**Basic Science, Animal Models and Preclinical Studies**<br>(TCTAP A-037)

**TCTAP A-037**

**Role of Rosuvastatin Pretreatment in Prevention of Contrast Induced Nephropathy in Patients Undergoing Coronary Angiography**

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**Background:** A lot of prospective and retrospective studies focused on statin therapy as a specific prophylactic measure of contrast-induced nephropathy. Although these trials studied the role of different types of statins (atorvastatin, simvastatin and pravastatin) in prevention of contrast-induced nephropathy, few studies tested the role of rosuvastatin. In this current study, the aim was to assess the efficacy of short-term high-dose rosuvastatin pretreatment therapy for the prevention of contrast induced nephropathy.

**Methods:** This study prospectively included two hundred patients who underwent coronary angiography, and were randomized into two groups: control group (included 100 patients who did not receive statin therapy) and statin group (included 100 patients who received rosuvastatin 20 mg/day 3 days before and 7 days after coronary angiography). According to recommendations of the National kidney foundation, results had been recorded using both serum creatinine and glomerular filtration rate levels.

**Results:** There was statistically significant reduction in the incidence of contrast-induced nephropathy in rosuvastatin pretreated patients (“22%” and “15%” of them developed contrast-induced nephropathy regarding the glomerular filtration rate and serum creatinine levels respectively), compared to those in the control group (“35%” and “38%” regarding the glomerular filtration rate and serum creatinine levels respectively) with P value (<0.001 regarding serum creatinine and <0.042 regarding glomerular filtration rate).

**Conclusion:** Although the results of some clinical studies to prevent contrast-induced nephropathy using statin pretreatment are conflicting, the current study coincided with several clinical studies in favoring statin pretreatment for preventing contrast induced nephropathy in patients undergoing coronary angiography.

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**Bifurcation and Left Main Stenting**<br>(TCTAP A-038 to TCTAP A-047)

**TCTAP A-038**

**Promising Results of Stent Boost Assisted Modified Minicrush Technique for Treating Bifurcation Lesions**

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**Background:** How Large, How much Important and the Disease Status of the Side Branch (SB).

**Methods:** Total 50 patients were studied with a one year follow-up. The Stenting was done by using modified Minicrush bifurcation technique assisted by stent boost.

**Technique:** Side branch (SB) stent positioned 2mm into main branch (MB), with MB balloon centering the carina of SB. The SB stent (DES) dilated at nominal pressure, check injection given to look for dissection distal edge of SB stent. The floppy wire and balloon removed from the SB, then in MB - dilation given with NC balloon at 14 atm. Then MB (DES) of approximate size is deployed at nominal pressures. The projection of SB stent in to MB is checked by stent boost. SB is re crossed with a floppy wire from the distal cell of stent strut. The serial balloon dilatation with up sizing balloon was given at the SB Ostial to expand the struts. A sequential kissing balloon dilatation was also given with non compliant (NC) balloons of suitable size at 14 atm and simultaneous final kissing done at 10 atm. A stent boost done with kissing balloon in place. Check injections given to check stent apposition and TIMI III flow.

**Conclusion:** The stent boost assisted modified Minicrush technique, study of 50 patients with one year follow up we observed no incidence of acute vessel closure or stent thrombosis. The 6% percent of these patients were required repeat revascularization at one year follow up. Stent boost is a cost effective tool to visualize exact SB stent strut position at places where other imaging modalities IVUS, OCT are unavailable. Thus the stent boost assisted Minicrush technique looks to be promising, easy to adapt for treating bifurcation lesions.

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**TCTAP A-039**

**Could Novel Bio-SYNTAX Score Predict Mortality in Patients Undergoing Percutaneous Coronary Intervention with Left Main Coronary Artery Bifurcation Lesions?**

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**Background:** Several studies reported that clinical SYNTAX (Synergy between Percutaneous Coronary Intervention (PCI) with TAXUS and Cardiac Surgery) score (CSS) could provide prognostic information in addition to original SS. However, limited data is available about the prognostic value of N-terminal pro-B type natriuretic peptide (NT-proBNP) in patients with left main (LM) coronary artery bifurcation lesions. The aim of this study is to assess whether Bio-CSS would improve the ability to predict mortality compared with CSS in patients undergoing unprotected LM PCI.

**Methods:** Between June 2006 and December 2012, 225 patients (170 men; mean age = 65.2±10.9 year-old) underwent unprotected LM stenting were analyzed in this study. CSS was calculated by multiplying the SS to an ACEF score (age/left ventricular ejection fraction × 1 if serum creatinine >2mg/dL). Bio-CSS was calculated by multiplying NT-proBNP score (1 for <100 pg/mL, 2 for 100 - <1000 pg/mL, 3 for...
Background: The Axcess stent belongs to the category of dedicated bifurcation lesion stents. It is a self-expanding DES, deployed at the level of the carina. The rationale behind this stent is to provide an anatomically tailored treatment for the bifurcation with maximum drug coverage and minimum overlap and deformation of the stent struts. Our intention was to share our first experience with this novel bifurcation stent demonstrated its high success procedural and device rate. Moreover in case of not optimal placement the stent behaves as a normal DES and the procedure can be shifted without difficulty to classic two stent technique. Our experience also shows that the Axcess stent can be easily placed using radial approach adopting the sheathless catheter.

Methods: We analysed 20 patients treated with Axcess stent for bifurcation lesions from September 2011 to September 2012. From them 17 (85%) were males, mean age 66 years.

Results: Procedural success was achieved in all 20 (100%) patients. Optimal Axcess placement was reached in 16 (80%) patients, in one of patients the device was placed after the bifurcation in the main branch and thus procedure was successfully ended with two additional stents, one in the main branch in overlapping with the Axcess stent and second DES at side branch as standard provisional T stenting (Fig.1). In the second case the device landed just prior the bifurcation. In this case we placed other two DES in main and side branch in overlapping with the Axcess stent. Intra-procedural complication was seen in only one patient (stenomt thrombosis) resolved with adjunctions of Ibr/IIA inhibitors and balloon inflation. Femoral access was used in 12 (60%), predominantly during the first cases and the radial in 8 (40%) using sheathless catheter. Mean 19.97 times was 20.

Conclusion: Our first experience with this novel bifurcation stent demonstrated its high success procedural and device rate. Moreover in case of not optimal placement the stent behaves as a normal DES and the procedure can be shifted without difficulty to classic two stent technique. Our experience also shows that the Axcess stent can be easily placed using radial approach adopting the sheathless catheter.

TCTAP A-041

Angiographic Result of T-stenting with Small Protrusion Using Drug-eluting Stents in the Management of Ischemic Side Branch: The ARTEMIS Study

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Background: The aim of this study was to examine the mid-term angiographic result of T-stenting with small protrusion (TAP) as the bailout strategy for treating coronary bifurcation lesions.

Methods: From 2009 to 2012, symptomatic patients who had severe coronary bifurcation stenoses were treated one-stent strategy using drug-eluting stents, with kissing balloon inflation whenever side branch impingement occurred. TAP was performed if either residual diameter stenosis ≥25%, type B or above dissection, or flow impairment was observed at the side branch. Restudy angiographic studies were performed for medium term luminal assessment.

Results: There were 71 patients recruited who had a mean age of 61 ± 12 years, with medium lesion diameter 78 ± 19%. Medina II lesions were found in 60% of patients. The mean stent size and length in main vessel and side branch were 2.86 ± 0.43mm and 30 ± 12mm, and 2.45 ± 0.26mm and 16 ± 6mm, respectively. Restudy angiography was performed on 64 (90%) patients at 9.2 ± 3.9 months. Angiographic restenosis was observed in 8 (12.5%) patients; the late lumen loss in main vessel and side branch were 0.22 ± 0.19mm and 0.34 ± 0.37mm, respectively.

Conclusion: The use of TAP as the bailout technique for treating coronary bifurcation lesions is associated with good angiographic outcomes, in terms of late lumen loss and restenosis, at 9 months.

TCTAP A-042

Immediate & Intermediate Follow Up of Percutaneous Treatment of Bifurcation Lesion Using Drug Eluting Stent for Main Branch and Drug Eluting Balloon for the Side Branch, Inbluflurical Coronary Artery Disease

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Background: The use of the DES for main branch in bifurcation coronary artery lesion revascularization of the side branch with regular balloon for the side branch did not show significant improvement at 6/12 follow up particularly for the side branch which still show significant rate restenosis. In bifurcation lesion with significant stenosis of both branches, the restenosis of side branch in high with either provisional or two stent techniques (15%).

Methods: This registry enrolled 40 patients with coronary artery bifurcation lesion. LAD/bifurcational 28 patients, circumflex/posterior marginal branch 8 patients with right coronary artery/ posteriolar descending. posteriolar lateral 4 patients received PCI with Paclitaxel-eluting balloon for the side branch and DES for main branch. Coronary angiogram at 6 months follow up achieved in 50%, a nuclear image was performed in 35% and 15% were following up clinically. The mean age group 60.

Results: Procedure success was achieved to all patients the Pre PCI diameter stenosis was 85.

Conclusion: This small study showed that this technique using DES for the main branch and DEB for the side branch is safe and effective at immediate and 6-12 months follow up with two patient restenosis and no acute and sub acute coronary artery thrombosis. to our knowledge this study is reported for the first time.

TCTAP A-043

Comparison of First versus Second Generation Drug-eluting Stents in Unprotected Left Main Coronary Artery Intervention

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Background: Although there are data comparing the individual drug-eluting stents (DES) in unprotected left main coronary artery (ULMCA) percutaneous coronary intervention (PCI), there is lack of data in overall comparison of first versus second generation DESs. In this present study we are intended to compare the first and second generation DESs in PCI for ULMCA.

Methods: A total 276 consecutive patients (pts) underwent PCI for ULMCA with DESs were enrolled for this study. Patients who received BMS (n=7) were excluded from the study. Study population was classified as two groups; Patients who received first generation DESs (n=199) and second generation DESs (n=87). We analysed 6 months angiographic and 1 year clinical outcomes between the two groups.

Results: Baseline clinical characteristics were comparable between the two groups. There was no significant difference in 6 month angiographic outcomes including follow up minimum lumen diameter (MLD), diameter stenosis (DS) and late lumen loss (LL) (p<0.05), Table 1 and 1 year clinical outcomes including mortality, repeat revascularization, stent thrombosis and major adverse cardiac events (MACE) between the two groups (p>0.05, Table 2).

Conclusion: In PCI for ULMCA, first generation and second generation DESs were comparable regarding 6-month angiographic and 1-year clinical outcomes in a series of Asian population.

Table 1. Six-month angiographic outcomes

<table>
<thead>
<tr>
<th>Variables, mean ± SD</th>
<th>1st generation</th>
<th>2nd generation</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum lumen diameter (MELD mm)</td>
<td>2.6±0.88</td>
<td>2.7±0.81</td>
<td>0.61</td>
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<tr>
<td>% Diameter stenosis (%DS of LAD)</td>
<td>21.1±19.4</td>
<td>21.8±24.4</td>
<td>0.88</td>
</tr>
<tr>
<td>% Diameter stenosis (%DS of LAD)</td>
<td>19.6±20.4</td>
<td>24.5±23.4</td>
<td>0.45</td>
</tr>
<tr>
<td>% Diameter stenosis (%DS of LEX)</td>
<td>40.8±12.8</td>
<td>44.2±12.2</td>
<td>0.73</td>
</tr>
<tr>
<td>Late loss (LL, mm)</td>
<td>0.7±0.03</td>
<td>0.67±0.92</td>
<td>0.56</td>
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Table 2. One-year clinical outcomes

<table>
<thead>
<tr>
<th>Variables, N (%)</th>
<th>1st generation</th>
<th>2nd generation</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality</td>
<td>14 (11.6)</td>
<td>8 (10.0)</td>
<td>0.69</td>
</tr>
<tr>
<td>Cardiac death</td>
<td>9 (7.6)</td>
<td>5 (6.3)</td>
<td>0.72</td>
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<tr>
<td>Q-wave MI</td>
<td>4 (3.4)</td>
<td>1 (1.3)</td>
<td>0.65</td>
</tr>
<tr>
<td>Revascularization</td>
<td>19 (16.0)</td>
<td>8 (10.0)</td>
<td>0.22</td>
</tr>
<tr>
<td>TLR MACES</td>
<td>18 (15.1)</td>
<td>11 (13.8)</td>
<td>0.78</td>
</tr>
<tr>
<td>TLR MACS</td>
<td>27 (22.7)</td>
<td>16 (20.0)</td>
<td>0.65</td>
</tr>
<tr>
<td>Stent thrombosis</td>
<td>2 (1.7)</td>
<td>3 (3.8)</td>
<td>0.39</td>
</tr>
</tbody>
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