



Can History of Myocardial Infarction Reliably Indicate Myocardial Viability in Patients With a Coronary Chronic Total Occlusion and Good Collateral Circulation?

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Dear Editors:

We read with interest the study by Shaikh et al¹ reporting that none of the patients with coronary chronic total occlusions (CTOs) and a prior Q-wave myocardial infarction (MI) in the CTO-supplied territory had viable myocardium even in the presence of good collateral circulation.

We examined the association between prior MI and myocardial viability in a large, multicenter, CTO percutaneous coronary intervention (PCI) registry (PROGRESS CTO: Prospective Global Registry for the Study of Chronic Total Occlusion Intervention; clinicaltrials.gov identifier, NCT02061436). Among 355 patients with Rentrop 3 collaterals in whom viability testing was done, a total of 307 had viable myocardium. Among these, almost half (49%) had suffered a prior MI. Of the 154 prior MI patients, 97% had viable myocardium.

Since all patients in our registry underwent CTO-PCI, rates of viable myocardium are expected to be higher than in consecutive

patients with a CTO. Also, in PROGRESS-CTO, electrocardiograms are not available to assess for Q wave, as in the study by Shaikh et al. Finally, viability was not assessed only by positron emission tomography scan (13%), but also by single-photon emission computed tomography (52%), echocardiography (19%), and magnetic resonance imaging (15%).

In summary, viability testing may still be of value in patients with a CTO and a prior MI, especially if their ejection fraction is low and dyspnea is the predominant symptom.^{1,2}

References

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