122 COMPARING DIPEPTIDYL PEPTIDASE-4 INHIBITORS AND SODIUM-GLUCOSE COTRANSPORTER-2 INHIBITORS ON NEW-ONSET HEART FAILURE AND MYOCARDIAL INFARCTION

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Introduction Sodium-glucose cotransporter-2 inhibitors (SGLT2I) and dipeptidyl-peptidase-4 inhibitors (DPP4I) are increasingly prescribed for type 2 diabetes mellitus patients. However, there are few population-based studies comparing their effects on incident heart failure (HF) or acute myocardial infarction (AMI). Therefore, the present study aims to compare the occurrence of major cardiovascular adverse events in SGLT2I and DPP4I users to evaluate their cardiovascular protective effects in a Chinese population.

Methods This was a population-based retrospective cohort study using the electronic health record database in Hong Kong, including type 2 diabetes mellitus patients receiving either SGLT2I or DPP4I between January 1st, 2015 to December 31st, 2020. Propensity-score matching was performed in a 1:2 ratio based on demographics, past comorbidities and medications using nearest-neighbor matching. Multivariate Cox regression analysis were used to identify significant predictors for new-onset HF or AMI, cardiovascular and all-cause mortality.

Results A total of 48875 and 49508 patients were included in the HF and AMI cohorts, respectively. After propensity score matching, SGLT2I use was associated with a lower risk of new-onset HF (HR: 0.41[0.27, 0.62], P<0.0001) and MI (HR: 0.52, 95% CI: [0.36, 0.77], P=0.0009) in multivariable Cox models adjusted for demographics and past comorbidities compared to DPP4I use. SGLT2I users also had lower risks of all-cause and cardiovascular mortality (HR<1, P<0.001).

Conclusions SGLT2 inhibitors are protective against adverse cardiovascular events including new-onset HF, MI, cardiovascular and all-cause mortality. The prescription of antidiabetic agents should be personalized, taking into consideration individual cardiovascular and metabolic risk profiles in addition to drug-drug interactions.

Conflict of Interest None

123 CORONARY IMAGING OF CARDIAC ALLOGRAFT VASCULOPATHY PREDICTS CURRENT AND FUTURE DETERIORATION OF LEFT VENTRICULAR DYSFUNCTION IN PATIENTS WITH ORTHOTOPIC HEART TRANSPLANTATION

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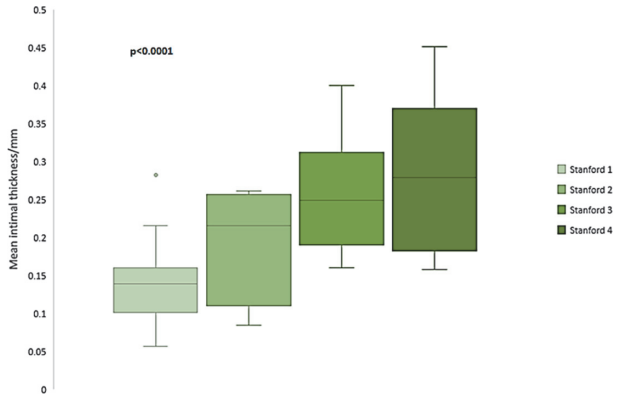
Background Cardiac allograft vasculopathy (CAV) is the leading cause of morbidity and mortality in heart transplant patients beyond the first post-transplant year, accounting for approximately 30% of all-cause mortality in this patient group. The incidence of CAV is 47% at 10 years post-transplant, though it can occur within the first year. Early detection of CAV is vitally important as modifications to medical therapy may slow progression of CAV and thus prevent downstream graft dysfunction. Intravascular Ultrasound (IVUS) and Optical Coherence Tomography (OCT) improve sensitivity of CAV detection compared to invasive coronary angiography (ICA), but the respective ability of each modality to predict downstream clinical events is unknown. Furthermore, whilst OCT has been shown to provide additional information about coronary vascular endothelial properties there is no consensus as to what constitutes 'severe' CAV on OCT, thus limiting its diagnostic utility.We sought to determine:1) The ability of OCT to diagnose CAV compared to IVUS, and determine a set cut-point for diagnosing 'severe' CAV on OCT.2) Whether severe CAV detected with ICA, IVUS or OCT correlates with future clinical events and graft function.

Methods Comparison of specific vessel parameters between IVUS and OCT on 20 patients attending for routine surveillance angiography 12-24 months post-orthotopic heart transplant. Major adverse cardiac events (MACE) and serial left ventricular ejection fraction were recorded prospectively. Comparisons of continuous data were performed using unpaired Student's t-tests and analysis of variance (ANOVA), whilst categorical data were compared using the $\chi 2$ test. A two-tailed probability level of <0.05 was considered significant.

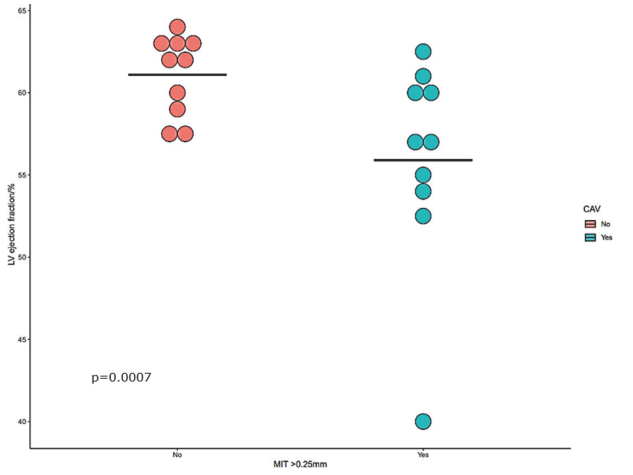
Results Baseline demographic data for the 20 patients are shown in table 1. Analyzing 55 coronary arteries we demonstrate that OCT and IVUS correlated well for vessel CAV characteristics (figure 1), although measured values were

Abstract 123 Table 1 Patient demographics and dinical characteristics. Data presented as mean ± standard deviation or counts (percentage). CCS= Canadian Cardiovascular Society classification for angina, NYHA= New York Heart Association dassification for heart failure symptoms, NICMP= non-ischemic cardiomyopathy, HCM= hypertrophic cardiomyopathy, AC= arrhythmogenic cardiomyopathy, ICMP= ischaemic cardiomyopathy

Variable	N= 20
Age/years	46 ± 14
Male	17 (85)
eGFR/ml min^{-1} m^{-2}	
>60	17 (85)
30-60	3 (15)
<30	0 (0)
CCS Classification	
CCS 0	20 (100)
NYHA Classification	
NYHA I	16 (80)
NYHA II	4 (20)
Donor Age/years	36 ± 14
Ischaemic time/minutes	140.3 ± 31.7
Immunosuppression regime	
Tacrolimus – Mycophenolate	3 (15)
Sirolimus - Mycophenolate	14 (70)
Tacrolimus – Mycophenolate -Prednisolone	2 (10)
Sirolimus – Mycophenolate - Prednisolone	1 (5)
Primary diagnosis	
NICMP	14 (70)
HCM	3 (15)
AC	2 (10)
ICMP	1 (5)



Abstract 123 Figure 1 Box plot showing optical coherence tomography-derived mean intimal thickness of each coronary vessel as a function of intravascular ultrasound-derived Stanford classification. P value relates to the significance of the concordance



Abstract 123 Figure 2 Dot plot showing left ventricular ejection fraction at time of angiography for patients with and without optical coherence tomography-defined coronary allograft vasculopathy (CAV), defined as mean intimai thickness (MIT) >0.25mm. Crossbar represents mean ejection fraction

significantly smaller on OCT: mean intimal thickness (IT) by OCT was 0.21±0.1mm vs 0.44±0.24 mm by IVUS, p <0.001. A mean ITOCT >0.25mm had a sensitivity of 86.7% and specificity of 74.3% at detecting Stanford grade 4 CAV. Those with CAV evident on ICA had significant reduction in graft ejection fraction (EF) over median follow up of 7.3 years (mean ΔEF -3.6% with CAV vs +3.8% without CAV, p=0.04). Patients with mean ITOCT >0.25mm in at least one vessel had a lower EF at time of surveillance (55.9% vs 61.1%, p=0.0007) (figure 2). Only two MACEs were noted.

Conclusion Coronary imaging with OCT correlates well with IVUS for detection of CAV. Mean IT of >0.25mm on OCT detects Stanford grade 4 CAV with reasonable accuracy and may be a useful cut-point for clinical use.Combined angiography and OCT to screen for CAV within 12-24 months of transplant predicts concurrent and future deterioration in left ventricular function, thus may trigger early alterations to clinical management to prevent clinical worsening.

Conflict of Interest none

124 COMPARING THE SAFETY AND FEASIBILITY OF IMPLANTING PULMONARY ARTERY PRESSURE MONITORS VIA THE INTERNAL JUGULAR VEIN COMPARED TO STANDARD FEMORAL VENOUS ACCESS IN PATIENTS WITH PULMONARY ARTERIAL HYPERTENSION

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Aim To review feasibility and safety of implanting pulmonary artery pressure (PAP) monitors via the right femoral vein (RFV) versus the right internal jugular vein (RIJV) in a cohort of patients with pulmonary arterial hypertension (PAH) referred to the National PH centre in Sheffield.

Background The implantation of PAP monitors is currently licenced via the RFV during a standard right heart catheterisation (RHC). Although access via RFV and RIJV for RHC have been shown to be safe, procedures undertaken via the RIJV can be quicker, better tolerated and shown to have a significantly lower risk of complication than those via the RFV, and can reduce length of stay by facilitating same day discharge.

Methods From January 2020 to March 2021, 15 PAP monitors were implanted in patients with WHO-FC III PAH and a hospital admission within the past year as part of the FIT-PH study (Feasibility of novel clinical Trial infrastructure, design and technology for early phase studies in patients with Pulmonary Hypertension) (19/YH/0354). Catheter lab reports, radiology records and clinical records were reviewed to compare safety and screening/procedure time and radiation dose of RFV and RIJV access.. Implants were performed by an interventional-trained consultant cardiologist with experience in heart failure and PH.

Results 8 implants were undertaken via RFV access and 7 via RIJV. Demographics and background therapy were well matched between groups. No procedure or device-related complications were identified. Screening time for RFV procedures: 22mins 5secs ±13.2 compared to RIJV procedures: 8mins ±4 (p value 0.0155) and RFV radiation dose: 22.5 GYCM2 ±20.6 compared to RIJV: 18.5GYCM2 ±16 (p value NS).DiscussionPatients with PAP sensors implanted via the RIJV had a significantly reduced screening time and a reduced radiation dose although this was non-significant. RIJV procedures were well tolerated and quicker procedures. RIJV implantation also facilitated same day discharge potentially reducing costs.

Conclusion The implantation of PAP monitors via the RIJV in patients with patients was found to be a safe and feasible alternative to RFV access in patients with PAH. Significantly reduced procedure times with RIJV procedures facilitated early and safe discharge.

Conflict of Interest none

125 CARDIAC METABOLIC FLEXIBILITY AND MYOCARDIAL SUBSTRATE UTILISATION IN RESPONSE TO PHARMACOLOGICAL STRESS IN TYPE 2 DIABETES

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