± PCI was attempted. PCI was done in 36 (95%). 14 (37%) were in cardiogenic shock, 9 (24%) were transferred to ITU, 5 (13.2%) had therapeutic cooling and 33 (87%) survived to hospital discharge. In 20 pts, the diagnosis of STEMI was made following resuscitation (Gp 2). Of these 18 (90%) had angiography + PCI, 9 (45%) were in cardiogenic shock, 6 (30%) had therapeutic cooling, 12 (60%) admitted to ITU, 3 (15%) were admitted to ITU first before coming to the Cath lab and 15 (75%) survived to discharge. There was no evidence of STEMI following resuscitation in 18 pts accepted by our unit (Gp 3). Of these, 17 (94%) had angiography, 7 (39%) had PCI, 2 (18%) had CABG, 2 (18%) were in cardiogenic shock, 15 (83%) were admitted to ITU, 7 (38%) had therapeutic cooling and survival to discharge was 94%. In Gp 3, angiography was delayed pending a head CT in 7 (38%) compared to none in Gps 1 and 2. Angiography was deferred following initial ITU treatment in 8 (44%) patients in Gp 3. Overall survival in patients with and without cardiogenic shock was 58% and 98% respectively ($p<0.01$). Survival was 87% for those with a witnessed OOHA compared to 40% where the arrest was not witnessed ($p<0.05$).

Conclusion A programme of immediate cardiovascular assessment of patients with OOHA and referral for angiography and revascularisation as deemed appropriate is associated with encouraging short-term outcomes. Outcomes are related to the presence of shock and whether the OOHA was witnessed or not. National guidance on the immediate management of these patients may improve outcomes.

030 MANAGEMENT OF BIFURCATION DISEASE WITH A DEDICATED SIDE-BRANCH DEVICE; A SINGLE CENTRE EXPERIENCE WITH THE TRYTON STENT

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Background The optimal strategy for the treatment of bifurcation disease is not yet defined. While trial data suggests that "provisional" side-branch (SB) stenting may be superior to more complex 2-stent approaches, the role of customised devices designed specifically to treat this complex anatomy has not been examined. The TRYTON side-branch stent is one such example. This is a 5 French guide compatible, non-drug eluting, Cobalt Chromium device mounted on a monorail balloon catheter. When deployed into the SB, it is specifically designed to scaffold the ostium. A second stent is mandated in the main branch (MB) and deployed through TRYTON in a culottes fashion, serves to further cover the carina and secure TRYTON. This is followed by final kissing balloon inflation.

Methods All patients undergoing bifurcation stenting using the TRYTON stent were systematically included in a registry. Follow-up data were obtained by case note and angio review and telephone interview.

Results Since November 2008, 79 patients (mean age 63 years, range 36–84) with bifurcation disease and SB vessel diameters of at least 2.5 mm were selected for treatment with TRYTON in our centre. 75% (59/79) of the target lesions were in the left anterior descending/diagonal while 4 were in the left main stem. 60% (47/79) lesions were Medina 1.1.1, while 15% (12/79) had no SB disease. Procedural success was achieved in 94%. In 5 cases from our initial 6 months' experience, TRYTON could not be delivered to the target lesion due to proximal calcification or tortuosity, resulting in stent dislodgement in 4 cases and requiring retrieval of TRYTON in 1. An alternate bifurcation strategy was used and none of the 5 patients suffered clinical sequelae. Subsequent device modification by the manufacturers to improve balloon adherence, trackability and deliverability resulted in a 100% success rate. In the remaining 74 patients TRYTON was deployed successfully and in all but one case, a drug eluting stent was used in the main branch. Additional drug eluting stents were deployed into further diseased segments of the SB in five cases and the MB in 28. Final kissing balloon inflation could be performed in all but one case (99%). Angiographic success in both the main and side branches was 100%. After a median follow-up of 18 months (range 2–40), there have been no instances of unplanned readmission with ischaemia, myocardial infarction or death in any of the 79 patients. In one case in-stent restenosis in the bare-metal MB stent required further treatment with a drug eluting balloon.

Conclusion TRYTON performs predictably and successfully scaffolds the side-branch ostium. The enhanced ability to rewire the side-branch for final kissing balloon inflation when compared with other 2-stent strategies may have contributed to our low observed clinical event rate. The medium term results in this series are encouraging. A randomised trial comparing TRYTON with provisional side-branch stenting is ongoing.

031 USE OF THE NOVEL SIDEGUARD DEDICATED BIFURCATION STENT: A REAL WORLD EXPERIENCE

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Introduction PCI treatment of bifurcation disease is technically challenging. Dedicated bifurcation stents have been developed to address some of the challenges associated with bifurcation lesions. The aim of this study is to report clinical utility and outcomes of the Sideguard stent in patients undergoing treatment to bifurcation coronary lesions in a real world setting in a large tertiary UK centre.

Methods Retrospective study of 61 consecutive patients treated with the Sideguard Stent for bifurcation PCI at the Manchester Heart Centre from March 2010 to October 2011. Patient demographics and PCI procedural data were obtained from the in-house, cross validated PCI database. Mortality data were obtained from National Office of Statistics. Interim 6 month and 1 year data were obtained from clinical review. Clinical end point studied included death, subsequent myocardial infarction, stent thrombosis and target lesion/vessel revascularisation (TLR/TVR).

Results A total of 61 consecutive patients underwent bifurcation PCI using the Sideguard stent during this study. Mean age 57.1±11.5 years (range 30–76) of which 50/61 were male (81.9%). Bifurcation site was in LAD in 44 (72.2%), Cx in 14 (22.9%) and RCA in 3 (4.9%) of cases. Medina classification was 1:1:1 in 38 (62.3%), 1:0:1 in 10 (16.3%) and 0:1:1 in 6 (9.9%) of cases. Moderate or severe calcification was present in 27 (44.3%) of cases. Mean main vessel (MV) diameter was 3.36±0.39 mm, mean MV stent length was 35±18.4 mm and mean number of stents in MV was 1.54±0.77. Mean Side branch vessel (SB) diameter was 2.93±0.33 mm, mean SB stent length was 13.4±8.5 mm and mean number of stents in SB was 1.24±0.43. Final kissing balloon was attempted in 57 (93.4%) and successful in all cases attempted. Procedural complications occurred in 4/61 (6.6%) cases. Complications included 1 case of limited perforation of the MB which was treated conservatively, 1 case of clot formation related to IVUS examination (neither of these complications were thought to be related to sidegurad stent, directly) and 2 cases of stent displacement. Local deployment techniques have been modified to combat displacement. Operators now wait for 30 s and take a frame shot after stent deployment to confirm placement before removing the stent balloon. In our interim analysis 43 of these 61 patients have been followed up for at least 6 months (70.5%) and 37 patients for at least 1 year (60.7%). There were no deaths or stent thromboses.

There was no TLR at 6 month and only 2 (3.3%) at 1 year. TVR was 1 (1.6%) at 6 month with no further cases at 1 year.

Conclusions In one of the largest clinical experiences to date, the Sideguard stent can be used to treat complex bifurcation lesions in a straight forward manner, with excellent short and long term clinical outcomes.

032 LACK OF GENDER DIFFERENCE AND IMPROVED IN-HOSPITAL MORTALITY RATES IN PATIENTS WITH CARDIOGENIC SHOCK FOLLOWING PRIMARY PERCUTANEOUS CORONARY INTERVENTION: A UK TERTIARY CARDIAC CENTRE REGISTRY STUDY

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Background Despite substantial recent improvement in mortality from cardiovascular disease, due primarily to success of primary and secondary prevention strategies, it remains the leading cause of death in the developed world. Among those patients hospitalised with acute myocardial infarction (AMI), cardiogenic shock (CS) is the foremost cause of death complicating up to 10% of admissions. Introduction of early revascularisation strategies and mechanical ventricular support have seen short-term mortality due to CS fall from 70% to 80% in the 1970s to around 50%–60% in the 1990s. Previous studies suggest that women experience more CS than men (11.6% vs 8.3%) in the setting of ST elevation MI. Whether primary percutaneous coronary intervention (PPCI) for AMI has resulted in further reduction in in-hospital mortality and whether there are gender differences in outcomes due to CS is not known.

Aims The aim of this study is to determine the rate of in-hospital mortality following primary PCI in the setting of CS and examine the gender differences in the incidence of CS and the rate of in-hospital mortality.

Methods Data were collected prospectively among all patients presenting with AMI to a large UK tertiary cardiac centre and undergoing PPCI between April 2008 and October 2011.

Results In total 2866 patients (male: 2023 [70.6%] vs female: 843 [29.4%]) underwent PPCI. In total, 141/2866 (4.9%) had percutaneous coronary procedures (balloon angioplasty only or stenting) in the setting of cardiogenic shock. There were 81/2023 [4%] male patients and 60/843 [7.1%]) female patients with CS undergoing PPCI. There were no significant differences in the baseline characteristics between male and female patients except female patients were older than men (male: mean age 64.1 years vs female 69.9 years, p=0.004). The overall unadjusted in-hospital mortality rate was 35.4% with no difference in the genders (male: 35.8% vs female: 35%, p=0.730).

Conclusion The present analysis demonstrates that in the PPCI era, there is reduction in the incidence of cardiogenic shock with reduced unadjusted in-hospital mortality rates following primary PCI. The unadjusted in-hospital mortality rates did not differ between the genders despite the fact that there were more women that had presented with cardiogenic shock.

Abstract 032 Table 1

Variables	Total n=141/2866 (4.9%)	Male n=81/2023 (4%)	Female n=60/843 (7.1%)	p Value
Mean age-years (SD)	66.6 (13.7)	64.2 (12.3)	69.9 (15.0)	0.004
Hypertension (%)	60 (42.5)	32 (39.5)	28 (46.6)	0.434
Diabetes mellitus (%)	20 (14.1)	10 (12.3)	10 (16.6)	0.730
Hypercholesterolaemia (%)	42 (29.7)	22 (27.1)	20 (33.3)	0.465
Previous angina (%)	33 (23.4)	17 (20.9)	16 (26.6)	0.577
Previous myocardial infarction (%)	22 (15.65)	12 (14.8)	10 (16.6)	0.777
Previous percutaneous coronary intervention (%)	7 (4.9)	3 (3.7)	4 (6.6)	0.436
Previous coronary artery bypass graft (%)	2 (1.4)	1 (1.2)	1 (1.6)	0.832
In-hospital mortality (%)	50 (35.4)	29 (35.8)	21 (35)	0.730

033 OUT-OF-HOURS MORTALITY IN THE CURRENT PRIMARY PERCUTANEOUS CORONARY INTERVENTION ERA

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Background There is conflicting evidence to whether the outcomes of primary percutaneous coronary Intervention (PPCI) for ST-segment elevation myocardial infarction (STEMI) are as favourable out of hours as during routine working hours.

Aim To assess the impact of the time of PPCI on the mortality in STEMI. Main outcome measures: In-hospital and long-term all-cause mortality.

Method Retrospective analysis of prospectively collected data on 2571 consecutive STEMI patients treated with PPCI between March 2008 and June 2011 at a regional tertiary centre. Of these, 1036 patients (40.3%) underwent PPCI at weekdays between 08:00 and 18:00 (routine-hours group) and 1535 patients (59.7%) underwent PPCI at weekdays between 18:00 and 08:00 or at weekends (out-of-hours group).

Results Compared to the routine-hours group, the out-of-hours group had a lower mean age (62.5±13.1 vs 64.1±13.7 years, p=0.001), a lower proportion of patients with previous history of angina (18.9% vs 23.6%, p=0.005) and a longer call-to-hospital time. The two groups were otherwise similar in all other clinical and procedural characteristics. The overall cohort in-hospital mortality rate was 4.5%; 4.2% in the routine-hours group and 4.6% in the out-of-hours group (OR; 1.05, 95% CI 0.72 to 1.54, p=0.794). During a mean follow-up period of 560 days, a total of 295 patients died (11.5%). Of these, 126 were in the routine-hours group (12.2%) and 169 in the out-of-hours group (11.0%). In the multiple Cox's proportional hazards model, there was no difference in mortality between the two groups (adjusted HR; 1.09, 95% CI 0.82 to 1.46; p=0.565). Similarly, no difference in mortality was seen in patients, who underwent PPCI at late-night time (22:00–06:00).

Conclusions PPCI outside routine working hours is safe with no difference in outcome of in-hospital and long-term mortality in comparison to PPCI during routine-working hours.

034 THE EFFECT OF THROMBUS ASPIRATION DURING PRIMARY PERCUTANEOUS CORONARY INTERVENTION ON IN-HOSPITAL MORTALITY AND THROMBOLYSIS IN MYOCARDIAL INFARCTION FLOW GRADE

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Background Thrombus aspiration (TA) has been shown to improve Myocardial Blush Grade and ST-segment resolution in patients undergoing primary percutaneous coronary intervention (PPCI) for ST-segment elevation myocardial infarction (STEMI). However, the effect of thrombus aspiration on Thrombolysis In Myocardial Infarction (TIMI) flow grade and the survival of these patients remains uncertain.