

TCTAP A-044

Prognostic Value of N-terminal Pro-brain Natriuretic Peptide in Patients Undergoing Percutaneous Coronary Intervention with Left Main Coronary Artery Disease

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Background: It has been known that SYNTAX (Synergy between Percutaneous Coronary Intervention (PCI) with TAXUS and Cardiac Surgery) score (SS) could provide prognostic information in patients underwent unprotected left main (LM) PCI. However, little is known about the prognostic value of N-terminal pro-B type natriuretic peptide (NT-proBNP) in these patients. The aim of this study is to assess 1) the association between SS and NT-proBNP and 2) prognostic value of NT-proBNP predicting major adverse cardiac events (MACEs).

Methods: Between June 2006 and December 2012, 283 patients (209 men; mean age = 64.7±10.7 year-old) underwent unprotected LM PCI were analyzed in this study. The mean follow-up duration was 870±744 days.

Results: Log-transformed NT-proBNP levels was significantly higher in patients with higher SS (p for trend =0.014) and complex LM disease (p for trend = 0.001). During the follow-up, 62 (21.9%) MACEs and 20 (7.1%) deaths occurred. Log NT-proBNP level was significantly higher in patient with MACEs (6.50±2.26 versus 5.57±1.51, p =0.003) and death (7.64±2.39 versus 5.63±1.60, p =0.001). In Cox proportional hazards model, log NT-proBNP was an independent predictor of 12-month MACEs (hazards ratio [HR] 1.213, 95% confidence interval [CI] 1.020 – 1.442; p =0.029) and 12-month MACEs (HR 1.435, 95% CI 1.027 – 2.005; p =0.034) after adjusting for conventional clinical risk factors. In subgroup analysis, log NT-proBNP levels were significantly higher in patients with positive cardiac biomarker. The MACEs (28.1% versus 16.8%, p =0.022) and mortality (13.3% versus 1.9%, p <0.001) were also significantly higher in those patients.

Conclusion: In patients underwent unprotected LM PCI, NT-proBNP was associated with SS and was an independent prognostic factors for clinical outcome, particularly in high-risk patients.

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Impact of Diabetes Status on Long-term (6 Years) Outcomes After Percutaneous Coronary Intervention of Left Main Disease: Result from a Real World Experience of 1,528 Consecutive Patients

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Background: Scant data exist regarding the impact of diabetes mellitus (DM) status on percutaneous coronary intervention (PCI) for left main (LM) coronary artery disease. We sought to compare the impact of the presence of DM at baseline among pts undergoing LM PCI on long-term ischemic outcomes.

Methods: Data from all consecutive patients from a single center were prospectively collected. Pts were stratified according to the presence or absence of DM at baseline. Coronary angiograms were analyzed by an independent angiographic core laboratory and all events adjudicated by an independent clinical events committee. Adverse ischemic outcomes were compared between the 2 groups up to 6-year follow-up.

Results: Between Jan 2004 and Dec 2010, 1,528 consecutive pts underwent LM PCI. DM was present in 369 (24.1%) pts. Pts with DM were more likely to have increased weight, prior MI, hypertension, dyslipidemia and prior stroke. Angiographically, DM pts presented more frequently with 3-vessel-disease, 1,1,1 Medina bifurcation and higher baseline SYNTAX score. Despite having more lesions treated and more stents implanted, DM pts had higher residual SYNTAX score after revascularization. One-year dual antiplatelet therapy compliance rates were high among the complete cohort (95.3%) and similar between both groups. At 6-year follow-up, no differences were seen in rates of all-cause death (6.0% vs. 4.7%, p = 0.36) and definite/probable stent thrombosis (ST; 1.6% vs. 1.7%, p = 0.90) between groups. However, DM pts had a higher rate of target lesion revascularization (TLR; 8.4% vs. 4.4%, p = 0.005), target vessel revascularization (TVR; 13.6% vs. 8.1%, p = 0.003), and stroke (4.9% vs. 1.3%; p = 0.002). By multivariate analysis, DM was identified as a strong independent predictor of stroke (HR = 3.09; 95% CI 1.52-6.29, p = 0.002), TLR (HR = 2.10; 95% CI 1.30-3.38, p=0.002) and TVR (HR = 1.66; 95% CI 1.15-2.39, p = 0.006). **Conclusion:** Among this large series of consecutive pts undergoing LM PCI, DM was not associated with an increase in death or ST, but was independently predictive of stroke, TVR and TLR at 6-year follow-up.

TCTAP A-046

Comparison of Two-and Three-dimensional Quantitative Coronary Angiography to Intravascular Ultrasound in the Assessment of Left Main Bifurcation Lesions

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Background: Angiographic evaluation of left main coronary bifurcation lesions (LMBs) is often limited. Dedicated two-dimensional (2D) bifurcation quantitative coronary angiography (QCA) with segmental analysis of the bifurcation provides accuracy for quantification of the degree of stenosis in the main vessel and especially the side branch ostium. Nevertheless, the 2D QCA is dependent on the angiographic view analysed and can be affected by foreshortening and variable magnification. Three-dimensional (3D) QCA has recently developed to overcome 2D QCA limitations, however, accuracy and precision of 3D bifurcation QCA measurements in LMCA bifurcation lesions has not been established compared to a gold standard.

Methods: We investigated whether 3D QCA and 2D QCA measurements differed in their accuracy in predicting the presence of significant LMCA bifurcation lesions, which defined as a minimum luminal area (MLA) <6 mm² of LMCA, or MLA <4 mm² for proximal LAD and proximal LCX by intravascular ultrasound (IVUS). 2D and 3D QCA were compared in their measurements of minimum luminal diameter, percent diameter stenosis, minimum luminal area, and percent area stenosis and in their prediction of IVUS cut-off values.

Results: In total 44 LMBs were interrogated in 44 patients undergoing elective percutaneous coronary intervention. Of all measurements of lesion severity obtained by 3D QCA, MLA best correlated with IVUS cut-off values of three vessel segments (LMCA: R = 0.84, P < 0.0001; LAD: R = 0.53, P = 0.0002; LCX: R = 0.66, P < 0.0001, respectively). Of 2D QCA measurements, MLD and MLA correlated best with IVUS cut-off values (LMCA: R = 0.81, P < 0.0001; LAD: R = 0.54, P = 0.0001; LCX: R = 0.58, P < 0.0001, respectively). Overall, the C statistics tended to be slightly higher for 3D- and 2D-QCA measurements in LMCA compared with ostial LAD and LCX, and there were nonsignificant predictive power of percent diameter stenosis and percent area stenosis on 3D QCA for LCX IVUS MLA <4 mm² (percent diameter stenosis: area under curve 0.55, cutoff 23%, sensitivity 88%, specificity 37%, p =0.6186; percent area stenosis: area under curve 0.56, cutoff 41%, sensitivity 83%, specificity 38%, p = 0.5184, respectively).

Conclusion: The accuracy of QCA in predicting the presence of significant LMBs is limited. Where IVUS is not available or contraindicated, 3D-QCA may assist in the evaluation of intermediate LMBs with MLA. Among 2D- and 3D-QCA, absolute parameters such as MLD and MLA are more accurate than percent parameters.

TCTAP A-047

Stent Patency in Bangladeshi Patient Population- A Prospective Cohort Study of 577 Patients for a Period of 3.4yrs

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Background: Coronary artery disease (CAD) is one of the leading causes of death in Bangladeshi population. Now a day, many of these patients are treated by PCI with stent deployment. However, Long term data on the development of In-stent re-stenosis (ISR) in these patient is not well addressed. Therefore, the aim of our present study was to assess long-term outcome of stent patency or the development of ISR of varieties stent in single vessel territory.

Methods: Patients were selected retrospectively from a prospective cohort of total 577 patients, who underwent coronary angiogram at our hospital for further evaluation of their previous PTCA site in the 3-36 months preceding the study for the quantifying period of 2006-2012. Among them, male: female were 474: 103. Average age was Male: 56; Female: 59. Average study period was 3.4 ±2.5 yrs.

Results: Among the studied population, our result shows that 82.1% (474) were male and 17.9% (103) were female. Female were more obese than male BMI (27 vs 26). Among the CAD risk factors; Dyslipidemia 84.2 % (486), HTN 77.1% (445), DM 61.7% (356), FH 21.7% (125), Hypothyroidism 1.2 % (7) and smoking 27.2% (129) were all male smoker. Total 864 stent were deployed in 785 vessels. Common stented territories were in LAD 366 (46.6%), LCX 183 (23.3%) and RCA 236 (30.1%). Stent used were BMS 105(30.8%), DES 236 (69.2). Territory wise total number of deployed stent in LAD 396(45.8%), LCX 196(22.7%) and RCA 272(31.5%). Re-look Coronary Angiogram (CAG) revealed that the patency of stents in BMS 210(56.5%) and DES 308 (73.5%) treated vessel. Significant ISR (ISR>60%) developed in BMS 97(26.1%) and DES 74(17.6%).

Conclusion: In this prospective cohort of 577 patients for an average period of 3.4 yrs, we are able to show that DES has better patency with reduced ISR than BMS, in Bangladeshi patient population.