

Meeting abstract

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2014 Left ventricular ejection function and viability assessed by CMR in patients undergoing anterograde versus retrograde percutaneous coronary interventions for chronic total occlusion: a Ppe and post procedure study

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Introduction

Coronary chronic total occlusion (CTO) remains one of the most challenging lesion subsets in interventional cardiology. The primary barrier to percutaneous coronary intervention (PCI) for CTO has been procedural failure due to inability to cross the CTO. A retrograde approach can be considered when the anterograde approach has failed. Currently, little is known about myocardial damage in terms of left ventricular function and scar using the retrograde approach. CMR is a highly reproducible technique which is non-invasive and free from ionising radiation and considered the gold standard for viability and Left Ventricular Ejection Function (LVEF) assessment.

Purpose

The aim of this study was to compare anterograde versus retrograde PCI approach in terms of myocardial damage and LVEF improvement assessed by CMR.

Methods

Eighteen patients admitted for a planned PCI to CTO underwent CMR to assess the viability and the LVEF prior to the intervention. One patient had no PCI because of non viable myocardium in the area of the CTO. All of the remaining 17 patients had documented ischemia in the territory of the target vessel. A follow up scan was per-

formed between 3 and 6 weeks after revascularization. Quantitative assessment of LVEF and myocardial infarction were analyzed.

Results

Ten of 17 patients had a CTO of the RCA, which 7 were treated successfully with an anterograde PCI (70%) and 3 had a successful retrograde PCI. Seven patients underwent a successful PCI to CTO of LAD. Two of them had a retrograde approach (28.6%). For both techniques, the LVEF improved slightly (anterograde group: LVEF 54% +/- 14.8% before PCI to 58.8% +/- 15.9% post PCI (p = 0.14 ns); retrograde group: LVEF 56.8% +/- 19.8% before PCI to 60.6% +/- 21.5% post PCI (p = 0.2 ns)). No new late gadolinium enhancement was seen in the area of the target vessel post PCI in both technique.

Conclusion

This preliminary study shows potential improvement of LVEF with the retrograde approach to CTO in RCA and LAD vessels. There were no area of new myocardial infarction seen post procedure.