BACKGROUND The optimal duration of dual antiplatelet therapy (DAPT) after drug eluting stent (DES) implantation in patients with or without acute coronary syndromes (ACS) is unknown. We aim to evaluate the efficacy and safety of long duration DAPT (L-DAPT) compared to short duration DAPT (S-DAPT) after drug-eluting stent (DES) implantation in patients who presented with or without ACS.

METHODS We searched Medline, Embase, and Cochrane Central Register of Controlled Trials (CENTRAL) to identify randomized controlled trials (RCTs) assessing the effect of L-DAPT versus S-DAPT after DES in patients who presented with ACS and non-ACS. Primary efficacy endpoints were stent thrombosis (ST), myocardial infarction (MI), target vessel revascularization (TVR), all-cause mortality and cardiac mortality. Primary safety endpoints were major bleeding and stroke. Event rates were compared using a random effects model.

RESULTS We identified 3 RCTs (DAPT, ITALIC, RESET) in which 15,587 patients were randomized to S-DAPT versus L-DAPT (4,969 ACS and 10,618 non-ACS). Clinical outcomes with S-DAPT compared with L-DAPT in ACS and non-ACS are summarized in table.

Table. Clinical outcomes with S-DAPT compared with L-DAPT in patients with ACS and non-ACS

<table>
<thead>
<tr>
<th>Category</th>
<th>S-DAPT (n=15,587)</th>
<th>L-DAPT (n=15,587)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>All-cause mortality</td>
<td>4.4%</td>
<td>3.7%</td>
<td>0.16</td>
</tr>
<tr>
<td>Cardiac mortality</td>
<td>5.8%</td>
<td>4.3%</td>
<td>0.12</td>
</tr>
<tr>
<td>MI</td>
<td>0.6%</td>
<td>0.5%</td>
<td>0.88</td>
</tr>
<tr>
<td>Stroke</td>
<td>0.9%</td>
<td>0.8%</td>
<td>0.62</td>
</tr>
<tr>
<td>Target vessel MI</td>
<td>1.8%</td>
<td>2.2%</td>
<td>0.35</td>
</tr>
<tr>
<td>Target vessel revascularization</td>
<td>2.0%</td>
<td>2.0%</td>
<td>0.82</td>
</tr>
<tr>
<td>In-hospital mortality</td>
<td>3.3%</td>
<td>3.3%</td>
<td>0.86</td>
</tr>
</tbody>
</table>

CONCLUSIONS In the present analysis of RCTs in which patients were analyzed according to clinical syndrome acuity, S-DAPT was associated with higher rates of ST and MI, lower rates of major bleeding, and non-significant differences in mortality, with no significant interactions according to ACS vs non-ACS. However, in non-ACS patients the benefit-risk profile favored S-DAPT, with lower all-cause mortality, where the trends were reversed in ACS. Additional studies are required to determine if the benefit-risk profile of S-DAPT vs. L-DAPT varies according to clinical syndrome.

CATEGORIES CORONARY: Acute Coronary Syndromes

KEYWORDS Acute coronary syndromes, Double anti-platelet therapy, Drug-eluting stent

TCT-185

One year Clinical Outcomes in Patients with ST-elevation Myocardial Infarction treated with Bioresorbable Polymer Drug Eluting Stents

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BACKGROUND Use of new generation of DES is related with favorable outcomes in patients with ST-elevation myocardial infarction (STEMI). We sought to assess 1-year clinical outcomes in this patient subset, treated with bioresorbable polymer Nobori DES in a large worldwide registry.

METHODS Among a total of 12,426 patients treated with Nobori DES in a worldwide registry, 1292 (10.7%) had STEMI. All endpoint related adverse events were adjudicated by an independent clinical events committee. The primary endpoint was target lesion failure (TLF) at 1 year.

RESULTS STEMI patients were younger (60.6 vs 63.7 years; p<0.01), with higher percentage of males (79.1% vs 76.1%; p=0.016), and more current smokers (45.3% vs 24.4%; p<0.01) than non-STEMI patients. STEMI patients had less diabetes (22.1% vs 33.9%), hypertension (51.3% vs 73.5%), history or qualification of coronary artery bypass grafting (25.9% vs 19.4%) and congestive heart failure (4.8% vs 7.7%) and peripheral vascular disease (4.7% vs 8.8%) compared with non-STEMI patients (p<0.01 for all). STEMI patients had also fewer previous history of MI (10.1% vs 30.6%) and coronary revascularization (9.1% vs 32.3%) (p<0.01 in both). The pain-to-balloon time was ~3 hours in 57%, between 3 and 6 hours in 22%, between 6 and 12 hours in 13% and >12 hours in 19% of STEMI patients. The median door-to-balloon time was 50 minutes. Lesions were complex (60.2% type B2/C), with 25.3% moderate or severe calcified lesions, and 50.0% contain-ing thrombus. Low perfusion (TIMI 0/1) was observed in 47.2% of lesions before procedure, while after procedure TIMI 3 flow was achieved in 95.3%. 49.1% STEMI patients were located in anterior and 39.6% in inferior walls. 43.4% of all STEMI patients received adjunctive treatment including: hemodynamic support (8.9%), intravenous thrombolysis (14.6%), pre-procedural GP IIb/IIIa inhibitor (9.9%) and/or others (15.5%). Thrombus aspiration was performed in 26.8% of lesions. At 1 year follow up, in STEMI patients the rate of cardiac death was 2.0%, target vessel MI was 1.2%, target lesion revascularization (TLR) was 1.4% and target vessel revascularizations (TVR) was 2.0%. The observed 1 year target lesion failure (TLF) rate was 4.0%. Definite or probable stent thrombosis rate was low (0.85%). In non-STEMI patients those rates were: cardiac death 1.0%, target vessel MI 1.1%, TLR 1.4% and TVR 2.1% respectively. TLF rate was 3.3% and definite or probable stent thrombosis was 0.43%.

CONCLUSIONS Despite a high risk patient subgroup, STEMI patients treated with Nobori DES (n=952) had more than one TLF at 1 year. These data provided safety and efficacy evidence for the use of bioresorbable polymer DES in this complex patient subset.

CATEGORIES CORONARY: Acute Coronary Syndromes

KEYWORDS Chronic total occlusion, Multivessel disease, Non-ST elevation myocardial infarction

BACKGROUND It has been proven that presence of chronic total occlusion (CTO) in other than infarct-related artery (IRA) in patients with NSTEMI is associated with higher rates of in-hospital and long-term mortality than in patients without CTO. However, there is a lack of data regarding the influence of the number of untreated CTOs on early and long-term prognosis in NSTEMI population. Therefore the aim of the study was to comprehensively evaluate the effect of the number of CTOs on 12-month major adverse cardiac events (MACE) in patients with non-ST-segment elevation myocardial infarction (NSTEMI) and multivessel coronary artery disease (MV CAD) treated with percutaneous coronary intervention (PCI).

METHODS The consecutive data of 1242 patients with NSTEMI admitted to the Clinic between 2006 and 2012 were analyzed. Only patients with CTO and treated with PVI treated CTO with PVI and CTO with only one documented CTO and CTO >2 (n=52) - n=52 were included. No further analysis. The differentiation between CTO and acute occlusion was determined by the compilation of the occlusion morphology, electrocardiographic recording and a possible history of previously documented acute coronary event in the same vessel with history or qualified to coronary artery bypass grafting during hospitalization were excluded from further analysis. 545 patients met all study criteria and were divided according to the number of CTOs in coronary angiography; CTO=0 (n=314) - without CTO, CTO=1 (n=179) - with only one documented CTO and CTO>2 (n=52) - with more than one CTO.

RESULTS Baseline clinical and angiographic characteristic differentiated significantly between studied groups. Patients with more than one CTO had significantly higher risk according to GRACE score (CTO=0: 114.2 ± 31.0 pts., CTO=1: 121.6 ± 33.4 pts., CTO>2: 124.7 ± 25.5 pts., p<0.0085). Furthermore, similar trend in the CRSUDA bleeding score was observed (CTO=0: 25 [17–36] pts., CTO=1: 28 [18–40] pts., CTO>2: 32 [21–39] pts., p<0.028). The incidence of 12-month MACE was highest in CTO>2 group (CTO=0: 22.6%, CTO=1: 27.4%, CTO>2: 40.4%, p=0.0088), which was mainly driven by higher mortality rate (CTO=0: 8.3%, CTO=1: 13.4%, CTO>2: 26.9%, p=0.0002). There were no significant differences in percentage of 12-month myocardial infarction (p=0.96) and revascularization caused by acute coronary syndromes (p=0.81) in analyzed groups. After multivariate adjustment for differences in the baseline characteristics, the number of CTOs was an independent factor of 12-month cardiac mortality (p=0.005; hazard ratio [HR]: 1.45, 95% confidence interval [CI]: 1.01–2.10; p=0.045).

CONCLUSIONS In patients with NSTEMI and MV CAD treated with PCI greater number of CTO localized in non-IRA was associated with higher incidence of 12-month MACE and was an independent factor affecting 12 month mortality.

CATEGORIES CORONARY: Acute Coronary Syndromes

KEYWORDS Chronic total occlusion, Multivessel disease, Non-ST elevation myocardial infarction