

Meeting abstract

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I16 Contractility reserve in segments non-viable on delayed enhancement; analysis with low dose dobutamine MRI

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Background

Transmural extent of infarction (TEI) of >50% on delayed enhancement (DE) images is considered as non-viable and as a result not revascularised.

Purpose

To investigate the contractility reserve before revascularisation of a chronic total coronary occlusion (CTO).

Methods and materials

Dobutamine stress leads to an increase in systolic wall thickening in viable tissue. Forty-seven patients with a CTO of a coronary artery were included. Segmental wall thickening (SWT) at rest and during dobutamine stress (5 and 10 microg/kg/min) were evaluated. DE-images were performed to calculate the TEI. Segments were scored as dysfunctional if SWT was <45%.

Results

Seventy percent (151/216) of the segments in patients with a CTO were dysfunctional. Mean SWT of all CTO perfused segments was $35\% \pm 34\%$ which was significantly lower compared to remote segments; $52 \pm 48\%$ ($p < 0.001$). Dysfunctional segments with a TEI <50% showed a significant improvement in SWT with 5 microg/kg/min dobutamine. Interestingly segments with TEI 50%–75% showed a significant improvement in SWT were a higher dose was used (Figure 1).

Conclusion

Contractility reserve is present in segments with TEI <50% and 50%–75% although a higher dose was needed when TEI 50%–75%.

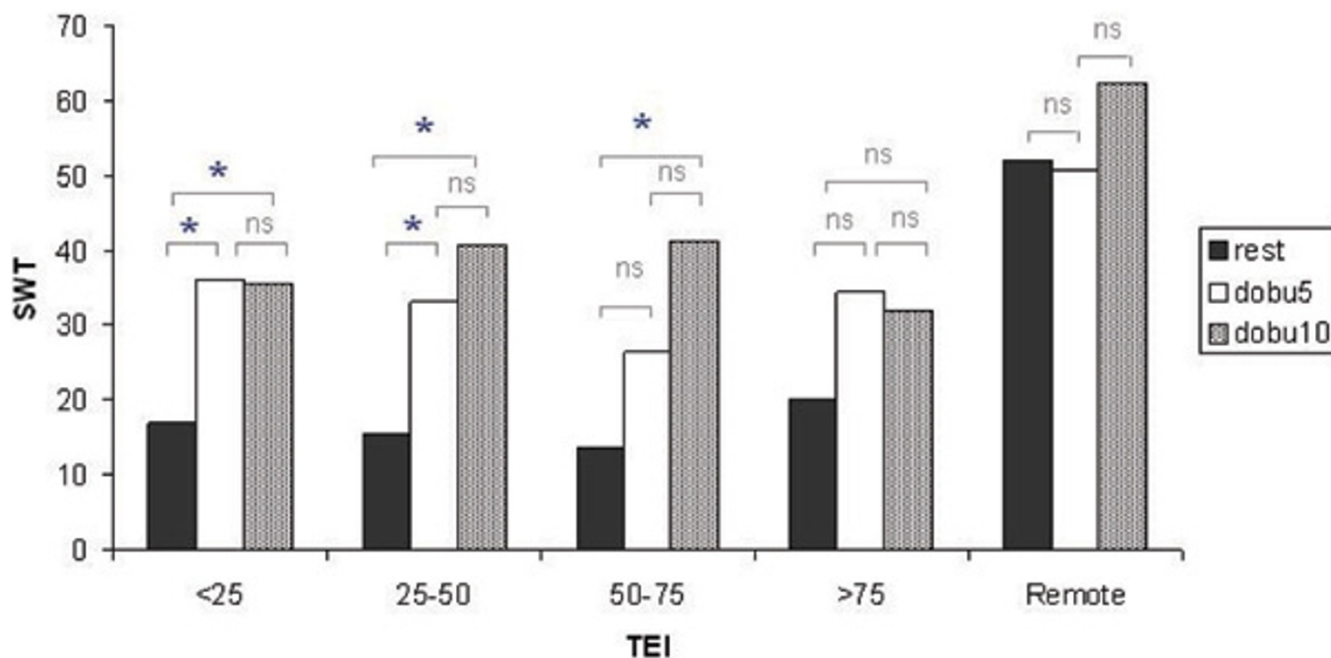


Figure 1

All dysfunctional CTO segments. Contractility reserve in segments non-viable on delayed enhancement; analysis with low dose dobutamine MRI. This was observed as an increase in segmental wall thickening in segments with TEI<50% and 50%–75% although a higher dose was needed when TEI 50%–75%.

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