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Impact of Percutaneous Coronary Intervention on 12-month Chronic Total Occlusion Outcomes in Patients with New Onset Heart Failure

Seung-Woon Rha, Byoung Geol Choi, Se Yeon Choi, Yoonjee Park, Akkala Raghavender Goud, Hu Li, Sunki Lee, Ji Bak Kim, Sung Il Im, Jin Oh Na, Cheol Ung Choi, Hong Euy Lim, Jin Won Kim, Eung Ju Kim, Chang Gyu Park, Hong Seog Seo, Dong Joo Oh
Korea University Guro Hospital, Seoul, Korea (Republic of)

Background: Heart failure is known to be associated with increased adverse clinical outcomes in coronary artery diseases. The impact of percutaneous coronary intervention (PCI) for chronic total occlusion (CTO) in patients (pts) with new onset heart failure is not clear. We compared the 12-month clinical outcomes of pts treated by PCI with optimal medical therapy (OMT) for CTO lesions in pts with new onset heart failure.
Methods: A total of 458 consecutive CTO pts newly diagnosed with heart failure or showing symptoms of heart failure (NYHA ≥class 2 or CCS ≥class 2) were divided into 2 groups; one group underwent PCI (PCI group; n=246) and the other group was treated with OMT (OMT group; n=212). Major clinical outcomes were compared between the two groups up to 12 months.
Results: At baseline, the OMT group had a higher prevalence of elderly, cerebrovascular accidents, de novo lesion, left main disease, multivessel disease, multivessel CTO, RCA-CTO, and abundant collaterals (≥grade 2), whereas the PCI group had a higher prevalence of male gender, prior MI, prior PTCA and LAD-CTO lesions. Clinical outcomes at 12 months were similar between the 2 groups except lower mortality in the PCI group (Table). After baseline adjustment by multivariate analysis, however, there was no difference between the 2 groups.
Conclusion: In our study, mechanical revascularization by PCI for CTO lesions in pts with new onset heart failure as compared with OMT seems to have no benefit in reducing 12-month mortality. Long-term follow up with a larger study population will be necessary for further determination.

Table. 12-month clinical outcomes

Variable, n (%)	PCI group (n=244)	OMT group (n=182)	P Value (Unadjusted)	P Value (Adjusted)	OR (95%CI)
Mortality	7 (2.8)	15 (8.2)	0.013	0.491	0.65 (0.19-2.17)
Cardiac death	5 (2)	8 (4.3)	0.164	NS	-
Non cardiac death	2 (0.8)	6 (3.2)	0.062	NS	-
Myocardial infarction; MI	5 (2)	7 (3.8)	0.267	0.620	0.69 (0.16-2.93)
Q wave MI	4 (1.6)	4 (2.1)	0.674	NS	-
Non Q wave MI	1 (0.4)	3 (1.6)	0.190	NS	-
Revascularization	25 (10.2)	15 (8.2)	0.483	0.675	0.84 (0.38-1.887)
TLR	21 (8.6)	3 (1.6)	0.002	0.086	3.21 (0.84-12.21)
TVR	25 (10.2)	13 (7.1)	0.266	NS	-
Non TVR	1 (0.4)	3 (1.6)	0.190	NS	-
All MACE	32 (13.1)	29 (15.9)	0.411	0.643	0.85 (0.43-1.67)
TLR MACE	26 (10.6)	13 (7.1)	0.214	NS	-
TVR MACE	32 (13.1)	27 (14.8)	0.611	NS	-

Adjusted by gender, age, myocardial infarction, hypertension, diabetes, chronic kidney disease, current smoker, multivessel disease, collateral vessels(≥grade 2), and failed CTO

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Comparison in Cardiac Remodeling Between Surgical Treatment and Device Closure of Atrial Septal Defect

You-Mi Hwang, Ji Hoon Kim, Keon Woong Moon, Ki-Dong Yoo, Chul-Min Kim, Mi-hyang Jung, Soo-Yeon Jung, Gee-Hee Kim
St.Vincent's Hospital, Suwon, Korea (Republic of)

Background: Atrial septal defect (ASD) is the 2nd most common congenital heart anomaly in adults. As treatment options, there are operative ASD closure (Surgery) and percutaneous device closure (Device). The aim of this study was to elucidate the cardiac remodeling after ASD closure and to compare the effects of Surgery and Device in similar ASD size.
Methods: Among patients who underwent ASD closure in Catholic medical school, St. Vincent's Hospital from January 2004 to December 2012, 28 patients were enrolled. Transthoracic echocardiography (TTE) was performed before and after correction of the ASD in both Surgery and Device groups.
Results: Although there were significant differences in age and ASD size in both groups, after closing ASD, LV dimension increased in both groups, on the other hand, decrease in right atrium volume (RAVol) and maximum regurgitation velocity of tricuspid valve (TR Vmax) was noted. Aortic diameter and LV ejection fraction increased in Surgery group. Further subgroup analysis with ASD size of 13 to 24mm was analyzed to compare differences in cardiac remodeling between the two groups. There were coherent results of increase of LV dimension and reduction of TR Vmax and RAVol in both subgroups. However, RAVol reduction was more remarkable in Surgery than Device subgroup.
Conclusion: Although there was difference in baseline parameters between two groups, which may have affected the choice of treatment option, the parameters measured by TTE showed significant change in structural cardiac remodeling. By subgroup analysis regarding to ASD size, showed consistent improvements in cardiac geometry without significant difference between the groups. In conclusion, in selected cases of ASD, it is reasonable to treat percutaneously considering complication occurrence, post-procedural recovery, and hospital stay.

Drug-eluting Stents (TCTAP A-166 to TCTAP A-171)

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Angiographic Characteristics and Clinical Outcomes of the Use of Dual Therapy Stent

Jiang Ming Fam[1], Rena Cai Zuan Lim[1], Yee How Lau[2], Kay Woon Ho[1], Chee Tang Chin[1], Paul Toon Lim Chiam[1], Khung Keong Yeo[1], Jack Wei Chieh Tan[1], Soo Teik Lim[1], Tian Hai Koh[1], Aaron Sung Lung Wong[1]
[1]National Heart Centre Singapore, Singapore, Singapore, [2]Singapore Cardiac Data Bank, Singapore, Singapore

Background: A novel dual therapy stent (DTS) may improve clinical outcome due to a combination of sirolimus drug elution and endothelial progenitor cell technology for reduced restenosis and accelerated endothelisation. However clinical data remains limited on the use of this novel technology. We aim to report on the use of a novel DTS device in our centre.
Methods: All patients who underwent PCI with the Combo^{R} DTS in our centre were enrolled. All patients underwent diagnostic angiograms and PCI according to guideline recommended indications and techniques. Baseline clinical and angiographic characteristics were collected. Clinical outcomes for MACE at 6 and 12 months were studied.
Results: Fifty three patients (83% male) of mean age 61.42 +/- 11.63 years were studied. 15.1% (n= 8), 24.5% (n= 13) and 60.4% (n= 32) were admitted for STEMI, ACS and Stable angina respectively. The prevalence of hypertension, hyperlipidaemia and diabetes mellitus were 88.7% (n=47), 75.5% (n= 40) and 50.9% (n= 27) respectively. 12.7% (n= 7) had left main disease and 41.8% (n= 23) had triple vessel disease. 69 Combo^{R} DTS with a mean diameter of 3.06 +/- 0.35 mm and a mean length of 22.07 +/- 5.55 mm were implanted. 50.7% (n= 35), 11.6% (n= 8) and 39.0% (n= 20) were implanted in the LAD, LCx and RCA respectively. 4.3% (n= 3) were deployed in the left main artery and in bypass grafts respectively. There were 10.1% (n=9), 69.6% (n=48) and 20.3% (n= 14) ACC/ AHA angiographic type A, B and C lesions. 6 (8.7%) and 7 (10.1%) were CTO and bifurcation lesions respectively. Angiographic success rate was 100%. There were no cases of stent thrombosis or inhospital mortality.
Conclusion: The use of Combo^{R} DTS was associated with excellent angiographic and short term clinical outcome in this study. We plan to report on 6 month clinical outcomes at the time of presentation.

TCTAP A-167

Bioabsorbable Vascular Scaffolds (BVS) Eluting with Everolimus: for Percutaneous Coronary Intervention (PCI) of Patients with De-novo Coronary Artery Lesion: Our Experiences at Apollo Hospitals Dhaka

Shams Munwar, Ahm Waliul Islam, Shahbudin Talukder, A. Q. M. Reza, Tamzeed Ahmed, Azfar H. Bhuiyan, Rowsan Masud, Atique B. Siddique
Apollo Hospitals Dhaka, Dhaka, Bangladesh

Background: Aim of the study was to evaluate the primary procedural success of percutaneous coronary intervention (PCI) of *de-novo* coronary artery lesion by using BVS Absorb stents eluting with Everolimus.
Methods: Total 16 patients were enrolled in this very preliminary study of BVS absorb. Among them, Male: 11 and Female: 5. Total 20 stents were deployed. Mean age were for Male: 56 yrs, for Female: 60 yrs. Associated CAD risk factors were Dyslipidemia, High Blood pressure, Diabetes Mellitus, Positive FH for CAD and Smoking (all male).
Results: Among the study group; 13 (81%) were Dyslipidemic, 10(62.5%) were hypertensive; 6 (37.5%) patients were Diabetic, FH 3(18.75%), and 2(18%) were all male smoker. Female patients were more obese (BMI M 25: F 27) and developed CAD in advance age. A common stented territory was for LAD: 6 (37.5%), LCX 5 (25%), RCA 6(37.5%). One patient had both LCX and LAD stenting. Total 3 patients had double/overlapping stent in RCA lesion. Territory wise distributions of BVS Absorb stent were for LAD 6(30%), RCA 9 (45%), and LCX 5 (25%).

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