

Impact of a successful revascularization of chronic total occlusion on clinical outcomes in acute myocardial infarction

Background: The aim of this study is to investigate the impact of a successful non-infarct related CTO coronary revascularization on clinical outcomes in patients with AMI treated with primary percutaneous coronary intervention (PCI) in Asian Population.

Methods: Korean CTO (K-CTO) registry has been performed at 26 centers, and was collected by retrospectively. Among 3,271 patients who underwent CTO-PCI from May 2003 to September 2012, a total of 422 patients (5%) underwent primary PCI due to AMI and a staged CTO-PCI due to non-infarct related CTO. Among 422 patients, a staged CTO-PCI was successful in 321 patients (success rate 76%). In this study, we compared the clinical outcomes between the patients with successful CTO-PCI (n=321) and the patients with failed CTO-PCI (n=101).

Results: To adjust the confounders, a propensity score matched (PSM) analysis was performed using the logistic regression model (C-statistic: 0.731). After PSM, a total of 170 patients were enrolled. The 1-year total death (10.5% vs 2.3%, p-value: 0.029) and Non ST elevation myocardial infarction (4.7% vs 0.0%, p-value 0.043) were higher in the patients with failed CTO-PCI (Table 1). Kaplan-Meier curves for the cumulative total death up to 1 year was lower in the patients with successful CTO-PCI (figure 1), and multivariate regression showed that successful CTO-PCI was an independent predictor of 1-year cardiac survival (hazard ratio 0.21, 95% confidence interval 0.045 to 0.98, p-value=0.048).

Conclusion: In this study, a staged successful CTO-PCI in patients with AMI after primary PCI is associated with improved 1-year total survival in Asian population.