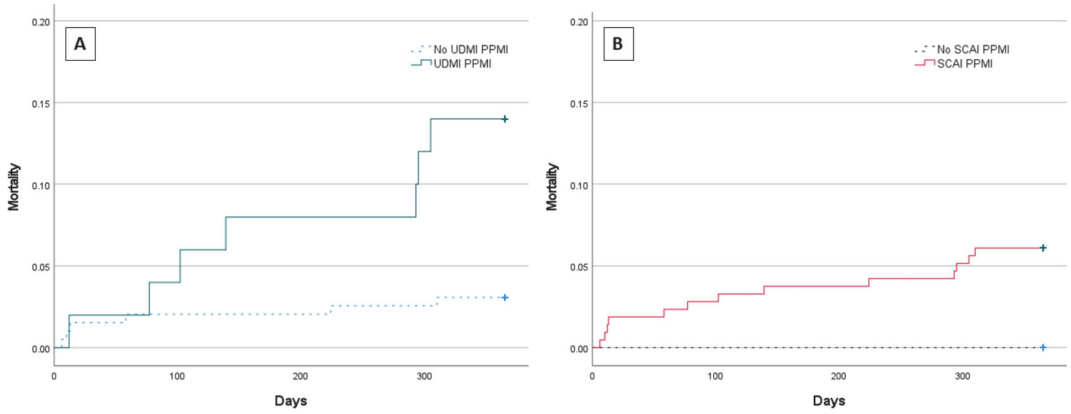

Abstract 37 Figure 1 Kaplan Meier curves of one year mortality for PPMI; Panel A UDMI PPMI (p=0.002 (log-rank)); Panal B SCAI PPMI (p=0.156 (log-rank))

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

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.

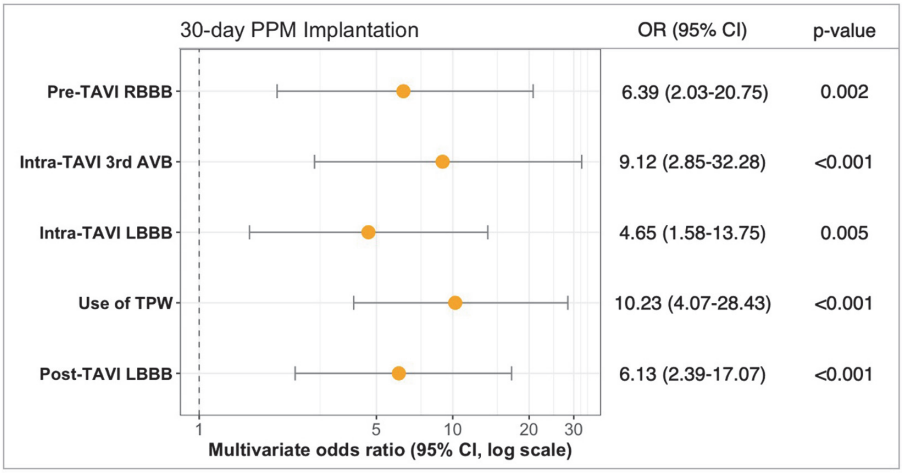
Results In total, data from a total of 446 patients were analysed. Of these, 40 (8.97%) received PPM implantation within 30 days of the procedure. The mean age of the patients was 81.5 (±7.3 SD) years; 99 (22.2%) had pre-existing first degree AV block, 55 (12.3%) had pre-existing left bundle branch block (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

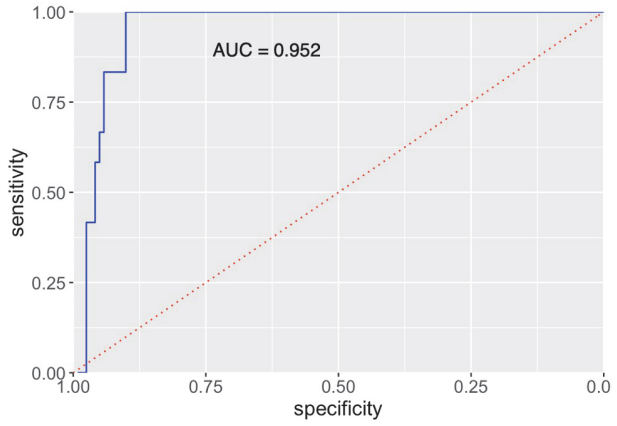
Abstract 38 Table 1

Patient factor	Univariate OR (95% CI)	Multivariate OR (95% CI)
Age	1.04 (0.99-1.10)	0.97 (0.91-1.04)
Sex (Male)	0.87 (0.45-1.68)	1.26 (0.51-3.27)
Pre-TAVI LBBB	1.02 (0.34-2.51)	0.63 (0.15-2.22)
Pre-TAVI RBBB	5.53 (2.61-11.44)**	6.62 (1.37-36.51)*
Intra-TAVI AV block (1st degree)	6.99 (2.26-20.03)**	2.36 (0.58-9.22)
Intra-TAVI AV block (2nd degree)	5.29 (0.72-28.03)	5.86 (0.54-55.66)
Intra-TAVI AV block (3rd degree)	30.69 (11.75-87.37)**	12.80 (3.44-53.34)**
Intra-TAVI LBBB	4.93 (2.17-10.68)**	4.02 (1.28-12.53)*
Use of TPW	26.16 (11.70-66.85)**	8.58 (3.19-25.12)**
Post-TAVI LBBB	3.67 (1.88-7.15)**	7.84 (2.75-24.46)**
Post-TAVI RBBB	3.14 (1.37-6.72)*	0.93 (0.17-4.56)

OR, odds ratio; CI, confidence interval. *NB: age is a continuous variable, OR reflects the effect of each additional 1 year. *p<0.05, **p<0.001*



Abstract 38 Figure 1



Abstract 38 Figure 2

TPW pacing and post-TAVI LBBB. We aim to validate this model using an external cohort.

Conflict of Interest None

39 VALVE-IN-VALVE TRANSCATHETER AORTIC VALVE IMPLANTATION IN TRIFECTA AORTIC BIOPROSTHESES – A SINGLE CENTRE EXPERIENCE

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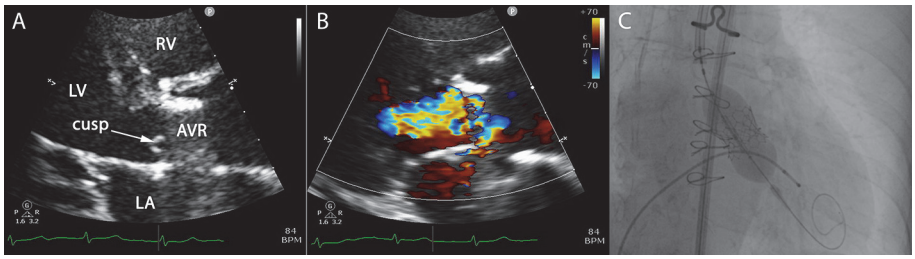
Introduction Valve-in-valve transcatheter aortic valve implantation (V-in-V TAVI) has become an increasingly popular alternative to re-do surgery for patients with failing aortic bioprosthetic valves. The Trifecta aortic valve replacement (AVR), designed for supra-annular insertion, consists of a titanium 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 & transvalvular 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



Abstract 39 Figure 1