TCT-372
Coronary artery disease in patients with reduced left ventricular systolic function treated with medical, surgery, or percutaneous coronary intervention: a retrospective review of outcomes within a multicenter healthcare system
Matthew LaBarbera1, Peter Hui2, Richard Shaw1
1California Pacific Medical Center, San Francisco, CA
Background: Patients with multivessel coronary artery disease (CAD) and reduced left ventricular ejection fraction (LVEF) have a high rate of cardiovascular events and are at increased risk for death. Medical therapy is a standard approach for the management of such patients, but it is associated with reduced survival. The current study evaluates the clinical characteristics and outcomes for patients with significant CAD and reduced LVEF treated with medical therapy, CABG, or PCI.
Methods: A retrospective analysis was conducted on consecutive patients in the Sutter Health System in Northern California without prior cardiac catheterization. Patients who underwent coronary angiography between 1/1/2003 and 12/31/2009 and were found to have LVEF ≤35% and significant CAD (left main stenosis 50% or greater, proximal LAD stenosis 70% or greater, or 70% stenosis in 2 or more major epicardial vessels). Patients undergoing emergent cardiac catheterization were excluded. A Cox proportional hazards regression analysis was performed to compare medical therapy, CABG, and PCI for the outcome of long-term survival, adjusting for baseline demographic and clinical characteristics. The Social Security death index was used to assess long-term mortality.
Results: 1345 patients with CAD and reduced LVEF were identified: 498 had PCI, 493 had CABG, and 354 had medical therapy alone. Patients receiving medical therapy alone were more likely to be female, have a history of myocardial infarction, and have a history of heart failure (p<0.001). In-hospital mortality rates for the CABG, PCI, and medical therapy groups were similar (6.7% vs. 5.4% vs. 9.0% ; p=0.118). The 5-year adjusted survival for the CABG, PCI, and medical therapy cohorts was 76%, 65%, and 52%, respectively (p=0.0001).
Conclusions: In a large hospital network, patients with CAD and reduced LVEF had improved long-term mortality when treated with revascularization (CABG or PCI) compared with medical therapy alone. Notably, patients with CAD and reduced LVEF had improved long-term mortality when treated with PCI compared with medical therapy. Further studies are warranted regarding the optimal treatment for patients with CAD and reduced LVEF.

TCT-373
Impact of Epicardial Fat Volume on Coronary Artery Disease in Symptomatic Patients with a Zero Calcium Score
Takayoshi Ito1, Mizuasa Terashima1, Kenya Nasu1, Masashi Kimura2, Yoshitaka Kimotsuki1, Yukitoshi Akiyama1, Kentaro Takashima2, Takahiko Suzuki1
1Toyohashi Heart Center, Toyohashi, Japan
Background: Prevalence of coronary artery disease (CAD) is not fully elucidated in symptomatic patients with a zero calcium score (CS) by computed tomography (CT). Epicardial fat volume (EFV) has been suggested as a predictor of CAD. The aim of our study is to investigate the prevalence of CAD and the impact of EFV on CAD in symptomatic patients with a zero CS with multislice CT (MSCT).
Methods: In this study, 1308 consecutive symptomatic patients who underwent 64-slice MSCT with a zero CS were evaluated. EFV was quantified with CS data sets. Presence of an obstructive plaque (diameter stenosis >50%) and a CT-derived vulnerable plaque, which was defined as a plaque with remodeling index >1.10 and mean CT density value >50% and 30Hounsfield Units, was assessed with a CT coronary angiography. EFV was defined as the area under the receiver-operating characteristic curve for prediction of obstructive and CT-derived vulnerable plaque of 0.75 and 0.75, which was significantly higher than 0.68 and 0.64 for FRS alone (p = 0.02 and p<0.01).
Conclusions: A zero CS doesn’t exclude CAD and EFV can be a useful marker of CAD in symptomatic zero CS patients.

TCT-374
Long-term Survival and Neurological Outcome of In-hospital Cardiac Arrest Patients Rescued by Extracorporeal Cardiopulmonary Resuscitation
In-Ho Choi1, Tae-Gun Shin2, Young-Bin Song2, Joo-Yong Hahn1, Seung-Hyuk Choi1, Hyeon-Cheol Gwon1
1Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea, Republic of
Background: The immediate clinical benefit of extracorporeal cardiopulmonary resuscitation (E-CPR) has been promising in short-term follow-up studies. However, it has not been known whether the benefit of E-CPR persists for more than 1 year. We compared the long-term outcomes of patients who received E-CPR or conventional CPR (C-CPR) and investigated the clinical characteristics of long-term survivors.
Methods: We analyzed a total of 345 adult in-hospital cardiac arrest patients who were continuously supported for longer than 4 days (median of 6.5 days) and explanted upon RV recovery. The preliminary support was divided between E-CPR and C-CPR. The immediate benefit of extracorporeal cardiopulmonary resuscitation (E-CPR) and conventional CPR (C-CPR) group (23.5% versus 5.9%, hazard ratio (HR) = 0.57, 95% confidence interval (CI) = 0.33–0.95, p=0.030). The 2-year survival with minimal neurological impairment was 4-fold higher in E-CPR group than C-CPR group (20.2% versus 5.5%, HR =0.39, 95% CI=0.23–0.65, p=0.001). E-CPR was associated with lower rate of in-hospital cardiac arrest patients received CPR for more than 10 minutes from 2003 to 2009. The long-term survival and neurological outcome of E-CPR (n=85) and C-CPR (n=321) were compared using propensity score-matched analysis.
Results: The 2-year survival with minimal neurological impairment was 4-fold higher in E-CPR group than C-CPR group (20.2% versus 5.5%, HR =0.39, 95% CI=0.23–0.65, p=0.001). E-CPR was associated with lower rate of in-hospital cardiac arrest patients received CPR for more than 10 minutes from 2003 to 2009. The long-term survival and neurological outcome of E-CPR (n=85) and C-CPR (n=321) were compared using propensity score-matched analysis.
Conclusions: The initial survival benefit of E-CPR for cardiac arrest patients was maintained at 2 year.

TCT-375
Optimizing Rotational Atherectomy in High-Risk Percutaneous Coronary Intervention. Insights from the PROTECT II study
Mauricio Cohen1, Abhijit Ghatak2, Neal Kleiman2, Shrihari Naid1, E. Magnus Ohman3, Igor Palacios4, Alan Feldman5, William O’Neill1
1University of Miami Miller School of Medicine, Miami, FL, 2Methodist Research Institute, Houston, USA, 3Winfred University Hospital, New York, USA, 4Oak University Medical Center, Durham, North Carolina, 5Harvard Medical School, Boston, USA
Background: Rotational Atherectomy (RA) is currently recommended for heavily calcified lesions in which standard percutaneous coronary intervention (PCI) techniques would result in suboptimal stent expansion. We sought to determine the optimal RA use associated with minimal incidence of myocardic necrosis in patients undergoing high-risk PCI supported by either intraaortic balloon (IABP) or microaxial flow pumps (Impella).
Methods: We performed a subgroup analysis of patients treated with RA in the PROTECT II trial. The objective was to examine the relationship between myocardic necrosis and the technical parameters burr size, number of passes/patient/lesion, and RA time. Peri-procedural myocardiac infarction (MI) was defined in the study as increase of CK-MB or Troponin >3XULN. Continuous variables were expressed as means ± SD. A P value <0.05 was considered significant.
Results: RA was used in 52 patients of the 448 PROTECT II patients (11.6%). Compared to patients treated without RA, patients undergoing RA were older (72 vs. 67 years, p<0.001), were more likely to have heart failure (96% vs. 86%, p=0.02), prior CABG (48 vs. 32%, p=0.02), higher STS score (8.1 vs. 5.7, p=0.04), and higher Syntax score (40 vs. 29, p<0.0001). Myocardic necrosis occurred in 25% of RA cases. Of note, lesion length was similar in patients with and without myocardic necrosis (39 vs. 38 mm, p=0.96). Prolonged RA time was associated with increased incidence of peri procedural myocardic necrosis (Table).

<table>
<thead>
<tr>
<th>Variable</th>
<th>MI (n=12)</th>
<th>No MI (n=40)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bur size (mm)</td>
<td>1.7 ± 0.2</td>
<td>1.6 ± 0.2</td>
<td>0.18</td>
</tr>
<tr>
<td>Number of passes/lesion</td>
<td>3.0 ± 1.7</td>
<td>2.7 ± 1.9</td>
<td>0.36</td>
</tr>
<tr>
<td>Number of passes/patient</td>
<td>6.4 ± 3.6</td>
<td>4.7 ± 3.8</td>
<td>0.15</td>
</tr>
<tr>
<td>RA time (seconds)</td>
<td>85.9 ± 53.8</td>
<td>55.3 ± 47.2</td>
<td>0.03</td>
</tr>
</tbody>
</table>

Conclusions: RA continues to be utilized in high-risk PCI procedures. Our study suggests that longer RA time is associated with myocardic necrosis in patients undergoing high-risk PCI. Optimal RA technique must balance the risk of myocardic necrosis against the imperative to achieve a good luminal result.

TCT-376
SIMPLIFIED DE Study - Single center IMPella LVAD supported Pci in High risk group of patients – Detroit Medical Center Experience – Clinical Outcomes
Haroon Faruq1, Tamam Mohamad2, Rojit Amir3, Hassan Ismail4, Obrad Kokanovic1, Anwson Robinson1, Sabeeh Siddiquil, Muhammad Shalduz1, Theresa Schreiber1
1Detroit Medical Center Cardiocascular Institute Wayne State University, Detroit, MI
Background: Advances in percutaneous interventional techniques and technology have made percutaneous coronary intervention (PCI) for left main and ostial lesions a viable option. Left main intervention was re-classified in the recent ACC guidelines from III to IIb based on the large randomized Syntax trial. Though patients with high Syntax score still continue to benefit from CABG, in ‘real-world’ clinical practice patients

POSTERS