CORONARY

CRT-100.00

Prognostic Impact of Thrombus Aspiration in Patients with STEMI: A Report From the Swedish Coronary Angiography and Angioplasty Registry

Elmir Omerovic
Sahlgrenska University Hospital, Gothenburg, Sweden

BACKGROUND Routine intracoronary thrombus aspiration before primary percutaneous coronary intervention (PCI) in STEMI patients does not seem to reduce mortality but may reduce stent thrombosis and reinfarction. The aim of this observational study was to evaluate the impact of thrombus aspiration on mortality and stent thrombosis using all available data from the national all-inclusive Swedish Coronary Angiography and Angioplasty Registry (SCAAR).

METHODS We included all consecutive patients registered in SCAAR between January 2005 and September 2014 undergoing PCI for STEMI. We used instrumental variable analysis (for hidden selection bias) with propensity score to evaluate the effect of thrombus aspiration on stent thrombosis and mortality at thirty-days and one-year. Administrative region was employed as treatment-preference instrumental variable using two-stage least squares regression. The variables used to calculate the propensity score were: age; sex; hypertension; hyperlipidaemia; smoking status; diabetes; arterial access site; severity of coronary artery disease; completeness of revascularization; prior MI, coronary by-pass surgery and/or PCI; use of drug-eluting stents; cardiogenic shock and procedural success.

RESULTS In total, 42,645 patients were included in the study of whom 10,653 (25%) were treated with thrombus aspiration. There were 2659 (6.2%) deaths at thirty-days and 3745 (8.7%) at one-year and 255 (0.5%) cases of stent thrombosis at thirty-days and 409 (0.9%) at one-year. Mortality was not different between the groups at thirty-days (risk reduction -1.9; 95% CI -6.3 to 2.4; P=0.56) or at one-year (risk reduction -1.7; 95% CI -7.3 to 3. 9; P=0.38). Thrombus aspiration was associated with a lower risk of stent thrombosis both at thirty-days (risk reduction -3.1; 95% CI -4.5 to -1.6; P<0.001) and at one-year (risk reduction -3.3; 95% CI -5.1 to -1.5; P<0.001). However, a landmark analysis after thirty-days showed no effect of thrombus aspiration on stent thrombosis at one-year (risk reduction -0.27; 95% CI -1.4 to 0. 81; P=0.63).

CONCLUSION Mortality was not different between the groups. Thrombus aspiration before primary PCI was associated with decreased risk of stent thrombosis. While our study provides important evidence for external validity of the two largest RCTs with thrombus aspiration regarding mortality, future studies should determine whether this treatment may be cost-effective for prevention of stent thrombosis even in the absence of mortality benefit.

CRT-100.01

Abstract Withdrawn

CRT-100.02

Treatment of Severely Calcified Coronary Lesions With the Coronary Orbital Atherectomy System Micro Crown: Early Results From the COAST Trial

Richard A. Shlofmitz,[1] Shigeru Saito,[2] Samin K. Sharma,[3]
Gregg W. Stone[4]
[1]St. Francis Hospital–The Heart Center, Roslyn, NY; [2]Shonan Kamakura General Hospital, Kamakura, Japan; [3]Mount Sinai Medical Center, New York, NY; [4]Columbia University Medical Center, New York, NY

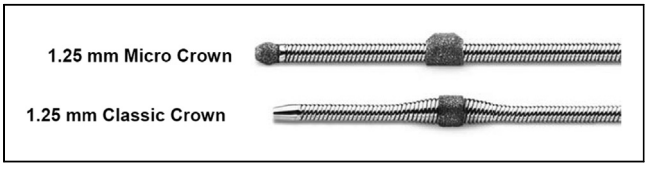
PURPOSE Historically percutaneous treatment of calcified coronary lesions has been associated with a higher frequency of angiographic complications, restenosis, stent thrombosis, and target lesion revascularization. The Diamondback 360 Coronary Orbital Atherectomy System (OAS) Classic Crown was the first device approved by the Food and Drug Administration indicated specifically to prepare de novo, severely calcified coronary lesions for stent placement. Currently the next generation Diamondback 360 Coronary OAS Micro Crown is under investigation in both the U.S. and Japan in the COAST study.

METHODS The COAST study is prospective, single-arm, multi-center, global clinical trial designed to evaluate the performance of the Coronary OAS Micro Crown in treating de novo, severely calcified coronary lesions prior to stent deployment. The Coronary OAS Micro Crown utilizes an eccentrically rotating, 1.25 mm diamond-coated crown which reduces plaque on the vessel wall via centrifugal force to enable successful stent delivery. The primary difference between the Coronary OAS Classic Crown and OAS Micro Crown is the amount and method of off-set mass. Specifically, the OAS Micro Crown has an eccentric crown while the Classic Crown is positioned concentrically on an eccentric bump on the driveshaft (Figure). This allows the OAS Micro Crown to rotate at lower speeds while creating an orbit similar to the OAS Classic Crown. In addition, the OAS Micro Crown has a newly designed driveshaft that contains a diamond coated tip bushing to aid the crown in reaching the target lesion. Procedural success, defined as facilitating stent delivery with <50% residual stenosis after Coronary OAS Micro Crown and no in-hospital Major Adverse Cardiac Events (MACE), will be used to evaluate the efficacy of the device. Thirty-day MACE, defined as a composite of cardiac death, target vessel revascularization, and myocardial infarction, will be used to measure device safety.

RESULTS A total of 100 subjects (26 Japan and 74 U.S.) were enrolled in the COAST trial. For the first time at CRT 2016, procedural success endpoint data will be presented.

CONCLUSION Adequate modification of severely calcified plaque is an important step to achieve successful stent delivery in a historically difficult-to-treat lesion subset. The COAST trial was designed to assess the Coronary OAS Micro Crown in treating severely calcified lesions to facilitate stent deployment.

Caution - Investigational Device. Limited by Federal (or United States) law to investigational use.



CRT-200.00

Effect of Ivabradine on the Infarct Size and Remodeling in Patients With Stemi

Ahmed A. Eissa
Cardiovascular Hospital, Cairo, Egypt

OBJECTIVE To assess the effect of ivabradine on LV function and remodeling in patients with STEMI immafter primary PCI (PPCI).

METHODS Fifty seven patients who presented with STEMI within the time window of reperfusion (12hrs) were included in our study. These patients were divided into two groups: Group 1: optimal medical treatment (OMT) including beta-blockers +Ivabradine; Group 2: OMT including beta-blockers without Ivabradine. within 24 hours of PPCI all the patients did baseline echocardiography (LVEF, LVEDD, LVESD) and SPECT (LVEF, LVEDV, LVESV, 17-segment score). After 21 days, echocardiography and SPECT study were repeated.

RESULTS our patients were predominantly males (84.2%) with mean age of 48.8±10.53 yrs. All the patients underwent PPCI and the most revascularized vessel was LAD (93%). Admission HR was 95.71±12 bpm. Both groups revealed no significant difference after 21 days of treatment apart from significant HR reduction to 68 bpm with Ivabradine (group I) (P<0.001). Subgroup analysis of Group I diabetic patients with HR>100bpm showed significant reduction of echocardiographic LVESD by -4.80±2.09 mm; (P=0.015) and significant improvement of SPECT LVEF to +14.10±7.06 % (P =0.03).

CONCLUSION In the setting of STEMI treated with PPCI, Ivabradine significantly reduced the HR. In a subgroup of Diabetic patients with HR > 100bpm, Ivabradine significantly reduced the echocardiographic LVESD and improve the SPECT LVEF.