

Meeting abstract

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I020 Additional late improvement of left ventricular function after percutaneous recanalisation of chronic total coronary occlusions

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Introduction

The long-term effect of recanalisation of a CTO on LV function and volumes is currently unknown.

Purpose

To investigate early and late effects of percutaneous revascularization for chronic total coronary occlusion (CTO) on left ventricular (LV) function and volumes.

Methods

MRI was performed in 21 patients before, at 5 months, and at 3 years after recanalisation of CTO. Global LV function and volumes and segmental wall thickening (SWT) were quantified on cine-images. Two viability indexes were used; the transmural extent of infarction (TEI) on delayed contrast enhancement images and end-diastolic wall thickness at baseline (EDWT).

Results

A significant decrease in mean end-diastolic volume index (86 ± 14 ml/m² to 78 ± 15 ml/m²; $p = 0.02$) and mean end-systolic volume index (35 ± 13 ml/m² to 30 ± 13 ml/m²; $p = 0.03$) was observed three years after recanalisation. Mean ejection fraction tended to improve ($60 \pm 9\%$ to $63 \pm 11\%$; $p = 0.11$). SWT significantly increased at 5 month follow-up ($p < 0.001$) and an additional improvement was found at 3 years ($p = 0.04$) follow-up in segments with TEI of $< 25\%$. In segments with TEI between 25% and 75%, SWT remained unchanged at 5-month fol-

low-up ($p = 0.89$), but improved after 5 months ($p = 0.04$). SWT remained unchanged in segments with transmural scars (Figure 1). TEI was a better predictor for segmental functional recovery than EDWT (odds ratio 5.6, CI: 1.5–21.1; $p = 0.01$ versus 2.5, CI: 0.7–8.3; $p = 0.14$).

Conclusion

A positive effect on LV remodelling and EF is observed up to three years after recanalisation. Both early and late improvement of regional LV function is observed in the perfusion territory of CTO and is related to the transmural extent of infarction on pre-treatment MRI.

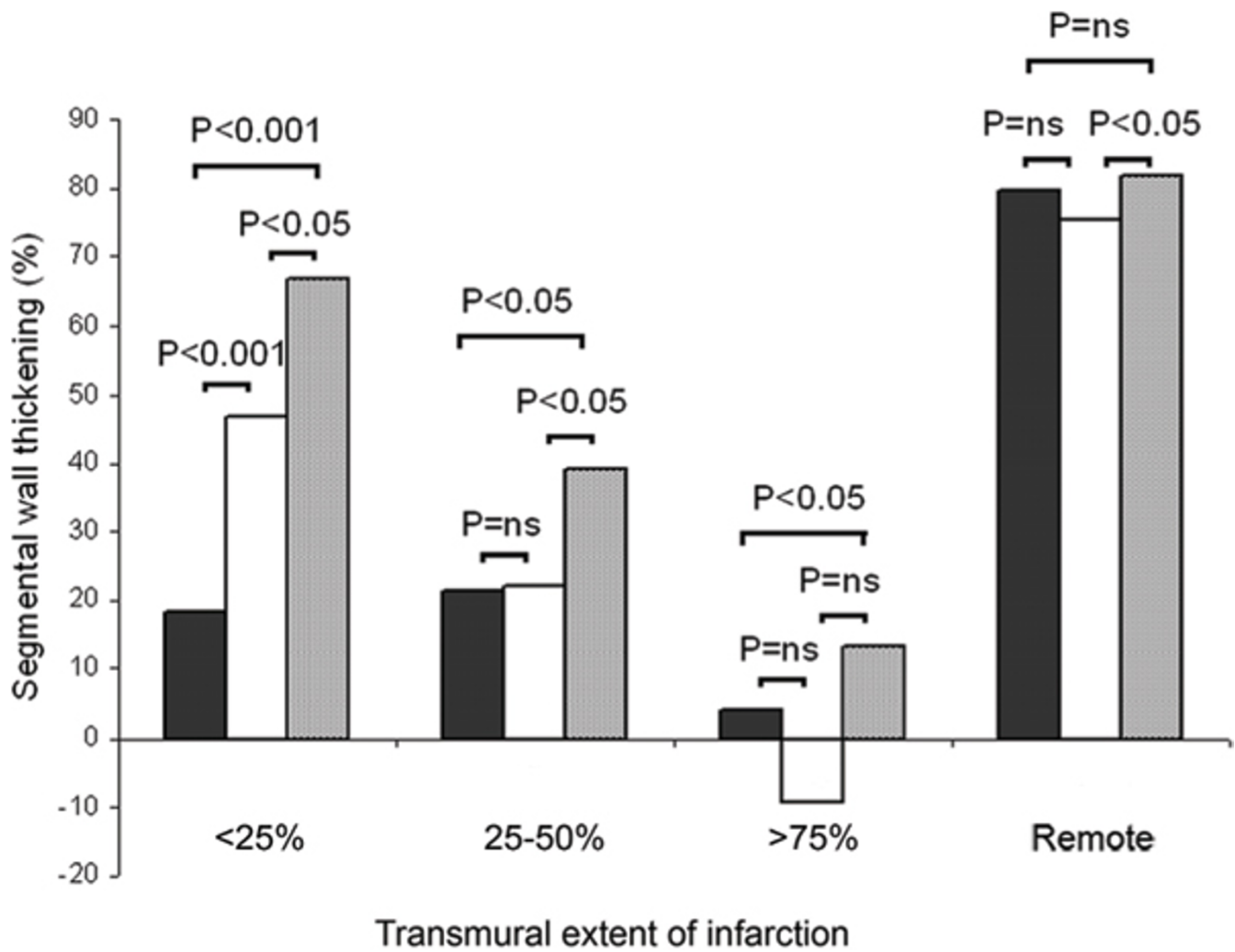


Figure 1

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