significantly higher in the clinically indicated CXR group (76.9%) rather than the routine CXR group (2.7%) ($p = <0.001$). The therapeutic efficacy was 53.8% for clinically indicated CXRs, whereas the routine CXRs had a therapeutic efficacy of 1.3% ($p = <0.001$). There was a significant association between CXR findings and whether the CXR requested was routine or not ($X^2(1) = 70.07, p <0.001$) and also management changes ($X^2(1) = 45.43, p <0.001$).

Conclusion Routine CXR in patient admitted with STEMI are often unnecessary and may add very little clinical value. On the other hand, selective post-procedural CXRs have a significantly higher diagnostic and therapeutic yield. Our study questions the rationale behind routine CXRs in the care of patients with STEMIs.

Conflict of Interest None to declare

53 THE IMPACT OF FRAILTY ON THE OUTCOMES OF PERCUTANEOUS CORONARY INTERVENTION (PCI) IN THE SETTING OF NON-ST ELEVATION MYOCARDIAL INFARCTION

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Introduction With the increase in longevity, older and frailer patients represent a growing cohort for percutaneous coronary intervention (PCI). Frail patients represent a high risk subset and have been shown to predict adverse outcomes more reliably than age. Evidence suggests that PCI may be useful in those who are at high risk for recurrent events. However, frail patients are under-represented in clinical trials with only "fitter" elderly people being included and therefore not being representative of the real-world elderly population. The decision making on intervention regarding elderly or frail patients presenting with non-ST elevation myocardial infarction (NSTEMI) is therefore difficult. The aim of the study is to evaluate the outcomes of NSTEMI PCI with age and frailty independently.

Method Frailty scoring was done retrospectively using the CSHA Frailty Scale for patients presenting to the trust from Jan'16 to Oct'16 & undergoing PCI for NSTEMI. They were stratified according to age (<80 & ≥ 80 yrs) and frailty - not frail (score of 1-3) & frail (4-6). Outcomes were length of hospital stay, complications and all-cause mortality at 1-year. The association between age and each outcome was examined using Spearman's Rank Correlation; this was also done for frailty.

Result Frailty was assessed in 106 patients with a mean age of 73.5 ± 12 years, 65% were males. 73 (69%) were not frail and 33 (31%) were vulnerable/frail. The RS between age and frailty was 0.41 indicating moderate correlation between the two variables, 20/33 (61%) of the frail group were under 80. Older and frail group both had higher rates of mortality, contrast nephropathy and longer hospital stay. When the entire cohort was analysed using Spearman's, frailty correlated more strongly with mortality ($r=0.41$; $p=0.01$) and length of stay ($r=0.3$; $p=0.04$) than age however, readmission correlated more strongly with age ($r=0.3$; $p=0.02$). The association between both age and frailty with nephropathy & bleeding was not statistically significant nor was the relationship between age and length of stay ($p>0.05$). Readmission was

higher in the frail group but not in the elderly due to non-coronary issues in most.

Conclusion Frail patients, even when younger, have similar outcomes to very old patients, particular with respect to death, kidney damage and subsequent long hospital stay in NSTEMI patients. Additionally, frail score appears to be better predictor for hospital readmission rate compared to age alone. Even in those patient under 80, frailty score appears to predict these with poorer outcomes, suggesting decision based purely on age are invalid.

Conflict of Interest None

54 CHANGING INCIDENCE AND PROCEDURE COMPLEXITY OF CORONARY ARTERY PERFORATIONS. - A 10-YEAR DATASET

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Background Coronary artery perforation (CAP) is a life-threatening complication of percutaneous coronary intervention (PCI). This study aims to identify CAP predictors using contemporary data.

Methods Retrospective cohort study on all PCIs performed at the Queen Elizabeth Hospital, Birmingham between January 2010 and October 2020. Patient demographics, comorbidities, modified Ellis perforation class and perforation treatments were collected. The CAP population was split into two cohorts (1 and 2), representing the first and second 5-year periods in the decade.

Results During a 10-year period, 9,504 PCI procedures were performed with CAP occurring in 66 cases. According to the Ellis criteria, 4.5% of CAPs were type I, 13.6% type II, 45.5% type III, and 34.8% type V. Definitive management included balloon inflation only in 27%, covered stents 20%,

Abstract 54 Table 1

	Cohort 1: (n = 23)	Cohort 2: (n = 43)	Total PCI (n = 9504)
Mean Age and Standard Deviation	69.3 +/- 11.3	70.6 +/- 13.2	64.6 +/- 12.4
Male %	52.2	69.8	72.9
Incidence %	0.55	0.81	0.69
Hypertension %	69.6	65.1	59.5
Hypercholesterolaemia %	69.6	44.2	49.7
Chronic Kidney Disease (CKD) %	0	4.65	1.90
Diabetes %	13.0	28.0	26.9
Acute Coronary Syndrome (ACS) %	87.0	65.1	68.6
CTO %	8.70	25.6	6.06
Use of GP IIb/IIIa Inhibitors %	30.4	16.3	30.0
Intravascular Ultrasound (IVUS) %	13.0	18.6	8.86
Rotablation %	4.35	9.30	3.23
Tamponade %	8.70	25.6	0.24
Hydrophilic wires %	34.8	34.9	15.0
Mortality %	8.70	16.3	2.58

conservative 20%, balloon inflation with heparin reversal 12%, coronary coils 12%, heparin reversal 4.5%, emergency surgery 3%, coil and covered stent 1.5%. Overall mortality within the total perforation cohort was 14%. Emergency pericardiocentesis was required in 13 patients; in this group mortality was 46%. The difference in trends is illustrated in the table 1.

Conclusion The data demonstrates increased incidence of CAP and mortality in the second half of the decade. This may be explained by an increase in CTO, rotablation and IVUS use (surrogates for complex PCI) and an older population with more comorbidities. Cardiac tamponade was associated with a higher mortality in those with CAP.

Conflict of Interest none

55 LONG TERM CLINICAL OUTCOMES FROM USE OF SIROLIMUS COATED BALLOON IN CORONARY INTERVENTION; DATA FROM A REAL-WORLD POPULATION

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Background The use of drug coated balloons (DCBs) in coronary intervention is escalating. There are two drugs of choice for coating either DCBs or drug eluting stents: Paclitaxel or Sirolimus. Most available DCBs are coated with Paclitaxel, due to pre-existing, extensive data that support good clinical outcomes. With drug eluting stents both the literature and hence clinical practice favour Sirolimus over Paclitaxel. This is due the cytostatic properties and wide therapeutic window of Sirolimus. However, there is very limited data on Sirolimus coated balloons (SCBs). We report a long-term follow-up with this relatively new technology from our centre.

Methods A retrospective analysis was conducted on all patients treated with an SCB between March 2018 and October 2020. Follow-up was achieved with clinic visits, telephone calls and admission records. The outcomes measured include cardiac death, target-vessel myocardial-infarction, target lesion revascularisation and MACE (combination of cardiac death, target-vessel MI and TLR).

Results 533 patients (690-lesions) with a mean age of 65.4 (range; 37-90) were treated with an SCB. 79% (n=419) were male, 314 (59%) were in the setting of acute coronary syndrome, 40% (n=211) had diabetes and 60% (n=414) had DCB in de-novo lesions. Small vessels accounted for 59% of cases (n=406). Pre-dilatation was performed in 97% (n=670) of cases. Bailout stenting (with a drug eluting stent) was required in 6.5% lesions (n=45), of which 11 were due to dissections and 34 were due to >50% recoil following DCB use. The mean diameter and length of DCBs were 2.8 mm and 26.3 mm respectively. During a median follow-up of 572 days (IQR: 381 - 868); cardiac death occurred in 15 patients (3%). Target vessel MI was in 4% (n=21, TLR per lesion and per patient were 10% (n=72 and n=55 respectively). The overall MACE rate was 12%. There were no documented cases of acute vessel closure.

Conclusions The results from long term follow-up with this relatively new technology DCB are encouraging with low rates of hard endpoints and acceptable rates of TLR and MACE

despite complex group of patients (59% ACS and 40% diabetics) and lesion subsets (40% restenotic lesions and 59% small vessels). This suggests that SCBs can be used in both restenotic and de novo small vessel lesions with acceptable clinical outcomes. However, in order to further inform clinical practice, more longer-term data on SCBs compared with Paclitaxel coated balloons is needed.

Conflict of Interest None to declare

56 USE OF SIROLIMUS COATED BALLOON IN DE NOVO SMALL VESSEL CORONARY LESIONS; LONG-TERM FOLLOW-UP FROM A SINGLE CENTRE REGISTRY

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Background Drug coated balloons (DCBs) in Europe are mainly used in restenotic lesions as endorsed by the European Society of Cardiology, with a class IA recommendation. However, some of the recent data suggest, it can also be considered in a subset of de novo lesions, especially in small vessels. Most DCBs used are coated with Paclitaxel. There is no data on the efficacy of Sirolimus in DCBs, the drug of choice in drug eluting stents. In this study, we report outcomes from the use of a Sirolimus coated balloon (SCB) in de novo small-vessel coronary lesions, from a single high yield centre.

Methods A retrospective analysis was conducted on all patients treated with an SCB between March 2018 and October 2020. Follow-up was achieved with clinic visits, telephone calls and admission records. The outcomes measured include cardiac death, target-vessel myocardial-infarction, target lesion revascularisation and MACE (combination of cardiac death, target-vessel MI and TLR).

Results During the study period, 279-patients (with 332-lesions) with de novo lesions were treated with an SCB. The mean age of patients was 65 ± 12 years, 219 (79%) were male, 36% (n=100) had diabetes, 16% (n=45) had chronic kidney disease and 61% were in the setting of acute coronary syndrome (n=169). Predilatation was performed in 96% (320-lesions). Bailout stenting (with DES) was required in 5% lesions (n=18) and of which 16 were due to dissections and 2 were due to recoil >30% following DCB use. The mean diameter and length of DCBs were 2.35 mm and 26 mm respectively. During a median follow-up of 584-days (19-months) cardiac death was reported in 8 patients (3%). Target vessel MI was in 3% (n=9), TLR per lesion was 8% (n=26) and the MACE rate was 11% (n=31). There were no documented cases of acute vessel closure.

Conclusion The long-term outcome from the first ever study on sirolimus eluting balloon in de novo small vessel lesions appears promising with low rates of hard endpoints, and acceptable repeat rates of TLR despite a complex group of patients (50% ACS, 36% diabetics and 19% CKD) and lesion subsets (small vessel and diffuse disease). Implanting stents in these subsets renders them vulnerable to restenosis, making it difficult to treat, making treatment challenging and resulting in high rates of recurrence.

Conflict of Interest None to declare