TCT-487

Door-to-Balloon Time as a Function of Mode of Referral: Results from the Ontario Provincial Cardiac Care Network Database

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Background: Door-to-balloon times strongly correlate with survival in patients referred for primary PCI. Guidelines have recommended that regions develop STEMI systems that quickly triage patients for primary PCI. We sought to evaluate door-to-balloon time amongst patients referred for primary PCI according to different referral pathways in the province of Ontario.

Methods: We used the provincial primary PCI registry database developed by the Cardiac Care Network of Ontario Cath/PCI Working Group. We identified all patients who underwent primary PCI between July 2009 and December 2011 at 14 PCI capable centers. We evaluated time to reperfusion according to the following referral pathways: i) Field directly to the PCI center catheterization laboratory; ii) Field to the PCI center emergency department (ED); iii) Field to a non-PCI center ED; iv) Self-transport (Self-T) to a PCI capable center ED; v) Self-T to a non-PCI capable center ED. We excluded in-hospital patients presenting with STEMI on the wards. The primary endpoint was the first hospital door-to-balloon-time.

Results: 6198 patients were referred for primary PCI. PCI was performed in 5678 patients. Data was available to calculate door-to-balloon times in 4763 patients. Amongst these patients, 63% were transported initially from the field, and 37% self-transported to the ED. The median door-to-balloon time with interquartile range for each referral pathway is shown in the table. Patients referred directly to the cath lab had significantly faster door-to-balloon times.

<table>
<thead>
<tr>
<th>Field to PCI center cath lab</th>
<th>Field to PCI center ED</th>
<th>Field to non-PCI center</th>
<th>Self-T to PCI center ED</th>
<th>Self-T to non-PCI center ED</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=1310</td>
<td>N=717</td>
<td>N=970</td>
<td>N=510</td>
<td>N=1256</td>
<td>P&lt;0.0001</td>
</tr>
<tr>
<td>Median</td>
<td>46</td>
<td>80</td>
<td>122</td>
<td>104</td>
<td>120</td>
</tr>
<tr>
<td>IQR</td>
<td>34-63</td>
<td>58-111</td>
<td>95-184</td>
<td>77-146</td>
<td>97-171</td>
</tr>
</tbody>
</table>

Conclusions: Prehospital triage is associated with very short door-to-balloon times when patients are transported directly to the catheterization laboratory. Self-transport leads to shorter door-to-balloon time when the patient presents at a PCI center. These results are relevant to regions planning to develop STEMI systems.

TCT-488

Impact of Multivessel Coronary Artery Disease With or Without a Concurrent Chronic Total Occlusion on Survival in Patients Treated With Rescue Angioplasty

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Background: The effect of multi-vessel disease (MVD) with or without a concomitant coronary chronic total occlusion (CTO) has never been investigated in patients treated with rescue percutaneous coronary intervention (PCI). This study evaluates whether there is an increased rate of death at 1 year follow-up in patients undergoing rescue PCI with angiographic pattern of MVD and a concurrent CTO in comparison with single vessel disease (SVD) and MVD without CTO.

Methods: Among 551 consecutive patients undergoing rescue PCI, we compared the 1-year survival rates of 361 patients with SVD, 137 with MVD without a CTO and 53 with MVD and a CTO.

Results: Patients with MVD were older than SVD (62±10 vs 57±11 yrs, p<0.001) and more often admitted with cardiogenic shock (14% vs 5% p<0.001). Patients with MVD and CTO had more often previous myocardial infarction (19% vs 4% vs 4%, p<0.001), lower ejection fraction (42±11% vs 47±11% vs 49±11%) and longer pain to PCI time (8±6 vs 7±5 vs 7±5 hours, p<0.001) compared with patients with SVD and MVD without CTO, respectively. The 1-year mortality rates of patients with SVD, MVD without CTO and MVD with CTO were 5%, 13% and 27% respectively (p<0.001). The Cox proportional hazard model identified the presence of MVD with CTO as a strong predictor of death at 1-year follow-up (HR 3.4, 95% CI: 1.6 to 7.1, p=0.001) while MVD alone did not result as a predictor of outcome (HR: 1.9, 95% CI: 0.9 to 3.8, p=0.064). Adjusted 1-year overall survival rates were 96%, 91.4% and 83.4% (p=0.001) in the groups with SVD, MVD without and with CTO, respectively.

Conclusions: Patients with MVD and concurrent CTO have higher mortality rates than those with SVD or MVD without CTO at 1-year follow-up after rescue PCI. MVD with CTO and not MVD alone is a predictor of death at 1-year follow up.

TCT-489

Stent Thrombosis after primary PCI for STEMI in relation to non-usage of dual antiplatelet therapy over time: Results of the HORIZONS-AMI trial

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Background: Rates of stent thrombosis (ST) may vary overtime and the relationship of this complication with non-adherence to dual antiplatelet therapy (DAPT) during long-term follow-up remains unclear.

Methods: We analyzed 2,997 patients who were treated with at least 1 stent and in whom a non-target vessel ST did not occur during follow-up from the large-scale HORIZONS-AMI trial of patients with STEMI undergoing primary PCI. Aspirin was prescribed indefinitely, and a thienopyridine for at least 6 months. DAPT usage was evaluated according to the development of ST in 4 time periods (<1 month, 1-6 months, 6-12 months and >1 year from index stent implantation).

Results: Rates of ST and DAPT usage are shown in the Table. DAPT non-usage was lowest within the first month, and we observed no relationship between confirmed discontinuation of antiplatelet therapy and stent thrombosis during the first month. During the 1-6 month period we observed a clear relationship between non-usage of DAPT and definite/probable ST. However, this relationship was absent in the 6-12 month period. Beyond one year, ST was associated with non-usage of aspirin but was paradoxically more common in patients taking a thienopyridine.
Background: In the medical literature several cases of Tako-tsubo cardiomyopathy (TTC) with critical coronary artery disease (CAD) have been reported, and in the clinical practice several typical TTC cases show significant stenosis of coronary arteries that cannot be related to the dysfunctional myocardium. The aim of this study is to evaluate the prevalence, clinical characteristics and outcome of patients with TTC and critical CAD in a large multicentre database.

Methods: In the 26 participating centers, 450 patients admitted with the diagnosis of TTC (modified Mayo Criteria) underwent coronary angiography within 48 hours of hospital admission and were progressively included in the Tako-tsubo Italian Network (TIN) Registry.

Results: Overall, 43 (9.6%) patients had at least 1 critical coronary stenosis (≥50%) not supplying the dysfunctional myocardium, or a previous myocardial revascularization (percutaneous or surgical), while 407 (90.4%) had not critical stenosis or truly normal coronary arteries. TTC patients with critical CAD were more likely to have advanced age, diabetes, familiar history of CAD, acute functional mitral regurgitation and a delayed left ventricular function recovery as compared with those without. At 6-month follow-up, the incidence of death, TTC recurrence and rehospitalization rates were similar between patients with critical CAD and patients with normal coronary arteries (Table). At multivariable Cox analysis, independent predictors of death were Charlson comorbidity index while the presence of CAD did not significantly influence mid-term outcome.

Conclusions: The presence of significant CAD is a possible finding in a not trivial proportion of patients with TTC. Thus, when the stenotic artery does not supply the dysfunctional myocardium, the presence of angiographically significant CAD should not be considered an exclusion criteria for TTC.

TCT-491
Incidence And Predictors Of 30 Days Mortality In Elderly Patients With ST-Segment Elevation Acute Myocardial Infarction Undergoing Primary Angioplasty

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Background: Primary percutaneous coronary intervention (PPCI) is currently the treatment of choice for patients presenting with ST-segment elevation acute myocardial infarction (STEMI). The purpose of the present study is to determine the incidence and predictors of 30 days mortality in elderly patients with STEMI treated with PPCI.

Methods: Prospective observational study. Consecutive patients older than 75 years with STEMI undergoing PCI in our Hospital were enrolled between January 2006 to December 2009. Prior PPCI, patients received loading dose of 300 mg Clopidogrel and 325-500 mg of Aspirin. Unfractionated Heparin was administered according to current guidelines. Abciximab was administered at physician’s discretion. Statistical analysis was performed with SPSS v.18.

Results: Among 1,619 STEMI patients admitted for PPCI, 369(22.8%) were older than 75 years with STEMI undergoing PPCI in our Hospital were enrolled between January 2006 to December 2009. Prior PPCI, patients received loading dose of 300 mg Clopidogrel and 325-500 mg of Aspirin. Unfractionated Heparin was administered according to current guidelines. Abciximab was administered at physician’s discretion. Statistical analysis was performed with SPSS v.18.

Conclusions: Among 1,619 STEMI patients admitted for PPCI, 369(22.8%) were older than 75 years. Mean age was 80.1 ± 3.9 years, 196(53.1%) male patients, 90 (24.4%) diabetes mellitus, 51 (13.8%) prior myocardial infarction, 11 (3%) prior congestive heart failure, 30 (8.3%) in Killip class III-IV, 315 ± 238 mean minutes of time symptoms onset to PPCI, 30 days all-cause mortality occurred in 58 (16.4%) patients and cardiac mortality in 53 (15.1%). Univariate analysis determined age older than 81.3 years, non loading dose of Aspirin and Clopidogrel prior PPCI, Killip class 3-4 presentation, final TIMI grade flow less than 3 and prior congestive heart failure as predictors of 30 days mortality. A multivariable logistic regression analysis was performed, identifying as independent predictors of 30 days mortality Killip class 3-4 and final TIMI grade flow less than 3 were identified as independent predictors of 30 days mortality.

TCT-490
Coronary Artery Disease and Tako-tsubo Cardiomyopathy: a Possible Association

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Conclusions: In the HORIZONS-AMI trial of patents with STEMI undergoing stent implantation, the relationship between ST and non-usage of DAPT was complex and varied overtime. It was strong during the 1-6 month timeframe, but not between 6 and 12 months. Hereafter, very late ST was associated with non-usage of aspirin but not of a thienopyridine.

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