The SYNTAX Score And Risk Of Stent Thrombosis In Patients Undergoing PCI For NSTE-ACS: An ACUITY Trial PCI Cohort Analysis

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Background: The relationship between the SYNTAX score (SS) and stent thrombosis (ST) has not been described. We therefore examined the relationship between SS and ST in high-risk patients with non-ST-segment elevation acute coronary syndromes (NSTE-ACS) pts undergoing percutaneous coronary intervention (PCI).

Methods: We stratified 2,672 pts from the ACUITY-PCI cohort by SS tertile distribution (in ACUITY: SS <7 (n=854), SS 7-12 (n=825), and SS >12 (n=948); and from the original SYNTAX trial: SS <23 (n=2315), SS 23-32 (n=248), and SS >32 (n=84)). Thirty-day and 1-year rates of ARC definite/probable ST were determined for each SS tertile.

Results: A total 30 and 41 definite/probable STs occurred at 30 days and 1 year respectively. When stratified by ACUITY tertiles, 30-day and 1-year rates of definite/probable ST were significantly greater in the highest tertile (SS>12, 2.0% and 2.8%) compared with the intermediate (SS7-12, 0.7% and 1.1%) and lowest tertiles (SS<7, 0.6% and 0.7%), p=0.007 and p=0.0009, respectively. When stratified by original SYNTAX tertiles, 30-day and 1-year rates of definite/probable ST were significantly greater in the highest (SS>32, 6.3% and 8.8%) and intermediate groups (SS32-12, 2.8% and 3.7%) compared with the lowest group (SS<22, 0.8% and 1.2%), p<0.001 and p<0.0001, respectively. After multivariable adjustment for clinical differences between groups, SS (per 1 point increase) remained an independent predictor of both 30-day (hazard ratio [HR], 1.06; 95% confidence interval [CI] 1.03 to 1.09; p=0.0002) and 1-year (HR, 1.06; 95% CI, 1.03 to 1.09; p=0.0001) definite/probable ST.

Conclusions: In NSTE-ACS pts treated by PCI, the extent of severity of CAD, as assessed by the baseline SS, was strongly associated with the occurrence of ST both at 30 days and 1 year.

Table 3. 30-Days and 1-Year Rates of ST Stratified by True Tertiles and Original SYNTAX Tertiles

<table>
<thead>
<tr>
<th>30-Day ST</th>
<th>True tertiles</th>
<th>Original tertiles</th>
</tr>
</thead>
<tbody>
<tr>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
</tr>
<tr>
<td>Definite</td>
<td>6 (0.7)</td>
<td>23 (1.0)</td>
</tr>
<tr>
<td>probable</td>
<td>9 (1.1)</td>
<td>26 (1.2)</td>
</tr>
<tr>
<td>thrombus</td>
<td>18 (1.8)</td>
<td>28 (1.3)</td>
</tr>
<tr>
<td>1-Year ST</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Definite</td>
<td>6 (0.7)</td>
<td>23 (1.0)</td>
</tr>
<tr>
<td>probable</td>
<td>9 (1.1)</td>
<td>26 (1.2)</td>
</tr>
<tr>
<td>thrombus</td>
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<td>28 (1.3)</td>
</tr>
</tbody>
</table>

Data presented as n (%); True tertiles:<7, 7-12, >12; Original SYNTAX tertile:<23,23-32, >32; ST = stent thrombosis

TCT-468

Can in-stent neointimal characteristics predict late neointimal progression after drug-eluting stent implantation?: a serial optical coherence tomography study

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Background: Progressive neointimal proliferation leads to late restenosis and/or neointimal hyperplasia after drug-eluting stent (DES) implantation. Late neointimal response may be different among different tissue components. The aim of this study was to assess impact of in-stent neointimal characteristics on late neointimal proliferation following DES implantation.

Methods: Serial (at 12 and 18 months after DES implantation) optical coherence tomography (OCT) imaging was performed in 26 stented lesions. In-stent neointima was categorized as either homogeneous (Homo) or heterogeneous (Hetero) pattern based on the OCT appearance. Serial changes in % neointimal area (%NIA=neointimal area/stent area x 100) were compared between lesions with Homo and Hetero.

Results: At 12 months, Homo was observed in 10 (38%) and Hetero in 16 (62%) lesions. During follow-up, NIA in lesions with Homo decreased significantly (1.9±0.94→1.6±0.94mm², P=0.003). On the other hand, NIA in lesions with Hetero did not change significantly (2.7±1.8→2.6±1.5mm², P=0.877). Late neointimal progression (NIA at 18 months - NIA at 12 months> 0) was observed in 1 of 10 (10%) lesions with Homo and in 9 of 16 (56%) lesions with Hetero.

Conclusions: OCT characteristics of neointima after DES implantation may predict late neointimal progression or regression.

TCT-469

The Long-term Impact of Antiplatelet Therapy Interruption on Stent Thrombosis Following Percutaneous Coronary Intervention with the Resolute Zotarolimus-eluting Stent

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Background: Dual antiplatelet therapy (DAPT), consisting of aspirin plus a thienopyridine, is currently recommended for 6 to 12 months following drug-eluting stent implantation. We previously reported a low risk of stent thrombosis (ST) in the first year after Resolute® Zotarolimus-eluting stent (R-ZES) placement among patients in whom DAPT was interrupted or discontinued beyond the first month post-procedure. We sought to examine the longer term impact of early DAPT discontinuation as well as the impact of later DAPT discontinuation on subsequent clinical outcomes.

Methods: All patients with 3-year ST data (n=4,896) treated with a R-ZES in the global RESOLUTE clinical program were analyzed according to DAPT status. ST was assessed based on the timing of first DAPT interruption (0-1, 1-12, >12-24 and >24-36 months), which was defined as an interruption of either aspirin or thienopyridine >14 days.

Results: Baseline characteristics of all patients with a >14 day DAPT interruption included age 66 years, 32% with diabetes and 41% with an acute coronary syndrome. A total of 50 ST events occurred through 3 years after R-ZES; 29 (58%) of these events were within 1 month of stent placement regardless of DAPT status. The number (%) of events in each interruption period is shown in the figure.

Conclusions: For patients with a >14 day DAPT interruption after 1 month, the occurrence of subsequent ST remained low through 3 years following R-ZES implantation. These data underscore the necessity of additional prospective data in order to determine the optimal duration of DAPT after DES implantation.