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TCT-72 Primary Versus Secondary Retrograde Approach in Chronic Total Occlusion Interventions

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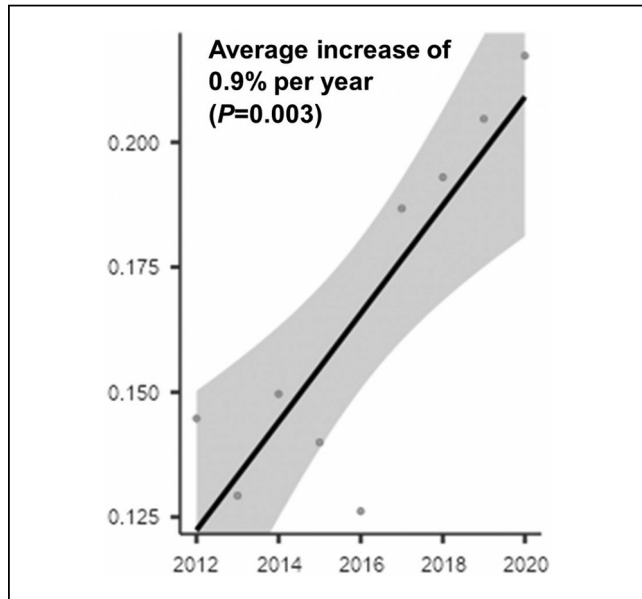
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CATEGORIES CORONARY: Complex and Higher-Risk Procedures for Indicated Patients (CHIP)

TCT-72

Primary Versus Secondary Retrograde Approach in Chronic Total Occlusion Interventions



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Variable	Women N = 1,901	Men N = 9,520	P value
Age, years, mean ± SD	67 ± 11	64 ± 15	< 0.001
Diabetes, %	44	37	< 0.001
J-CTO, mean ± SD	2.1 ± 1.2	2.2 ± 1.3	< 0.001
Interventional collaterals, %	65	60	< 0.001
Successful strategy: antegrade wiring, antegrade dissection, re-entry, retrograde	68 13 19	61 17 22	< 0.001
Technical success, %	88	85	< 0.001
Death, %	0.6	0.4	0.4
Myocardial infarction, %	0.9	0.9	0.9
Tamponade, %	1.1	0.7	0.04

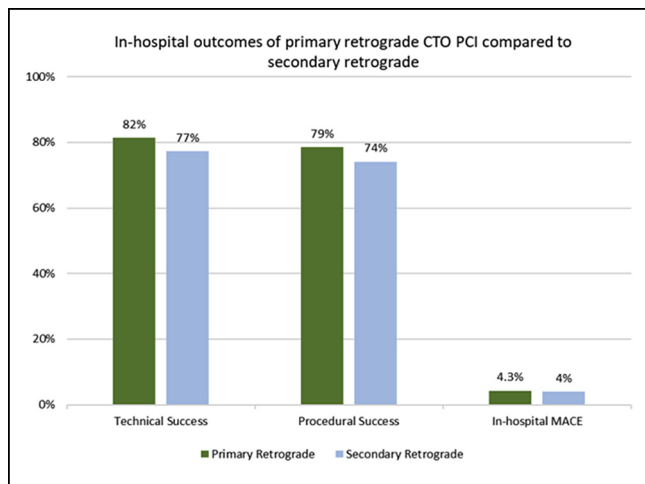
CONCLUSION Women who undergo CTO PCI have less complex lesions than men. CTO PCI in women is associated with higher success rates but also higher rates of tamponade.

BACKGROUND The retrograde approach to coronary chronic total occlusions (CTOs) can be used as the initial crossing strategy (primary retrograde) or after failure of antegrade crossing attempts (secondary retrograde).

METHODS We compared baseline clinical and angiographic characteristics and procedural outcomes of primary versus secondary retrograde crossing for CTO percutaneous coronary intervention (PCI) among 2,789 procedures performed at 34 centers between 2012 and 2021.

RESULTS Retrograde CTO PCI was performed as the primary crossing strategy in 1,086 cases (38.9%) and as a secondary approach in 1,703 cases (61.1%). Patients in the primary group had slightly lower left ventricular ejection fraction (49.1% vs 50.4%; $P = 0.018$), were more likely to have had previous coronary artery bypass graft surgery (52.9% vs 38.4%; $P < 0.001$) and had higher J-CTO (3.31 ± 0.98 vs 2.99 ± 1.09 ; $P < 0.001$) and PROGRESS-CTO (1.47 ± 0.92 vs 1.29 ± 0.99 ; $P < 0.001$) scores. Technical (81.4% vs 77.3%; $P = 0.01$) and procedural

(78.6% vs 74.1%; $P = 0.006$) success rates were higher in the primary retrograde group, with no difference in in-hospital major adverse events (4.3% vs 4.0%; $P = 0.66$). Contrast volume (250 [176,347] mL vs 270[190,367] mL; $P < 0.001$) and procedure time (175 [127,233] min vs 180 [142,236] min; $P < 0.001$) were lower in the primary group.



CONCLUSION Use of retrograde approach as primary crossing strategy is associated with higher rates of technical and procedural success and similar rates of in-hospital major adverse cardiac events compared with secondary retrograde CTO PCI.

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

TCT-73

Differential Risk Profiles and Presentation in Patients Hospitalized for Lower-Extremity Peripheral Artery Disease by Ethnicity



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BACKGROUND Hispanics have historically carried a higher burden of amputations and adverse outcomes from peripheral arterial disease (PAD) than non-Hispanic Whites (NHWs). It is unknown whether differences in sociodemographic characteristics and comorbidities between Hispanics and NHWs contribute to such disparities. We therefore sought to compare risk profiles in Hispanic versus NHWs hospitalized with PAD, using a large nationally representative database.

METHODS Using 2011 to 2017 National Inpatient Sample data, hospitalizations of Hispanic and NHW adults with a primary PAD diagnosis were identified. Sociodemographic characteristics (age, sex, insurance, and median household income) and comorbidities were compared by ethnicity using standardized differences, with values of $d \geq 0.20$ equivalent to a small effect size or larger highlighted.

RESULTS A total of 1,018,220 hospitalizations between 2011 to 2017 for PAD were identified in which 13.9% were Hispanic patients. Hispanic versus NHWs were more likely to be in the low-income group ($d = 0.39$) and uninsured ($d = 0.44$) but did not differ in age or sex ($d < 0.20$, Table 1). Hispanics were also more likely to have concomitant diabetes, renal failure, history of previous amputation, and present with chronic limb-threatening ischemia, whereas NHWs mostly presented with nonthreatened limbs (all $d > 0.20$). Compared with NHWs, Hispanics were less likely to have a smoking history, chronic lung disease, and anxiety (all $d > 0.20$).

Table 1 –Patient Characteristics by Hispanic vs. Non-Hispanic White Ethnicity

Variable	Hispanic n=141,551	Non-Hispanic White n=876,669	Standardized Difference
Age, years	66 (56, 75)	68 (59, 77)	0.07
Female	39.0	39.0	0.00
Insurance			
Medicare	59.8	68.7	0.22
Medicaid	17.9	8.2	0.49
Private	13.7	18.0	0.18
Self-pay	5.8	2.7	0.44
Median Household Income			
Lowest quartile	43.8	27.9	0.39
Highest quartile	10.1	18.5	0.39
Chronic limb-threatening ischemia	51.9	39.2	0.28
Comorbidities			
Hypertension	82.1	77.7	0.15
Diabetes	39.0	30.5	0.21
Coronary artery disease	41.9	47.5	0.12
Heart Failure	6.2	6.0	0.02
Chronic lung disease	13.7	27.4	0.48
Renal Failure	28.6	17.3	0.36
Anemia	20.7	13.5	0.28
Obesity	12.7	12.6	0.01
Smoking	31.4	51.1	0.46
Prior Amputation	16.1	9.0	0.37
Depression	8.8	10.9	0.13
Anxiety	5.5	8.1	0.23

Values are % or median (IQR)

CONCLUSION Hispanic versus NHWs hospitalized for PAD carry a more vulnerable, under-resourced socioeconomic profile and present with more advanced PAD and a complex overall risk profile. Preventative and management strategies that address the unique risk profiles of minority communities may need to be developed to address glaring discrepancies in presentation of PAD, risk, and outcomes by ethnicity.

CATEGORIES ENDOVASCULAR: Peripheral Vascular Disease and Intervention

TCT-74

Comparison of Standard Renal Denervation Procedure Versus Novel Distal and Branch Vessel Ablation With Brachial Arterial Access



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BACKGROUND Renal denervation procedural refinement leads to better procedural and clinical results. We assessed a novel approach to percutaneous renal denervation for uncontrolled hypertension consisting of ablation beyond the proximal main renal artery (Y-pattern), including the primary branches, and compared it with the standard procedure applied only within the main vessel. We also assessed the safety and practicality of a brachial access approach.

METHODS Using a spiral flex catheter, renal denervation was performed on 119 consecutive patients (60 ± 13 years). In 68 of the patients, a femoral arterial vascular approach was used, and in 51 brachial. In 80 patients treated with the standard ablation, 12.0 ± 3.0 total ablations (both sides) per patient were applied, whereas 20.4 ± 3.9 total ablations were delivered for the group of 39 patients with Y-pattern denervation ($P = 0.001$).

RESULTS Technically successful renal denervation was achieved in all patients. Office blood-pressure levels at baseline were 170 ± 17/93 ± 10 mm Hg for the standard group and 169 ± 13/96 ± 9 mm Hg for the Y-pattern group. No major adverse events occurred during the procedure or in the post-procedural in-hospital period. Renal denervation was associated with significant decreases in both office and ambulatory systolic and diastolic blood pressure in both groups. The reduction in 24-hour mean ambulatory systolic blood pressure at 6 months was significantly greater ($P = 0.002$) for the Y-Pattern group (−22.1 ± 15.4 mm Hg) compared with the standard group (−11.8 ± 16.2 mm Hg). Changes in diastolic office and ambulatory pressure were also significantly greater at 6 months in the Y-pattern ablation group. Indices of blood pressure variability improved in both groups.

CONCLUSION Renal denervation using a Y-pattern ablation strategy combined with a greater number of lesions is safe and resulted in significantly greater decreases in mean 24-hour ambulatory systolic and diastolic blood pressure compared to the conventional approach in this single-center matched cohort study. Low-profile brachial artery access was shown to be feasible and safe for renal denervation procedures.