Background: Chronic total occlusions (CTOs) are a frequent finding in patients with ischemic heart disease. Our aim was to evaluate the prognostic impact of CTO on long-term survival in patients with different categories of ischemic heart disease at the level of one whole nation.

Methods: The study population included all consecutive patients registered in the SCAAR registry (Swedish Coronary Angiography and Angioplasty Registry) from 2005 to 2012 who underwent angiography or PCI in Sweden. Patients with previous coronary artery bypass graft surgery were excluded. The patients with CTO and without CTO (no-CTO) were compared using Cox proportional-hazards regression adjusted for the following covariates: age, indication, extent of coronary artery disease, smoking, hypertension, hyperlipidemia, diabetes, year of intervention, prior infarction, prior PCI, hospital and complications. Interaction test was performed between the presence CTO and the different categories of ischemic heart disease e.g. stable angina, unstable angina, non-STEMI and STEMI.

Results: The total of 91,154 patients were included in the study of which 14,609 had a CTO. Median follow-up was 3 years. The total number of events was 9084. CTO was an independent predictor of mortality (HR 1.29; 95%CI 1.22-1.37; P<0.001). The presence of CTO was not associated with increased mortality risk in patients with stable angina (HR 1.10; 95%CI 0.98-1.48). However, in patients with acute coronary syndromes, CTO was associated with increased risk e.g. unstable angina (HR 1.22; 95% CI 1.02-1.48), non-STEMI (1.39; 95% CI 1.25-1.55) and STEMI (1.62; 95% 1.46-1.83).

Conclusions: Our study is based on the largest CTO cohort so far. The presence of CTO is associated with worse long-term survival in patients with acute coronary syndromes but not in patients with stable angina.

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Prognostic impact of chronic total occlusion in ischemic heart disease and different age categories - A report from the Swedish Coronary Angiography and Angioplasty Registry
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