

TCT@ACC-i2: Invasive and Interventional Cardiology

CHRONIC TOTAL OCCLUSIONS: IMPACT OF SUCCESSFUL AND FAILED RECANALIZATION ON SHORT AND LONG-TERM SURVIVAL

Moderated Poster Contributions

Poster Sessions, Expo North

Saturday, March 09, 2013, 3:45 p.m.-4:30 p.m.

Session Title: Chronic Total Occlusions

Abstract Category: 44. TCT@ACC-i2: Coronary Intervention, CTO

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Background: The impact of successful CTO recanalization on short and long term survival remains unclear. We conducted a meta-analysis to assess the impact of successful CTO recanalization on clinical outcomes.

Methods: An extensive literature search till 8/30/2012 identified 16 studies comparing successful (sCTO) and unsuccessful (uCTO) PCI. Clinical outcomes of interest include all-cause and cardiac mortality, MI, MACE, recurrent angina, CABG and repeat revascularization assessed as in-hospital and at long term follow-up. Meta-analysis was performed using random effects model (Review Manager 5.1).

Results: These 16 studies reported clinical outcomes in 11,797 patients (sCTO=8464, uCTO=3333). The two groups were similar in terms of age, HTN, DM, HLD, CRI, prior stroke and LV ejection fraction. Patients in the uCTO group had higher rate of complications [coronary perforation (6.6% vs. 1.0%) & coronary dissection (14.3% vs. 9.5%), $p<0.01$]. Successful CTO PCI was associated with lower in-hospital & long term (57.3 months) rates of cardiac & all-cause mortality, MACE and need for CABG. Patients in sCTO group had reduced recurrent angina & higher rate of repeat revascularization at long term follow-up (Table).

Conclusions: Successful CTO PCI is associated with short and long term reduction in cardiac and all-cause mortality as well as lower risk of angina and subsequent CABG. CTO PCI should be performed by experienced operators as a failed attempt is associated with higher risk of complications.

Table: In-hospital and long Term Clinical Outcomes after Percutaneous CTO Recanalization

Outcome	n ^a	N ^b	Event Rate sCTO		Event Rate uCTO		Odds Ratio (Random)	Q ^c	P(Q) ^d	I ²	τ ^e		
			n	Total (N)	n	Total (N)							
Cardiac Death (H)	10	5504	9	8909	0.23	35	1595	2.19	0.13 (0.04 - 0.40)	11.11	0.13	0.37	0.89
Cardiac Death (F/Up)	7	3829	57	2600	2.19	73	1229	11.36	0.34 (0.23 - 0.51)	6.42	0.38	0.07	0.02
All-cause Death (H)	10	5495	11	4159	0.26	33	1736	1.90	0.18 (0.07 - 0.48)	10.38	0.17	0.33	0.83
All-cause Death (F/Up)	14	11091	907	7987	11.36	455	3104	14.66	0.47 (0.36 - 0.62)	34.68	<0.01	0.68	0.12
MI (H)	9	4308	111	2997	3.70	63	1311	4.81	0.56 (0.27 - 1.18)	16.01	0.04	0.50	0.47
MI (F/Up)	8	4589	194	3127	6.20	117	1462	8.00	0.79 (0.56 - 1.11)	10.11	0.18	0.31	0.07
MACE (H)	3	1859	28	1281	2.19	29	578	5.02	0.34 (0.13 - 0.91)	5.98	0.07	0.63	0.46
MACE (F/Up)	3	2355	925	1901	48.66	278	454	61.23	0.44 (0.35 - 0.55)	1.57	0.46	0.00	0.00
Angina (F/Up)	4	1317	203	871	24.43	195	488	40.12	0.45 (0.26 - 0.78)	12.36	<0.01	0.78	0.23
CABG (H)	9	5027	19	3432	0.55	100	1595	6.27	0.12 (0.04 - 0.31)	11.70	0.07	0.49	0.68
CABG (F/Up)	13	7775	272	5482	7.98	493	1791	14.24	0.20 (0.17 - 0.25)	15.46	0.22	0.22	0.03
PCI (H)	4	1619	11	1139	0.97	6	480	1.25	0.64 (0.24 - 1.72)	1.59	0.66	0.00	0.00
PCI (F/Up)	7	2506	255	1791	14.24	52	893	5.82	3.44 (1.57 - 7.53)	19.00	<0.01	0.68	0.61

^a Number of studies reporting the outcome; ^b Number of patients included in the analysis; ^c Composite endpoint of death, non-fatal myocardial infarction, stroke and repeat revascularization; ^d Non-fatal myocardial infarction; ^e Cochran's Q score for heterogeneity; ^f I² index for degree of heterogeneity; ^g tau-squared measure of heterogeneity; ^h P<0.0001; * P-value for Cochran's Q score for heterogeneity; H = In-hospital outcomes; F/Up = Long term follow-up outcomes