

# Bystander chronic total occlusion in acute coronary syndrome: importance of revascularization and optimal medical therapy

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**Introduction:** Patients with bystander chronic total occlusion (CTO) in acute coronary syndromes (ACS) are not rare and have worse prognosis.<sup>1</sup> We analyzed their long-term clinical outcomes in regard to revascularization strategies and adherence to medical therapy.

**Patients and Methods:** ACS registry from Jan 2017 to May 2023 was used to identify 1950 patients with PCI in ACS who survived to discharge with documented clinical characteristics, treatment strategies, and medical therapy adherence during a median follow-up time of 49 months.

**Results:** There were 171 (9%) patients with bystander CTO found during initial PCI in ACS. They were significantly older with more unfavorable clinical characteristics, and with significantly higher Syntax score (27.5 vs 11.5). Patients with bystander CTO had lower proportion of patients with high adherence to medical therapy (32% vs 46%). Patients with bystander CTO had significantly higher cardiovascular mortality during follow-up (18% vs 8%, RR 1.87, 95% CI 1.27-2.75). After adjusting for relevant CTO status, and clinical and treatment characteristics only lower LVEF, worse renal function, presence of DM and lower adherence to medical therapy remained significantly and independently associated with higher cardiovascular mortality during follow-up, with low adherence to medical therapy as the strongest predictor (RR 3.18, 95% CI 1.76-5.75). Time-to cardiovascular death was significantly lower in 120 patients who did not receive bystander CTO revascularization and was similar between 51 patients with CTO who were revascularized and 1779 patients without bystander CTO, although significant independent association was not established in a multivariate analysis of CTO revascularization.

**Conclusions:** ACS patients with bystander CTO had significantly higher cardiovascular mortality after discharge. Because of more unfavorable clinical characteristics and worse adherence to medical therapy, these patients need a more scrutinized approach during follow-up to increase adherence and to receive revascularization of bystander CTO despite the severity of symptoms if it is clinically indicated and reasonably achievable without excess risks. Larger trials with more ACS patients receiving total revascularization are needed.

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## LITERATURE

- van Veelen A, Coerkamp CF, Somsen YBO, Råmunddal T, Ioanes D, Laanmets P, et al; EXPLORE investigators. Ten-Year Outcome of Recanalization or Medical Therapy for Concomitant Chronic Total Occlusion After Myocardial Infarction. *J Am Heart Assoc.* 2024 May 21;13(10):e033556. <https://doi.org/10.1161/JAHA.123.033556>