

CHRONIC TOTAL OCCLUSION

CRT-142

Assessment of Left Ventricular Function Pre and Post Percutaneous Coronary Intervention to Chronic Total Coronary Occlusion Doppler Tissue Imaging Study

Wassam El Din H. El Shafey

Menoufia University Hospital, Shebeen El Kom, Egypt

BACKGROUND The rationale for the recanalization of a chronic total coronary occlusion is the possible improvement of left ventricular function through the recovery of hibernating myocardium. TDI can be used for assessment of both global and regional LV function with high temporal and spatial resolution. Purpose: Assessment of LV function before and after CTOPCI by PW-TDI.

METHODS The study enrolled 40 patients with CTO, 37 patients succeeded to complete the final follow up, 22 patients were without infarction in the territories of recanalized CTO vessel (group I), 15 patients with infarction in CTO territories of recanalized CTO vessel (group II). All were subjected to conventional echo Doppler and DTI examination. PW-DTI was used to assess velocity curves of basal and mid segments of LV walls. The following indices were measured Tp, Sv, E', A', E'/A', Acc IVC, IVRT, IVCT, CT and TEI index.

RESULTS After recanalization of CTO vessel by PCI non infarction group of patients showed highly significant improvement of LVEF% after 3 months follow up ($P < 0.001$) while infarction group did not show any significant improvement ($P = NS$). In LAD, LCX and RCA subgroup non infarction patients showed reduction in LVESv, increased FS% and EF% after 3 months follow up, also there was improvement of TDI parameters in the form of increased E' and ACC of IVC in all 3 subgroups and increased E'/A' in LAD and LCX and increased in Peak velocity of IVC and reduction of A' and time to peak of IVC in both LAD and RCA, only S wave velocity increased in LAD subgroup after 3 months F.U.

CONCLUSION Patients with CTO, Acc. of IVC measured by PW-TDI is differentiating early improvement after successful recanalization of CTO by PCI, Non infarction territories might recover at earlier stage than patients with MI.

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The Impact Of Presence Of The Chronic Total Occlusion On The Prognosis Of The Patients With Preserved Left Ventricular Function After Suffering From Acute Myocardial Infarction

Yukio Mizuguchi, Akihiko Takahashi, Takeshi Yamada, Norimasa Taniguchi,

Shunsuke Nakajima, Tetsuya Hata

Sakurakai Takahashi Hospital, Kobe, Japan

BACKGROUND Chronic total occlusion (CTO) in the non-infarcted-related artery was reported to worsen immediate clinical outcome in patients with acute myocardial infarction (AMI). However, the prognosis of such patients with preserved left ventricular function has not been clarified yet. Our objectives were to evaluate whether the presence of CTO solely contributes to worsen the prognosis in the patients with well-preserved heart function after primary PCI.

METHODS We retrospectively evaluated 353 consecutive AMI patients with preserved left ventricular pump function (left ventricular ejection fraction; LVEF $\geq 40\%$) who underwent primary percutaneous coronary intervention (PCI) in our hospital between January 2008 and December 2012. AMI patients complicated with cardiopulmonary arrest out of the hospital ($n = 33$), having the left main trunk culprit lesion ($n = 23$), and diagnosed after 24 hours from the symptoms onset ($n = 62$) were excluded from total study population. The patients required to an extracorporeal membrane oxygenator (ECMO) for hemodynamic support during and after PCI were excluded because LVEF could not be evaluated accurately due to influence on hemodynamics by ECMO.

RESULTS Of those, 25 (7.0%) patients had CTO lesions in a non-infarct related artery (CTO patients). The LVEF estimated by echocardiography after primary PCI was similar between CTO patients and patients without CTO lesion (non CTO patients) ($55.1 \pm 8.6\%$ vs $58.0 \pm 9.4\%$; $p = 0.07$). CTO patients were significantly more likely to be associated with cardiogenic shock (24.0% vs 7.6% ; $p < 0.05$) and to require intraaortic balloon pumping (56.0% vs 12.5% ; $p < 0.001$) compared with non CTO patients. Thirty-days mortality was significantly higher in CTO patients as compared with non CTO patients (12.0% vs 0.9% ; $p < 0.001$). By multivariate analysis, 30-days survival as well as cardiogenic shock were independently associated with CTO (odds ratio [OR] 20.42, 95% CI 3.38-123.29, $p < 0.001$, OR 3.99, 95% CI 1.46-10.92, $p < 0.01$, respectively).

CONCLUSIONS In patients with AMI, even if their LVEF were preserved, CTO was strongly associated with cardiogenic shock and high mortality.

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Percutaneous Intervention in Chronic Total Coronary Occlusions Due To In-stent Restenosis: A Multicenter Registry

Asier Subinas,¹ Mario Sádaba,¹ José Ramón Rumoroso,¹ Victoria Martín-Yuste,² Felipe Hernández,³ Manuel Pan,⁴ Luis Teruel,⁵ José Moreu,⁶ José María De La Torre,⁷ Hugo Vinhas,⁸ Inigo Lozano,⁹ Javier Goicolea,¹⁰ Armando Pérez De Prado,¹¹ Javier Martín Moreiras,¹² José Domingo Cascón,¹³ Alfonso Suárez,¹⁴ José María Cubero¹⁵

¹Galdakao-Usansolo Hospital, Bilbao, Spain; ²Hospital Clinic, Barcelona, Spain; ³Hospital 12 Octubre, Madrid, Spain; ⁴Hospital Reina Sofía, Córdoba, Spain; ⁵Hospital Bellvitge, Barcelona, Spain; ⁶Hospital Virgen de la Salud, Toledo, Spain; ⁷Hospital de Valdecilla, Santander, Spain; ⁸Hospital García de Orta, Almada, Portugal; ⁹Hospital de Cabueñes, Gijón, Spain; ¹⁰Hospital Puerta de Hierro, Madrid, Spain; ¹¹Hospital de León, León, Spain; ¹²Hospital de Salamanca, Salamanca, Spain; ¹³Hospital de Cartagena, Cartagena, Spain; ¹⁴Hospital Central de Asturias, Oviedo, Spain; ¹⁵Hospital de Valme, Sevilla, Spain

BACKGROUND Limited data exist on the treatment of chronic total occlusions (CTO) due to in-stent restenosis (ISR). Native coronary artery CTO is relatively rare after stenting and it is an understudied subgroup of CTO interventions.

METHODS All patients undergoing an attempt of percutaneous coronary intervention (PCI) due to occlusive ISR were included in our registry among 15 hospitals. CTO was defined as a coronary obstruction with TIMI flow 0 with an estimated duration of more than 3 months. A total of 233 consecutive interventions in CTOs due to ISR were reported. Basal characteristics and angiographic features were reported. Our study sought to evaluate PCI related success rate, procedural techniques and outcomes on follow up among PCI-Success and PCI-Failure groups. Ischemia driven target lesion (TLR) and target vessel (TVR) revascularization, binary restenosis, thrombosis and MACE (TLR or TVR or CABG or all cause MI or cardiovascular death) rates were also evaluated among both groups. Analyses were performed using the software packages SPSS 15.0.

RESULTS Mean age was 63 ± 11 y, and 79% were men. The target lesion was located in the right coronary artery in 47%, left anterior descending in 34.6%, circumflex in 18%. Basal and angiographic features in both groups were similar. The CTO was successfully treated in 83% of cases. Drug-eluting stents were used in 88% of cases to treat the lesion. Procedural success was lower in circumflex artery when comparing with other target vessels (86% vs. 69%; $p = 0.008$). Coronary dissection (5.2%) and coronary perforation without pericardial tamponade (4.5%) were more frequent complications.

The median length of the follow-up was 21.2 months and the follow-up rate was 87%. No routine angiographic follow-up was done. In the PCI-success group, ischemia driven TLR, TVR and binary restenosis/reocclusion rates were 14.9%, 15.6% and 21.5% respectively. Two definitive stent thrombosis, 1 probable and 2 possible were reported (ARC criteria). MACE at 12 months was 18% in PCI-Success group vs. 20.6% in PCI-Failure group ($p = NS$). Cardiac and total mortality were 2.8% vs. 7.9% ($p = 0.15$) and 4.5% vs. 10.5% ($p = 0.23$) respectively.

CONCLUSION Our registry showed success rates in ISR CTO interventions comparable to those achieved in de novo coronary occlusions. Clinically relevant restenosis, TVR and TLR rates remain high in our population, even taking into account that the lack of angiographic follow-up could infra-estimate the results. There is a nonsignificant trend towards less MACE and mortality in PCI-Success group.

CLOSURE DEVICES

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ProGlide® Femoral Artery Closure Is Safer, More Efficacious and More Cost-effective With Greater Patient Satisfaction in Patients Who Ambulate Early Following Diagnostic Cardiac Catheterization Compared To Manual Compression

Aravind Sekhar,¹ Prafull Raheja,¹ Amr Mohsen,¹ Emily Angelis,² Chris N. Angelis,²

Samantha L. Straton,¹ Brad Sutton,¹ Michael P. Flaherty¹

¹University of Louisville, Louisville, KY; ²Jewish Hospital, Louisville, KY

OBJECTIVE This was a prospective, single-center study evaluating the efficacy and cost effectiveness of early ambulation (within 30 min) following femoral artery closure with the

ProGlideR suture-mediated vascular closure device (PD) in patients undergoing diagnostic cardiac catheterization compared with manual compression.

BACKGROUND It is unclear whether early ambulation with ProGlide is safe and translates into patient satisfaction and cost savings as compared with manual compression (MC).

METHODS AND RESULTS Inclusion criteria were met in 170 patients (85 PD and 85 MC patients). Following hemostasis, patients were ambulated 20 ft within 30 min (PD) or after the requisite 4 h recumbent time (MC) if feasible.

The primary endpoint was time-to-ambulation (TTA) following device closure. We also directly compared the safety of closure, times-to-hemostasis (TTH), -ambulation (TTA) and -discharge (TTD) with MC and, using a fully allocated cost model, performed cost analysis for both strategies. Multivariate analysis was used to determine predictors of patient satisfaction. The primary endpoint of safe, early ambulation was achieved following closure (mean of 27.1 ± 14.9 min; 95% confidence interval [CI]