Abstract 21 Figure 1 Box plots demonstrating effects of 40cc and 50cc balloons on average peak velocity (A) and mean distal coronary pressure (B).

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FACTORS ASSOCIATED WITH POOR OUTCOME IN PATIENTS TAKEN TO THE CATHETER LAB AFTER OUT OF HOSPITAL CARDIAC ARREST

¹Christian Camm*, ²Roshan Xavier, ²Rajesh Kharbada, ²Sam Dawkins. ¹University of Oxford; ²Oxford University Hospitals NHS Foundation Trust

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Introduction Out of hospital cardiac arrest (OHCA) represents a common presentation to both the emergency department and the catheter lab. Understanding of the factors associated with poor outcome in this patient group is limited; thus management decisions are challenging. The aim of this analysis was to retrospectively review clinical records for OHCA patients undergoing catheter lab procedures to determine factors associated with poor outcome.

Methods Data on patients undergoing coronary angiography and percutaneous coronary intervention (PCI) between January 2009 and May 2015 at a tertiary cardiac centre were retrospectively reviewed. A keyword search was performed on all records to identify relevant procedures and these results were manually reviewed by two authors to confirm they were OHCA cases. Cases were excluded if they initially presented to a different hospital and were later transferred for investigation. Procedure details, discharge summaries, blood results and mortality data were reviewed.

Abstract 21 Figure 2 (A) Wave Intensity Profile during intra-aortic balloon pump assisted conditions, highlighting the temporally related wave energies with device inflation (IABP-FCW) and deflation (IABP-FEW). FCW=forward compression wave; BCW= backward compression wave; FEW=forward expansion wave, BEW= backward expansion wave. (B) Box plot demonstrating effects of 40cc and 50cc balloons on IABP-FCW during basal conditions.

Abstract 22 Table 1 Demographic details of patients attending the catheter lab following OHCA. Values shown as mean $\pm$ standard deviation or n (%).

Item	Number of Patients
Total OHCA Patients	242
Age (Years)	62.2 $\pm$ 13.0
Male	190 (78.5)
30 Day Mortality	42 (17.4)
1 Year Mortality	47 (19.4)

Abstract 22 Table 2 Selected prognostic factors associated with 30-day mortality in patients attending the catheter lab following OHCA. Values shown as n (%). For the first row, percentage is of row total, in other rows percentages is that of column total.

Item	Total	Dead	Alive	P-value
All Patients	242 (100.0)	42 (17.4)	200 (82.6)	
Cardiogenic Shock	57 (23.6)	22 (52.4)	35 (17.5)	<0.001
Any PEA (n=228)	25 (11.0)	10 (25.6)	15 (7.9)	0.001
Intubated prior to catheter lab	121 (50.0)	35 (83.3)	86 (43.0)	<0.001
ST-Elevation	119 (49.2)	23 (54.8)	96 (48.0)	0.426
Underwent PCI	162 (66.9)	28 (66.7)	134 (67.0)	0.967

Results 27 578 angiogram or PCI procedures were carried out between January 2009 and May 2015; 242 (0.9%) of these were patients presenting with OHCA. Forty-two patients (17.3%) died within 30 days of presentation. Demographic details of this population are shown in Table 1. Univariate analysis revealed that blood gas pH and lactate were strongly correlated with 30 day mortality ($p<0.001$ and $p=0.002$ respectively). Other factors associated with 30 day mortality included presentation with cardiogenic shock, intubation pre-hospital or in the emergency department (but not in the

Abstract 22 Figure 1 Flow-chart detailing patient identification for this study.

Abstract 22 Figure 2 Bar charts showing blood gas pH and lactate against 30-day mortality

catheter lab) and the development of pulseless electrical activity (PEA) at any time (table 2). Culprit vessel ($p=0.810$), ST-elevation at presentation, and age were not significantly associated with 30 day mortality ($p=0.426$ and $p=0.085$ respectively). Furthermore, there was no difference in mortality between those who underwent PCI and those who received angiography alone.

Conclusion OHCA constituted 0.9% of activity during the period of review. There were significant correlations between 30 day mortality and several biochemical and clinical markers available at presentation. The use of these markers may be of use in triaging patients who are likely to benefit from interventional procedures.

23 THE INFLUENCE OF COLLATERAL REGRESSION POST CORONARY CHRONIC TOTAL OCCLUSION (CTO) PERCUTANEOUS CORONARY INTERVENTION (PCI) ON DONOR VESSEL CORONARY PRESSURE-DERIVED MEASUREMENTS

¹Shah Mohdnazri*, ¹Firas Al-Janabi, ¹Grigoris Karamasis, ²James Hampton-Till, ³Rasha Al-Lamee, ¹Jason Dungu, ¹Swamy Gedela, ¹Kare Tang, ¹Paul Kelly, ³Justin Davies, ¹John Davies, ¹Thomas Keeble. ¹Essex Cardiothoracic Centre; ²Anglia Ruskin University; ³Imperial College London

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Background There is strong evidence of FFR guided treatment in multi-vessel disease. The presence of a concomitant CTO may influence the FFR measurement in donor vessel as suggested in previous studies and reports. This has an important implication on clinical decision making for complete

revascularisation in patients with chronic total occlusion. We sought to investigate the influence of collateral regression after successful CTO recanalisation on donor vessel pressure-derived indices.

Methods The study participants were patients with angina who had RCA CTO. 28 out of 34 consecutive patients underwent successful PCI to RCA CTOs during the study period and completed the follow study (at 3 months post CTO PCI) were included in this analysis. Coronary pressure-derived indices (resting PD/Pa, iFR and FFR) were measured pre and post successful RCA CTO PCI in donor vessels and at follow up procedures.

Results The mean age was 62.38 years. The mean estimated CTO duration was 238.72 weeks and CTO length was 32.44 mm. 25 patients had ischaemia and or viability in the RCA territory assessed with cardiac MRI. LAD was the major donor vessel in 24 patients and LCX was the minor donor vessel in 4 patients. Percent stenosis on QCA in the major and minor donor vessel were 40.6% and 35.1% respectively. The mean resting Pd/Pa, iFR and FFR pre and post RCA CTO PCI and at follow-up procedures in major donor vessel were (0.893, 0.862, 0.764), (0.907, 0.886, 0.753) and (0.918, 0.901, 0.787) respectively. The mean resting Pd/Pa, iFR and FFR pre and post RCA CTO PCI and at follow-up procedures in minor donor vessel were (0.979, 0.966, 0.890), (0.983, 0.979, 0.880) and (0.981, 0.974, 0.898) respectively. The changes in coronary pressure-derived indices pre and post RCA CTO PCI and at follow up procedures are summarised in table 1. In major donor vessel, there was significant changes in the difference between follow up and pre-CTO PCI values for Pd/Pa, iFR and FFR values (p values 0.006, 0.003 and 0.047 respectively). There was also significant

Abstract 23 Table 1 Coronary pressure-derived indices pre and post RCA CTO PCI and at follow up procedures (FU:Follow-up, PCI: Percutaneous Coronary Intervention, FFR: Fractional Flow Reserve, CTO: Chronic Total Occlusion)

Paired Samples Test (Major Donor Artery)									
		Paired Differences					t	df	P value Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	FU PdPa - Post PCI PdPa	.01107	.03675	.00695	-.00318	.02532	1.594	27	.123
Pair 2	FU PdPa - Pre PCI PdPa	.02536	.04460	.00843	.00806	.04265	3.009	27	.006
Pair 3	FU iFR - Post PCI iFR	.01500	.05288	.00999	-.00550	.03550	1.501	27	.145
Pair 4	FU iFR - Pre PCI iFR	.03893	.06420	.01213	.01404	.06382	3.209	27	.003
Pair 5	FU FFR - Post PCI FFR	.03436	.05167	.00977	.01432	.05439	3.518	27	.002
Pair 6	FU FFR - Pre PCI FFR	.02311	.05869	.01109	.00035	.04586	2.083	27	.047
Pair 7	FFR COLLATERAL AT FU - FFR COLLATERAL Pre CTO PCI	-.12222	.08707	.01676	-.15667	-.08778	-7.294	26	.000

Paired Samples Test (Minor Donor Artery)									
		Paired Differences					t	df	P value Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	FU PdPa - Pre PCI PdPa	.00179	.04019	.00760	-.01380	.01737	.235	27	.816
Pair 2	FU PdPa - Post PCI PdPa	-.00179	.02358	.00446	-.01093	.00736	-.401	27	.692
Pair 3	FU iFR - Pre PCI iFR	.00750	.06132	.01159	-.01628	.03128	.647	27	.523
Pair 4	FU iFR - Post PCI iFR	-.00464	.04694	.00887	-.02285	.01356	-.523	27	.605
Pair 5	FU FFR - Pre PCI FFR	.00818	.05051	.00955	-.01141	.02777	.857	27	.399
Pair 6	FU FFR - Post PCI FFR	.01768	.06095	.01152	-.00596	.04131	1.535	27	.136