

Henry Ford Health

Henry Ford Health Scholarly Commons

Cardiology Meeting Abstracts

Cardiology/Cardiovascular Research

9-1-2022

TCT-109 Use of Subintimal Tracking and Reentry Technique in Chronic Total Occlusion Percutaneous Coronary Intervention

Judit Karacsonyi

Spyridon Kostantinis

Bahadir Simsek

Khaldoon Alaswad

Dimitri Karpaliotis

See next page for additional authors

Follow this and additional works at: https://scholarlycommons.henryford.com/cardiology_mtgabstracts

Authors

Judit Karacsonyi, Spyridon Kostantinis, Bahadir Simsek, Khaldoun Alaswad, Dimitri Karpaliotis, Ajay Kirtane, Margaret McEntegart, Farouc Jaffer, James Choi, Paul Pommipanit, Michalis Koutouzis, Ioannis Tsiafoutis, Jaikirshan Khatri, David Kandzari, Ray Chandwaney, Basem Elbarouni, Sevket Gorgulu, Ahmed ElGuindy, Nidal Abi-Rafeh, Omer Goktekin, Imre Ungi, Bavana Rangan, Olga Mastrodemos, Yader Sandoval, Salman Allana, M. Nicholas Burke, and Emmanouil Brilakis

vs 13.6%), $P = 0.16$]. Patients in the CS group had higher prevalence of renal failure (13.3% vs 8.8%, $P < 0.001$) and a more frequent had a history of a past coronary angioplasty (18.9% vs 14.4%, $P = 0.005$). Femoral artery access was more often used in CS group patients (47.1% vs 15.2%, $P < 0.001$). Percutaneous coronary intervention of MVD was more often performed in the CS group (74.6% vs 71.0%, $P = 0.054$). In-hospital death (7.6% vs 4.6%, $P = 0.002$), reinfarction (1.1% vs 0.1%, $P < 0.001$), hemorrhagic complications (6.4% vs 1.6%, $P < 0.001$), blood transfusion (6.4% vs 1.4%, $P < 0.001$), recurrent target vessel revascularization (1.8% vs 0.4%, $P < 0.001$), and pulmonary oedema (3.7% vs 1.5%, $P < 0.001$) occurred more often in the CS group.

CONCLUSION The safety of ACS treatment in MVD patients in centers without CS on site is non-inferior to treatment of such patients in center with CS on site. There were more in-hospital adverse cardiac events observed in ACS MVD patients treated in center with CS on-site. In centers with CS on site ACS MVD patients had a higher comorbidity and were subjected to a higher number of PCIs. It seems that centers with CS on site treat more severe patients than those without CS on site.

CATEGORIES CORONARY: Acute Coronary Syndromes

TCT-107

Long Term Impact of Optimal Medical Therapy After Coronary Revascularization in Patients With Multivessel Coronary Artery Disease: Insights From the ASAN-Multivessel Registry



Jinsun Park,¹ Mijin Kim,² Jinho Lee,² Yeonwoo Choi,² Hoyun Kim,² Do-Yoon Kang,² Jung-Min Ahn,² Pil Hyung Lee,² Seung-Jung Park,² Duk-Woo Park²

¹Division of Cardiology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea; ²Asan Medical Center, Seoul, Korea

BACKGROUND The importance of optimal medical therapy (OMT) has been emphasized for patients with coronary artery disease (CAD). However, the definition of OMT was varied among studies and evidence of routine use of β -blockers and angiotensin-converting enzyme (ACE) inhibitors/angiotensin receptor blockers (ARBs) among patients who underwent revascularization and without heart failure or previous myocardial infarction (MI) are still lacking.

METHODS Using the data from the Asan-Multivessel Registry, we identified the patients who underwent revascularization either isolated coronary-artery bypass grafting (CABG) or percutaneous coronary intervention (PCI). OMT was defined at least 3 medications of the following drugs at 3 years after index revascularization: 1) anti-platelets; 2) beta-blocker; 3) ACE inhibitors and/or ARBs; and 4) statin. Primary outcome was the composite of all-cause death, spontaneous MI, stroke at 10 years. To reduce bias, we applied propensity-score matching and inverse probability of treatment weighting (IPTW).

RESULTS Among 8,311 eligible patients; 4,321 (52.0%) patients took OMT. The primary outcome occurred in 1,015 patients (18.0%). The incidence of primary outcome was significantly lower in OMT group than in non-OMT group (14.3% vs 22.5%; propensity score-matched adjusted HR 0.63 [0.55-0.73]) (**Table**). This effect was more prominent in the PCI stratum than CABG stratum with regard to primary outcome (PCI group: IPTW-adjusted HR 0.59 [0.50-0.70]; vs CABG group: IPTW-adjusted HR 0.73 [0.60-0.89]; P for interaction = 0.095) and mortality (PCI group: IPTW-adjusted HR 0.44 [0.36-0.54]; vs CABG group: IPTW-adjusted HR 0.74 [0.60-0.92]; $P = 0.006$; P for interaction = 0.001).

Group	Adjusted With the Use of IPTW			After Propensity Score Matching	
	HR (95% CI)	P Value	P for Interaction	HR (95% CI)	P Value
Overall	0.64 (0.56-0.73)	<.001		0.63 (0.55, 0.73)	<.001
PCI	0.59 (0.50-0.70)	<.001	0.095	0.58 (0.48, 0.70)	<.001
CABG	0.73 (0.60-0.89)	0.002		0.72 (0.59, 0.89)	0.002

CONCLUSION In patients with multivessel CAD who underwent myocardial revascularization either PCI or CABG, OMT was significantly associated with a lower risk of primary composite outcome and mortality at 10 years.

CATEGORIES CORONARY: Pharmacology/Pharmacotherapy

TCT-108

Abstract Withdrawn

CTO STUDIES I

Abstract nos: 109-113

TCT-109

Use of Subintimal Tracking and Reentry Technique in Chronic Total Occlusion Percutaneous Coronary Intervention



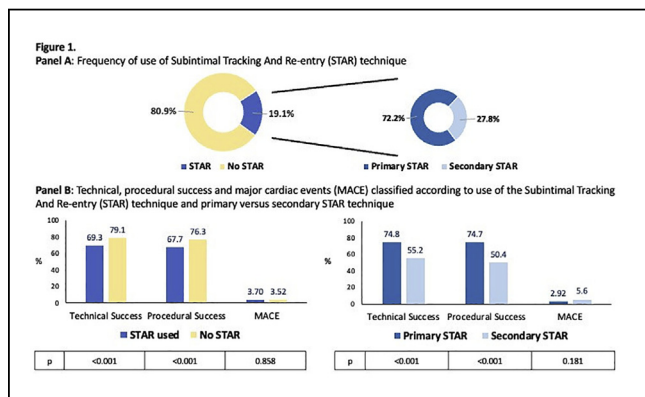
Judit Karacsonyi,¹ Spyridon Kostantinis,² Bahadir Simsek,² Khaldoon Alaswad,³ Dimitri Karpaliotis,⁴ Ajay Kirtane,⁵ Margaret McEntegart,⁶ Farouc Jaffer,⁷ James Choi,⁸ Paul Poommipanit,⁹ Michalis Koutouzis,¹⁰ Ioannis Tsiafoutis,¹¹ Jaikirshan Khatri,¹² David Kandzari,¹³ Raj Chandwaney,¹⁴ Basem Elbarouni,¹⁵ Sevket Gorgulu,¹⁶ Ahmed ElGuindy,¹⁷ Nidal Abi-Rafeh,¹⁸ Omer Goktekin,¹⁹ Imre Ungi,²⁰ Bavanna Rangan,² Olga Mastrodomos,² Yader Sandoval,¹ Salman Allana,²¹ M. Nicholas Burke,²² Emmanouil Brilakis¹

¹Minneapolis Heart Institute, Minneapolis, Minnesota, USA; ²Minneapolis Heart Institute Foundation, Minneapolis, Minnesota, USA; ³Henry Ford Hospital, Detroit, Michigan, USA; ⁴Morristown Medical Center, Morristown, New Jersey, USA; ⁵New York-Presbyterian/Columbia University Irving Medical Center, New York, New York, USA; ⁶Columbia Interventional Cardiovascular Care, Columbia University Medical Center, New York, New York, USA; ⁷Massachusetts General Hospital, Boston, Massachusetts, USA; ⁸Baylor University Medical Center, Dallas, Texas, USA; ⁹University Hospitals, Parma, Ohio, USA; ¹⁰2nd Cardiology Department of Hellenic Red Cross Hospital, Athens, Greece; ¹¹Red Cross Hospital Athens, Athens, Greece; ¹²Cleveland Clinic, Cleveland, Ohio, USA; ¹³Piedmont Heart Institute, Atlanta, Georgia, USA; ¹⁴Oklahoma Heart Institute, Tulsa, Oklahoma, USA; ¹⁵St Boniface Hospital, Winnipeg, Manitoba, Canada; ¹⁶Acibadem University, Istanbul, Turkey; ¹⁷Magdi Yacoub Heart Foundation, Cairo, Egypt; ¹⁸North Oaks Health System, Hammond, Louisiana, USA; ¹⁹Memorial Bahcelievler Hospital, Istanbul, Turkey; ²⁰University of Szeged, Szeged, Hungary; ²¹Minneapolis Heart Institute, Edina, Minnesota, USA; ²²Minneapolis Heart Institute, Abbott Northwestern Hospital, Minneapolis, Minnesota, USA

BACKGROUND There are limited data on the use of the subintimal tracking and reentry (STAR) technique for chronic total occlusion (CTO) percutaneous coronary intervention (PCI).

METHODS We analyzed 2,353 CTO PCIs performed using antegrade dissection re-entry (ADR) in the PROGRESS-CTO Registry, between 2012 and June 2022 at 41 centers.

RESULTS STAR was used in 450 cases (19.1%), primary STAR in 325 (13.8%) and secondary STAR (STAR after other ADR approaches) in 125 (5.3%). The Stingray system was used in 1,048 (44.5%), limited antegrade subintimal tracking (LAST) in 177 (7.5%), and contrast-guided STAR in 31 (1.3%) of re-entry cases. The mean patient age was 65.3 \pm 10 years and 86.0% were men. STAR cases were more complex with higher Japan-CTO (3.05 \pm 1.08 vs 2.87 \pm 1.14, $P = 0.002$) and PROGRESS (Prospective Global Registry for the Study of Chronic Total Occlusion Intervention) CTO (1.58 \pm 1.14 vs 1.20 \pm 1.04, $P < 0.001$) scores compared to non-STAR cases. The cases where STAR was used had lower technical (69.3% vs 79.1%, $P < 0.001$) and procedural (67.7% vs 76.3%, $P < 0.001$) success compared with cases where STAR was not used. The incidence of major cardiac adverse events was similar (3.70% vs 3.52%, $P = 0.858$) between STAR and non-STAR cases. Primary STAR was associated with higher technical and procedural success and similar MACE compared with secondary STAR (**Figure**).



CONCLUSION STAR is used in 19.1% of antegrade re-entry CTO PCI cases and is associated with higher angiographic complexity, lower technical and procedural success rates and similar major complication rates compared to antegrade re-entry cases that did not use STAR.

CATEGORIES CORONARY: Complex and Higher Risk Procedures for Indicated Patients (CHIP)

TCT-110

Use of Atherectomy in Chronic Total Occlusion Percutaneous Coronary Intervention

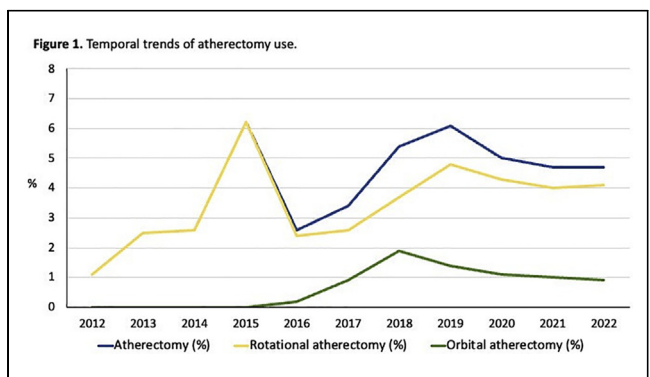
Judit Karacsonyi,¹ Bahadir Simsek,² Spyridon Kostantinis,² Khaldoon Alaswad,³ Oleg Krestyaninov,⁴ Dimitri Karpaliotis,⁵ Ajay Kirtane,⁶ Margaret McEntegart,⁷ Jaikrishan Khatri,⁸ Paul Poommipanit,⁹ Farouc Jaffer,¹⁰ James Choi,¹¹ Ehtisham Mahmud,¹² Mitul Patel,¹³ Michalis Koutouzis,¹⁴ Ioannis Tsiafoutis,¹⁵ Basem Elbarouni,¹⁶ Wissam Jaber,¹⁷ Stephane Rinfret,¹⁸ Brian Jefferson,¹⁹ Taral Patel,²⁰ Sevket Gorgulu,²¹ Ahmed ElGuindy,²² Nidal Abi-Rafeh,²³ Omer Goktekin,²⁴ Imre Ungi,²⁵ Bavana Rangan,² Olga Mastrodemos,¹ Yader Sandoval,²⁶ Salman Allana,²⁷ M. Nicholas Burke,²⁸ Emmanouil Brilakis¹

¹Minneapolis Heart Institute, Minneapolis, Minnesota, USA; ²Minneapolis Heart Institute Foundation, Minneapolis, Minnesota, USA; ³Henry Ford Hospital, Detroit, Michigan, USA; ⁴Meshalkin Siberian Federal Biomedical Research Center, Novosibirsk, Russia; ⁵Morristown Medical Center, Morristown, New Jersey, USA; ⁶New York-Presbyterian/Columbia University Irving Medical Center, New York, New York, USA; ⁷Columbia Interventional Cardiovascular Care, Columbia University Medical Center, New York, New York, USA; ⁸Cleveland Clinic, Cleveland, Ohio, USA; ⁹University Hospitals, Parma, Ohio, USA; ¹⁰Massachusetts General Hospital, Boston, Massachusetts, USA; ¹¹Baylor University Medical Center, Dallas, Texas, USA; ¹²UC San Diego School of Medicine, La Jolla, California, USA; ¹³UC San Diego Health System, La Jolla, California, USA; ¹⁴2nd Cardiology Department of Hellenic Red Cross Hospital, Athens, Greece; ¹⁵Red Cross Hospital Athens, Athens, Greece; ¹⁶St Boniface Hospital, Winnipeg, Manitoba, Canada; ¹⁷Emory University School of Medicine, Atlanta, Georgia, USA; ¹⁸Emory University, Atlanta, Georgia, USA; ¹⁹Centennial HCA, Nashville, Tennessee, USA; ²⁰Centennial Medical Center, Nashville, Tennessee, USA; ²¹Acibadem University, Istanbul, Turkey; ²²Magdi Yacoub Heart Foundation, Cairo, Egypt; ²³North Oaks Health System, Hammond, Louisiana, USA; ²⁴Memorial Bahcelievler Hospital, Istanbul, Turkey; ²⁵University of Szeged, Szeged, Hungary; ²⁶Minneapolis Heart Institute, Abbott Northwestern Hospital, Minneapolis, Minnesota, USA; ²⁷Minneapolis Heart Institute, Edina, Minnesota, USA; ²⁸Minneapolis Heart Institute, Abbott Northwestern Hospital, Minneapolis, Minnesota, USA

BACKGROUND There is limited data on the atherectomy use for chronic total occlusion (CTO) percutaneous coronary intervention (PCI).

METHODS We analyzed 11,118 CTO PCIs performed in the PROGRESS-CTO Registry, between 2012 and June 2022 at 42 centers, comparing the baseline clinical, angiographic characteristics and procedural outcomes with vs without atherectomy.

RESULTS Atherectomy was used in 498 cases (4.5%): rotational atherectomy in 415 cases (3.7%) and orbital atherectomy in 105 cases (0.9%) and both techniques in 22 cases (0.2%). The mean patient age was 65.4 ± 10 years and 81.4% were men. Patients, where atherectomy was used, were older (68.9 ± 10 vs 64.2 ± 10, P < 0.001) and more likely to have diabetes mellitus (53.9% vs 42.5%, P < 0.001) compared with non-atherectomy patients. Atherectomy cases had higher J-CTO (2.74 ± 1.09 vs 2.34 ± 1.27, P < 0.001) scores and higher technical (93.6% vs 86.0%, P < 0.001) and procedural success rates (89.8% vs 84.6%, P = 0.002) compared with cases where atherectomy was not used. The incidence of major adverse cardiac events was also higher in the atherectomy group (4.67% vs 1.91%, P < 0.001), with higher rates of pericardiocentesis (2.43% vs 0.79%, P < 0.001). Atherectomy cases were associated with longer fluoroscopy time (61 [42-91] vs 42 [25-68] minutes, P < 0.001). Temporal trends of atherectomy use are demonstrated in the Figure.



CONCLUSION Atherectomy is used in 4.5% of CTO PCI cases and is associated with higher patient and angiographic complexity, higher technical and procedural success rates but also higher major complication rates compared to non-atherectomy cases.

CATEGORIES CORONARY: Coronary Atherectomy, Plaque Modification, Lithotripsy, and Thrombectomy

TCT-111

Annual Operator Volume and Procedural Outcomes Among Patients Treated With Percutaneous Coronary Intervention of Chronic Total Occlusions—Analysis Based on a Large National Registry

Rafał Januszek,¹ Krzysztof Malinowski,² Sławomir Surowiec,¹ Wojciech Wańha,³ Wojciech Wojakowski,⁴ Krzysztof Bryniarski,⁵ Jacek Legutko,⁶ Carlo di Mario,⁷ Krzysztof Bartus,⁸ Stanisław Bartus⁹

¹University Hospital, Kraków, Poland; ²KCRI, Kraków, Poland; ³Medical University of Silesia, Katowice, Poland; ⁴Department of Cardiology and Structural Heart Diseases, Medical University of Silesia, Katowice, Poland; ⁵John Paul II Hospital, Kraków, Poland; ⁶Jagiellonian University Department of Interventional Cardiology, John Paul II Hospital, Krakow, Poland; ⁷Careggi University Hospital, Florence, Florence, Italy; ⁸Jagiellonian University, Krakow, Poland; ⁹Department of Cardiology and Cardiovascular Interventions, University Hospital, Kraków, Poland

BACKGROUND It has been demonstrated that low operator and institutional volume is associated with poorer procedural and long-term clinical outcomes in general population of patients treated with percutaneous coronary interventions (PCI). The aim of this study was to assess the relationship between operator volume and procedural