Abstract 25 Table 2

Variable	Total population	Cardiac	Non-cardiac	p value
Days between PCI and readmission average in days (SD days)	11.6 (8.1)	10.8 (8.1)	12.2 (8.1)	0.09
Length of stay average in days (SD days)	5.3 (12.4)	4.0 (6.7)	6.4 (15.9)	0.08
Angiogram (%)	61 (14.4)	54 (31.8)	7 (2.9)	<0.01
Echocardiogram (%)	28 (6.6)	20 (11.8)	8 (3.3)	<0.01
Cardiologist review (%)	167 (39.3)	127 (74.7)	40 (16.6)	<0.01
Cardiac diagnosis (%)	170 (41.4)			
Discharged home (%)	392 (92.2)	159 (93.5)	233 (96.7)	0.27
Died at twelve months (%)	7 (1.7)	5 (2.9)	2 (0.8)	0.29

Conclusion Cardiac readmission's continue to occur after 10% of percutaneous coronary intervention procedures. Whilst the prognosis is good, measures to reduce these rates are required.

26 CLINICAL OUTCOMES FOLLOWING PRIMARY PERCUTANEOUS CORONARY INTERVENTION: A COMPARISON OF CLOPIDOGREL, PRASUGREL AND TICAGRELOR

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Introduction The West Yorkshire Primary Percutaneous Coronary Intervention outcomes study was established to identify factors that are associated with clinical outcomes following primary percutaneous coronary intervention (PPCI) for ST-segment elevation myocardial infarction (STEMI). We assessed the association of procedural oral P2Y12-inhibitor with clinical outcomes in a large consecutive patient-series.

Methods Demographic and procedural data for all patients undergoing PPCI between 1-1-2009 and 31-12-2011, and 1-1-2013 and 31-12-2013, in Leeds General Infirmary, were collected prospectively. Minimum 30 day follow-up data were collected for all. Patients with pre-procedural cardiogenic shock and/or cardiac arrest were excluded. Clinical endpoints were 30 day major adverse cardiovascular event (MACE) – defined as all-cause mortality, myocardial infarction (MI) and repeat coronary revascularisation, and 30 day major bleeding (HORIZONS criteria). Multivariable analyses for MACE and major bleeding comparing procedural P2Y12-inhibitors were performed with Cox proportional hazards models, adjusting for major cardiovascular risk factors.

Results 4056 patients underwent PPCI during the study period, 464 of whom were excluded due to pre-procedural cardiogenic shock and/or cardiac arrest. Data for 30 day bleeding and MACE were available for 3381 of 3592 (94.2%) patients. Multivariable analysis showed no significant difference in MACE, mortality or major bleeding between patients pre-treated with clopidogrel (n=1492), prasugrel (n=1152), and ticagrelor (n=737) (Table 1). However, there was a significantly lower probability of 30 day MI with ticagrelor compared to clopidogrel (HR 0.38 (0.17–0.84)). The differences in 30 day MI between prasugrel and clopidogrel (HR 0.59 (0.33–1.04)), and prasugrel and ticagrelor (HR 1.55 (0.67–3.61)), were not statistically significant. There were no statistically significant differences in mortality between clopidogrel and ticagrelor, between prasugrel and ticagrelor, and between ticagrelor and prasugrel following multivariable analysis.

Conclusion This large consecutive real-world series has shown that pre-treatment with ticagrelor was associated with lower probability of 30 day MI compared to clopidogrel, with no overall difference in bleeding, MACE or mortality. There was no significant difference in bleeding, MACE or mortality between ticagrelor and prasugrel, or between prasugrel and clopidogrel.

Abstract 26 Table 1 Comparison of adjusted MACE, mortality, and bleeding at 30 days according to P2Y12-inhibitor.

P2Y12-Inhibitor	MACE n (%) Adjusted HR (95% CI)	Mortality n (%) Adjusted HR (95% CI)	Bleeding n (%) Adjusted HR (95% CI)
Clopidogrel (n=1492)	161 (10.8)	121 (8.1)	114 (7.6)
Ticagrelor (n=737)	70 (9.5) HR 0.84 (0.53–1.32) vs clopidogrel	56 (7.6) HR 1.01 (0.57–1.79) vs clopidogrel	39 (5.3) HR 0.76 (0.41–1.41) vs clopidogrel
Clopidogrel (n=1492)	161 (10.8)	121 (8.1)	114 (7.6)
Prasugrel (n=1152)	61 (5.3) HR 0.82 (0.56–1.20) vs clopidogrel	41 (6.9) HR 0.95 (0.57–1.57) vs clopidogrel	59 (5.1) HR 1.25 (0.83–1.87) vs clopidogrel
Ticagrelor (n=737)	70 (9.5)	56 (7.6)	39 (5.3)
Prasugrel (n=1152)	61 (5.3) HR 0.97 (0.60–1.58) vs ticagrelor	41 (6.9) HR 0.94 (0.50–1.78) vs ticagrelor	59 (5.1) HR 1.64 (0.88–3.05) vs ticagrelor

27 USE OF ROTATIONAL ATHERECTOMY IN PRIMARY PCI FOR ST-ELEVATION MYOCARDIAL INFARCTION- A SINGLE CENTRE 10-YEAR EXPERIENCE

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Introduction Rotational atherectomy (RA) during primary PCI (PPCI) for STEMI is relatively contraindicated because of the perceived increased risk of no-reflow. However, RA PPCI may sometimes be required to restore flow in heavily calcified coronary arteries. Previously only very limited observational data has described the use of RA in PPCI.

Aim We report the clinical and procedural characteristics, and in hospital outcomes, of 21 patients who underwent RA PPCI at our centre between 2006 and 2016,

Methods A retrospective review of the PCI database and medical records.

Results 21 patients (age 78(10) years (mean (SD)), 12 men) underwent RA during PPCI (0.4% of all PPCI). 3 patients had

cardiogenic shock at presentation and 2 had out of hospital cardiac arrest. Hypertension (n=19), smoking history (n=18), hypercholesterolemia (n=16), diabetes (n=6) and chronic kidney disease (n=6 with eGFR<60) were frequently present. Aspirin was given to 20/21 patients and clopidogrel, ticagrelor and prasugrel to 10, 9 and 3 patients respectively. Heparin was used in all patients, glycoprotein (GP) IIBIIIA inhibitor in 10 and bivalirudin in 2.

Radial access was used in 14 and femoral in 7. Initial TIMI flow grade was 0, 1, 2 and 3 in 11, 2, 1 and 7 patients respectively. The target vessel was the RCA in 14, Cx in 4, LMS in 2 and LAD in 1. All were severely calcified with visible thrombus in 13/21. The lesion length was 36(19) mm (range 12–72 mm). The vessel diameter was 2.5–2.99 mm in 5, 3–3.49 mm in 10 and 3.5–4.0 mm in 6. RA was used because of anticipated difficulty with conventional PCI in 7/21 and uncrossable/unexpandable lesions in 14/21. The number of burrs used was 1.33 (0.48) and the final burr was 1.25, 1.5, 1.75 and 2 mm in 4, 11, 4 and 1 patient respectively. The burr-to-artery ratio was <0.4 in 5 and 0.4–0.6 in 16. The final procedure was DES in 17, BMS in 3 and POBA followed by CABG in 1. A temporary pacemaker was used in 3 cases and intra-aortic balloon pump in 3 cases. There were no perforations, no tamponade and no vascular complications.

The median(range) pain-to-PCI time was 180 min (114–544); door-to-PCI time 49 min (21–186, 14 patients <60 min) and procedure time was 119 min (66-175). Procedural difficulty caused door-to-PCI>60 min in 5/7 patients while medical/logistic reasons contributed in the other 2. 1 patient underwent CT scanning prior to PCI; 1 underwent an urgent MDT discussion before PCI. Final flow was TIMI 3 in 19/21 and TIMI 2 in 2/21 cases. The procedure was complicated by 1 event of distal embolization. There was 1 event of peri-procedural cerebral infarction. 20/21 patients survived to hospital discharge.

Conclusions Our study suggests that RA PPCI can be performed safely in a small group of predominantly elderly, complex patients in whom conventional techniques are inadequate or unsuccessful. It is associated with a relatively long procedure time but we did not experience a marked increase in no-reflow.

28 COMPLICATION RATE OF CORONARY ANGIOGRAPHY IN PATIENTS WITH PRIOR CORONARY ARTERY BYPASS GRAFTING

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Background When consenting patients for elective coronary angiography, a risk of major complications such as death, stroke or myocardial infarction is quoted at 1–2 in 1000. However, what is the risk for patients who have had a prior coronary artery bypass graft surgery (CABG)? It is believed to be higher than the basic complication rate due to a lengthier, more complex procedure. We aim to estimate the complication rate in this cohort of patients, and identify factors that increase this risk.

Methods Between April 2008 and August 2016, a cohort of 681 consecutive patients undergoing elective coronary angiography with a history of CABG was collected retrospectively from a district general hospital in London. The primary outcome was Major Adverse Cardiac or Cerebrovascular Events (MACCE-death, stroke, myocardial infarction). Our secondary outcome was vascular complications (pseudoaneurysm, ischaemic limb, retroperitoneal bleed, significant haematoma requiring transfusion). The complication rates were calculated and then a backward logistic regression model constructed to identify the strongest predictor variables.

Results The 681 patient cohort consisted of 566 (83%) male patients and the mean age was 72 years (±9). The majority of cases (626, 92%) were performed transfemorally. The median procedural time was 45mins (IQR: 40–55). The overall MACCE rate was 23 per 1000. Vascular complications were observed at 5.9 per 1000. Using the regression model the single strongest predictor of MACE and vascular complications is procedural time. For every additional 10 min there is a 1.261 fold increase in risk of MACE (95% CI: 1.111–1.596, p=0.042), and a 1.826 fold increase in risk of vascular complications (95% CI: 1.309–2.137, p=0.001).

Conclusion The findings of this study estimates the MACE and vascular complication rates in patients with a previous CABG at 23 per 1000 and 5.9 per 1000 respectively. It demonstrates that procedural time is a strongest predictor of either of these complications.

29 ASSESSING LONG TERM TRANSCATHETER AORTIC VALVE IMPLANTATION (TAVI) FUNCTION BY CLINCAL ECHOCARDIOGRAPHY AT A SINGLE UK TAVI CENTRE

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Background Recent concerns regarding long term transcatheter aortic valve implantation (TAVI) prosthesis failure have been raised. Studies with long term failure outcomes are limited.

Objective A cross sectional study to assess TAVI prosthesis function after more than 5 years implantation.

Method All successful TAVI procedures at a single high volume centre between January 2007 to December 2012 were included. The most recent clinical transthoracic study assessing for prosthetic function performed by accredited cardiac sonographers and physicians were reviewed. The duration of follow up scan was categorised to early (<12 months), medium term (12 to 48 months) and long term (>48 months). Patient mortality data was recorded.

Results 212 TAVI procedures were successfully implanted with follow up ranging from 4 to 9 years. The characteristics are similar to the first generation TAVI population with predominant use of a femoral approach and a self-expanding device. 4 (1.8%) patients died pre-discharge. 30 day mortality was, 3.3%. 1st, 2nd, 3rd, 4th years mortality were 11.9%, 7.0%, 13.9%, 16.9% respectively. Survival at 5 years was 53.3%.

There were fewer patients with follow-up scans beyond 48 months. Cross sectional comparison did not show a change in valve gradient. Mild paravalvular regurgitation was present consistently. There was no evidence of late aortic stenosis or severe AR.

Conclusion The medium to long term 1st generation TAVI valve function is promising, but long term follow up will be difficult due to high mortality in the earlier implantations.