CTO STUDIES III

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TCT-119

Procedural and Clinical Outcomes of IS-CTO and De Novo CTO PCIs

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BACKGROUND CTO percutaneous coronary interventions (PCI) remain the most technically challenging procedure. Occlusions in a previously stented segment with an incidence from 5% to 10% among all CTO represent a special category. Several studies have reported that the presence of IS-CTO was an independent predictor of repeat revascularization and adverse cardiovascular events despite the high PCI procedural success. The aim of present study was to examine the procedural and clinical outcomes of PCI in patient with IS-CTO compared with de novo CTO group.

METHODS We analyzed data from single-center prospective registry dedicated to CTO PCI. Basically, follow-up clinical outcomes were obtained by medical records or telephone interviews. Categorical variables are presented as a percentage of the total number of patients, quantitative variables as mean and standard deviation.

RESULTS A total of 1,118 CTO PCI procedures were performed (109 in-stent CTO and 1,009 de novo CTO). Procedural success was achieved in 87.2% of patients in the IS-CTO group and in 77.2% in the de novo CTO group ($P = 0.01$). There was no difference in the final technical success rate despite the increase of the CTO complexity scores. This association remained significant after multivariate logistic regression analysis (OR 3.52, 95% CI 1.57-9.44, $P = 0.005$).The overall in-hospital MACE rate was 2.3% without significant difference between groups. In patients with the de novo CTO perforation rate was statistically higher (5.5% vs 0.9%, $P = 0.03$), however incidence of pericardiocentesis was comparable in both groups (1.8% vs 1.2%, $P = 0.07$). During a median follow-up of 1.9 years 148 MACCE occurred in the de novo-CTO group and 19 in IS-CTO group (14.7% vs 17.4%, $P = 0.47$). All-cause death, non-fatal MI, stroke and unplanned revascularization did not differ between groups.

CONCLUSION Recanalization of in-stent CTO is associated with a higher procedural success probability and lower incidence of complications, such as coronary arteries perforation compared with the de novo CTO, regardless the angiographic characteristics of the occlusion complexity.

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

TCT-120

Impact of Complete Revascularization in Chronic Total Occlusion Patients With Multivessel Disease on Long-Term Clinical Outcomes

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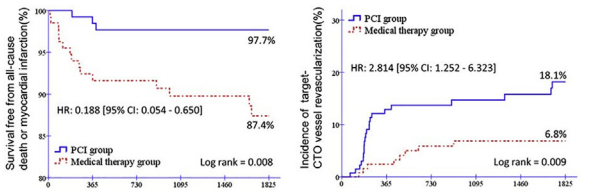
BACKGROUND This study compares the long-term clinical outcomes between two different treatment strategies: percutaneous coronary intervention (PCI) vs medical therapy (MT) for chronic total occlusion (CTO) in multivessel disease (MVD) patients.

METHODS The study data obtained from the CTO registry of Korea University Guro Hospital (KUGH), Seoul, South Korea. This trial is a single-center, prospective, all-comer registry designed to reflect "real world" practice since 2004. the study population has been divided into two groups: the CTO-PCI group having 233 patients and the CTO-MT group having 230 patients. A propensity score matching (PSM) analysis had performed to adjust for confounding factors.

RESULTS Following PSM, the two groups comprised the matched individuals from 336 pairs (total n = 272 patients). The baseline clinical and angiographic characteristics were well-balanced between the two groups. Up to a 5-year clinical follow-up by Kaplan-Meier survival analysis, the primary end point, as defined as the composite of all-cause death or myocardial infarction (MI), occurred more in the CTO-MT group (32.6%) than in the PCI group (2.3%), as did all-cause death (2.3% vs 8.4%, $P = 0.042$) and MI (4.3% vs 0.0%, $P = 0.023$). Target vessel revascularization (TVR) at CTO lesions still occurred more in the CTO-PCI group than in the CTO-MT group (38.3% vs 6.8%, $P = 0.009$).

Figure 2. Kaplan–Meier Survival Curves in Matched Population



Kaplan-Meier estimates for (left) all-cause death and/or myocardial infarction and (right) target lesion revascularization for CTO vessel in the two groups and propensity-matched population. CTO; chronic total occlusion, PCI; percutaneous coronary intervention.

CONCLUSION PCI is shown as a reasonable treatment option compared to MT for CTO lesions in MVD patients; TVR risk is still higher, although.

CATEGORIES IMAGING AND PHYSIOLOGY: Angiography and QCA

TCT-121

Extraplaque Versus Intraplaque Tracking in Chronic Total Occlusion Percutaneous Coronary Intervention

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BACKGROUND The impact of modern extraplaque (EP) tracking techniques on long-term outcomes remains controversial.

METHODS We performed a systematic review and meta-analysis of studies that compared EP vs intraplaque (IP) tracking in CTO PCI. Odds ratios (ORs) with 95% confidence intervals (CIs) were calculated using the Der-Simonian and Laird random-effects method.

RESULTS Our meta-analysis included seven observational studies with 2,982 patients. Patients who underwent EP tracking had significantly more complex CTOs with higher J-CTO scores (2.9 ± 1.2 vs 1.6 ± 1.1, $P < 0.001$), longer lesion length, more severe calcification, and significantly longer stented segments. During a median follow-up of 12 months (range 9-12 months), EP tracking was associated with a higher risk of major adverse cardiovascular events (MACE) (OR 1.50, 95% CI 1.10-2.06, $P = 0.01$) and target vessel revascularization (TVR) (OR 1.69, 95% CI 1.15-2.48, $P = 0.01$) compared with IP tracking. There was no difference in the incidence of all-cause death (OR 1.37, 95% CI 0.67-2.78, $P = 0.39$), myocardial infarction (MI) (OR 1.48, 95% CI 0.82-2.69, $P = 0.20$), or stent thrombosis (OR 2.09, 95% CI 0.69-6.33, $P = 0.19$) between EP and IP tracking.