

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

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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

change in the difference between follow up and post-CTO PCI FFR value (P value 0.002). FFR collateral reduced significantly at follow-up (p value 0.000).

Conclusion Successful recanalisation of a RCA CTO results in increase in major donor vessel coronary pressure-derived indices at follow up procedure associated with the regression of collateral function. In patients with multi-vessel disease, the expected change and the optimal timing to perform PCI in donor vessel should be considered when planning multi-vessel revascularisation in this setting.

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THE PHYSIOLOGICAL IMPACT OF CORONARY CHRONIC TOTAL OCCLUSION (CTO) PERCUTANEOUS CORONARY INTERVENTION (PCI) ON DONOR VESSEL CORONARY PRESSURE-DERIVED MEASUREMENTS AND THE INFLUENCE OF COLLATERAL CIRCULATION

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Background There is strong evidence of FFR guided treatment in multi-vessel disease. Multi-vessel disease is present in up to 66% of patients with CTO in a large registry analysis. 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 occlusions. There is a growing interest on the influence of collateral circulation, flow, amount of myocardium supplied by donor artery to a CTO and the impact of CTO revascularisation on donor vessel pressure-derived indices. We sought to investigate the physiological impact of CTO recanalisation on donor vessel pressure-derived indices.

Methods The study participants were patients with angina who had RCA CTO. 34 out of 40 consecutive patients

underwent successful PCI to RCA CTOs during the study period were included in the analysis. Coronary pressure-derived indices (resting Pd/Pa, iFR and FFR) were measured pre and post successful RCA CTO PCI in donor vessels. Donor vessel characteristics were graded using the Rentrop and collateral connection grading classification.

Results The mean age was 61.76 years. The mean estimated CTO duration was 238.72 weeks and CTO length was 32.44 mm. 31 patients had ischaemia and or viability in the RCA territory assessed with cardiac MRI.

LAD was the predominant donor vessel in 30 patients and LCX was the minor donor vessel in 4 patients. Percent stenosis on QCA in the predominant and minor donor vessel were 41.43% and 35.05% respectively. The angiographic details are as outlined in table 1. The mean resting Pd/Pa, iFR and FFR pre and post RCA CTO PCI in major donor vessel were (0.891, 0.858, 0.759) and (0.903, 0.882, 0.746) respectively. iFR in the major donor vessel increased from 0.858 to 0.882 (difference, 0.02412 (0.00573 to 0.04250); p=0.012). There were no significant difference in resting Pd/Pa and FFR pre and post CTO PCI (p=0.109 and p=0.388 respectively).

The mean resting Pd/Pa, iFR and FFR pre and post RCA CTO PCI in minor donor vessel were (0.982, 0.969, 0.894) and (0.985, 0.979, 0.885) respectively. There were no significant difference in resting Pd/Pa, iFR and FFR pre and post CTO PCI in minor donor vessel (p=0.534, p=0.152, p=0.183 respectively).

The mean collateral FFR was 0.310. The mean total ischaemic burden on baseline cardiac MRI in RCA territory was 12.6%.

Conclusion Successful recanalisation of a RCA CTO results in increase in iFR but no significant difference was seen in resting Pd/Pa and FFR pre-RCA CTO PCI and immediately post recanalisation in predominant donor vessel. Complete collateral regression was not observed in all patients immediately post RCA CTO PCI and this may account for the non-significant change in FFR values.

Abstract 24 Table 1 Angiographic Characteristics

Angiographic Characteristics			
		n	%
CTO Vessel	RCA	34	100
Predominant donor vessel	LAD	30	88
	LCX	4	12
Overall Rentrop Classification grading		Pre CTO PCI (n)	Immediately Post CTO PCI (n)
	0	0	3
	1	0	25
	2	2	6
	3	32	0
Overall Collateral Connection Classification grading	0	0	23
	1	3	10
	2	22	0
	3	9	1