TCT-382

Chronic Total Occlusions: Are They Truly Stable?
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Background: Acute coronary syndromes (ACS) for ST elevation (STEACS) and non-ST elevation (NSTEMI) are known to be caused by acute coronary plaque disruption plus thrombus formation resulting in acute myocardial ischemia. Chronic, totally occluded (CTO) arteries are believed to represent a stable clinical picture with myocardial ischemia occurring in a predictable pattern. Whether CTO alone can be the cause of ACS, particularly NSTEMI is unknown as is if patients (pts) with a CTO are at increased risk for repeat episodes of NSTEMI.

Methods: The Minneapolis Heart Institute developed a standardized protocol to identify and treat high risk NSTEMI pts, the Level Two program (L2). L2 pts are defined as presenting with acute anginal symptoms and any of the following: ST segment depression ≥ 2 mm, Anterior T wave inversion, positive biomarkers, recent positive stress test, or clinical instability as the result of arrhythmia, congestive heart failure, or ongoing symptoms despite medical therapy. If no other cause for NSTEMI was found (no significant coronary lesions or situations resulting in abrupt increase of myocardial oxygen demand), the CTO was considered the cause. The frequency with which these pts were admitted for NSTEMI with no new cause within 18 months was assessed.

Results: Results: In 2012, 369 consecutive L2 pts diagnosed with NSTEMI and underwent coronary angiography. Of the 99 pts found to have a CTO, 21 were deemed to have NSTEMI caused by the CTO itself as it was the only culprit lesion. These 21 pts were compared to those without a CTO (n=270). The readmission rate for pts with a CTO culprit lesion was higher than those without a CTO (47.6% vs. 23.7%; p=0.015).

Conclusions: Conclusion: These data demonstrate that CTO can be the cause of NSTEMI and do not only represent ‘stable’ CAD and that almost 50% of these pts develop repeat episodes of NSTEMI within 18 months.

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Incremental Benefit of Hybrid CTO Technique Adoption - a 4-center experience
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Background: The hybrid approach to chronic total occlusion (CTO) angioplasty was devised in 2011. The intent of the hybrid approach was to enhance first time procedural success by harmonizing antegrade and retrograde techniques. In this algorithm, failing strategies are given up early and penetration into the algorithm dictates further strategy. We present technical and procedural success in CTO-PCI at high volume centers.

Methods: Between Jan 1 2009 and Feb 22 2013 660 CTO-PCI procedures were performed at two high volume CTO angioplasty centers in the United States. We compared the first time procedural success in CTO-PCI at high volume centers.

Results: Results: The total of 91,154 patients were included in the study of which 14,609 had a CTO. Median follow-up was 3 years. The total number of events was 9084. CTO was an independent predictor of mortality (HR 1.29; 95%CI 1.22-1.37; P<0.001). The presence of CTO was not associated with increased mortality risk in patients with stable angina (HR 1.10, (95% CI 0.98-1.48). However, in patients with acute coronary syndromes, CTO was an independent predictor of mortality risk in patients with unstable angina (HR 1.22- 95% CI 1.02-1.48), non-STEMI (1.39; 95% CI 1.25-1.55) and STEMI (1.62; 95% CI 1.46-1.83).

Conclusions: Conclusion: Our study is based on the largest CTO cohort so far. The presence of CTO is associated with worse long-term survival in patients with acute coronary syndromes but not in patients with stable angina.

TCT-385

Prognostic impact of chronic total occlusion in ischemic heart disease - A report from the Swedish Coronary Angiography and Angioplasty Registry
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Background: Chronic total coronary occlusion (CTO) is a frequent finding in patients with ischemic heart disease. Our aim was to evaluate the prognostic impact of CTO on long-term survival in patients with different categories of ischemic heart disease at the level of one whole nation.

Methods: The study population included all consecutive patients registered in the SCAAR registry (Swedish Coronary Angiography and Angioplasty Registry) from 2005 to 2012 who underwent angiography or PCI in Sweden. Patients with previous coronary artery bypass graft surgery were excluded. The patients with CTO and without CTO (no-CTO) were compared using Cox proportional-hazards regression adjusted for the following covariates: age, indication, extent of coronary artery disease, smoking, hypertension, hyperlipidemia, diabetes, year of intervention, prior infarction, prior PCI, hospital and complications. Interaction test was performed between the presence CTO and the different categories of ischemic heart disease e.g. stable angina, unstable angina, non-STEMI and STEMI.

Results: The total of 91,154 patients were included in the study of which 14,609 had a CTO. Median follow-up was 3 years. The total number of events was 9084. CTO was an independent predictor of mortality (HR 1.29; 95%CI 1.22-1.37; P<0.001). The presence of CTO was not associated with increased mortality risk in patients with stable angina (HR 1.10, (95% CI 0.98-1.48). However, in patients with acute coronary syndromes, CTO was an independent predictor of mortality risk in patients with unstable angina (HR 1.22- 95% CI 1.02-1.48), non-STEMI (1.39; 95% CI 1.25-1.55) and STEMI (1.62; 95% CI 1.46-1.83).

Conclusions: Conclusion: Our study is based on the largest CTO cohort so far. The presence of CTO is associated with worse long-term survival in patients with acute coronary syndromes but not in patients with stable angina.

Table 1

<table>
<thead>
<tr>
<th>Baseline Characteristics</th>
<th>Pre-Hybrid era (N=462, group 1)</th>
<th>Hybrid era(N=158, group 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>65</td>
<td>65.4</td>
</tr>
<tr>
<td>Men(%)</td>
<td>312(84.2)</td>
<td>168(85)</td>
</tr>
<tr>
<td>Hypertension</td>
<td>345(92)</td>
<td>183(92)</td>
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<tr>
<td>Hyperlipidemia</td>
<td>264(97.6)</td>
<td>195(99)</td>
</tr>
<tr>
<td>Diabetes</td>
<td>189(45)</td>
<td>83(42)</td>
</tr>
<tr>
<td>EF (&gt;40%)</td>
<td>68(18)</td>
<td>47(24)</td>
</tr>
<tr>
<td>History of MI</td>
<td>17(47.7)</td>
<td>9(45)</td>
</tr>
<tr>
<td>History of CABG</td>
<td>188(50)</td>
<td>73(37)</td>
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