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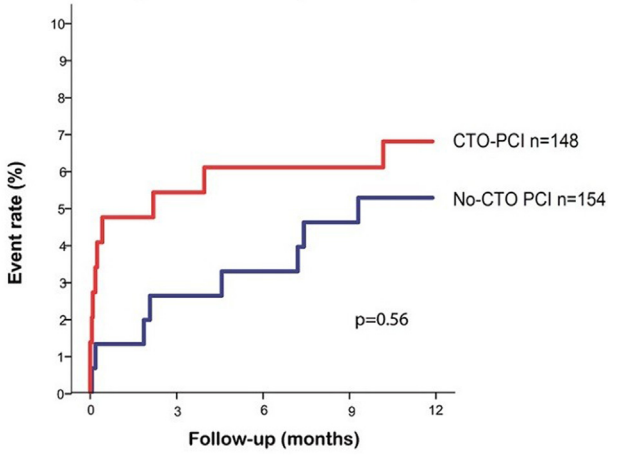
BACKGROUND In ST-elevation myocardial infarction (STEMI) patients presenting for primary percutaneous coronary intervention (PCI) with a concurrent chronic total occlusion (CTO), long-term effects of CTO PCI versus no-CTO PCI are currently still unknown.

METHODS In the EXPLORE trial, STEMI patients with a concurrent CTO were included and randomly assigned. For this study, at 1, 2, 3, 4 and 5 years clinical follow up was obtained. Furthermore, patients were asked to undergo cardiac magnetic resonance imaging (CMR) at 1 year. The main endpoints for the current study are the occurrence of Major adverse cardiac events (MACE), consisting of cardiac death, coronary artery bypass graft (CABG) and any myocardial infarction (MI), within 5 years after randomization. All events underwent independent monitoring and were adjudicated by an independent critical events committee.

RESULTS From October 2007 through April 2015, a total of 302 patients were analyzed in the study (CTO PCI: 148 and no-CTO PCI: 154). Mean age was 60±12 years in both groups. There were no differences in baseline characteristics between both arms. One year clinical follow-up was complete for all patients. The mean long-term follow-up of all patients is currently 3.1±1.5 years.

Figure 1: MACE at 1 year follow-up



CONCLUSION The Explore trial is the first randomized clinical trial investigating the impact of revascularization of a CTO. The primary outcome (LVEF and LVEDV) of the EXPLORE Trial was not met at four months. We aim to present mid- and long-term clinical events follow-up and 1-year cardiac CMR follow-up.

CATEGORIES CORONARY: Acute Coronary Syndromes

TCT-20

Ten-year clinical outcome in patients with Coronary Chronic Total Occlusions not revascularized by Percutaneous Coronary Intervention according to left ventricle systolic function

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BACKGROUND Chronic total occlusions (CTOs) are associated with left ventricular systolic dysfunction due to ischemia, myocardial hibernation and scar. Aim of this study was to assess whether CTO recanalization could reduce cardiac and arrhythmic mortality outcomes at a very long term follow-up at varying degrees of systolic dysfunction.

METHODS Between 1998-2008 we collected data of 912 patients undergoing coronary angiography (CA) due to angina/proof of ischemia. Those showing at least one CTO and in whom an attempt of recanalization was pursued at the index CA were included in this study. They were divided in "revascularized" or "not revascularized" according to successful CTO recanalization and in "mid range-normal EF" (n=802) or "low EF" (n=110) whether EF was higher/equal to or lower than 40%. Follow-up was censored at last visit or at 10 years (minimum 5 years). Endpoints were cardiac mortality (due to heart failure, ACS, arrhythmia) and sudden/aborted death.

RESULTS Patients in the non revascularized arm (n=271) of the "mid range-normal EF" were older (64.0±10.1 vs 61.0±10.1 years; p<0.01), more frequently showed complex CAD with more than one CTO (12.9 vs 7.7%; p=0.02), three-vessel CAD (44.7 vs 36.4%; p=0.02) and blunt stump CTO (48.7 vs 27.3%; p<0.01) vs those revascularized (n=531). Revascularized patients more frequently presented with single vessel disease (24.8 vs 18.0%; p=0.03). "Low EF" non revascularized patients (n=56) had more blunt stump CTO (48.2 vs 29.6%; p=0.04) vs those revascularized (n=54) that often had a single vessel disease (15.1 vs 3.6%; p=0.04) mostly involving LAD artery (48.1 vs 16.1%; p<0.01). Median follow-up was 9.8 years (IQR 5.9-12.1). In the "mid range-normal EF", a total of 37 and 34 (7.0 vs 12.5%; p=0.005; RR 0.50; 95% CI 0.32-0.80) cardiac deaths and 10 and 11 (2.1 vs 5.5%; p=0.04; RR 0.41; 95%CI 0.17-0.96) sudden/aborted deaths occurred in the revascularized vs the non revascularized arm. In the "low EF", a total of 8 and 24 (14.8 vs 42.8%; p<0.001; RR 0.26; 95%CI 0.12-0.59) cardiac deaths and a total of 4 and 10 (7.4% vs 17.9%; p=0.02; RR 0.28; 95%CI 0.09-0.90) sudden or aborted deaths occurred in the revascularized vs the non revascularized arm. Thus, cardiac and arrhythmic mortality were lower in the revascularized arm in both EF groups, but more markedly in the low EF group.

CONCLUSION At a follow-up of 10 years, CTO recanalization was associated with lower rates of cardiac and arrhythmic mortality. This was particularly evident with severely reduced LVEF, where a non-revascularized CTO conferred a significant risk of subsequent cardiac (and especially arrhythmic) death.

CATEGORIES CORONARY: PCI Outcomes

CHRONIC TOTAL OCCLUSION TECHNIQUES

Abstract nos: 21 - 24

TCT-21

Prevalence, Presentation and Treatment of 'Balloon Undilatable' Chronic Total Occlusions: Multicenter US Experience

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