

ORAL PRESENTATION

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Impact of CMR parameters on clinical outcome after STEMI: data from a large multi-center study

Suzanne de Waha^{1*}, Ingo Eitel¹, Georg Fuernau¹, Philipp Lurz¹, Jochen Wöhrle², Henning Suenkel¹, Josefine Meissner¹, Sebastian Kerber³, Bernward Lauer⁴, Matthias Pauschinger⁵, Ralf Birkemeyer⁶, Christoph Axthelm⁷, Rainer Zimmermann⁸, Steffen Desch¹, Matthias Gutberlet⁹, Gerhard Schuler¹, Holger Thiele¹

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Background

Data on the prognostic value of cardiac magnetic resonance imaging (CMR) parameters in patients with ST-elevation myocardial infarction (STEMI) are limited due to analysis of single-center cohorts and small study sample sizes. Aim of the current study was thus to investigate the impact of infarct size, microvascular obstruction (MO) and myocardial salvage index (MSI) on clinical outcome in a large cohort of STEMI patients derived from a multi-center study.

Methods

STEMI patients (n=795) reperfused by primary percutaneous coronary intervention (PCI) within 12 hours after symptom onset underwent CMR in 8 centers in Germany. CMR was performed at day 1 to 4 after the index event. Infarct size and microvascular obstruction (MO) were measured 15 minutes after gadolinium injection. T2-weighted and contrast-enhanced CMR were used to calculate the MSI. The primary endpoint was defined as a composite of death, non-fatal myocardial reinfarction and congestive heart failure (MACE). Clinical follow-up was conducted after 12 months.

Results

Infarct size, MO and MSI were significantly associated with MACE in univariable Cox regression analysis (all $p < 0.01$). In multivariable Cox regression analysis including TIMI-risk score, TIMI-flow pre- and post-PCI, ST-segment resolution, left ventricular ejection fraction, as well as infarct size, MO and MSI, infarct size was

independently associated with the occurrence of MACE (HR 1.03, 95% CI 1.01-1.04, $p=0.02$).

Conclusions

In this largest multi-center cohort of patients with STEMI undergoing CMR reported so far, infarct size as well as MO and MSI were significantly associated with the occurrence of death, non-fatal myocardial reinfarction and congestive heart failure. Infarct size was identified as an independent predictor for adverse clinical outcome after STEMI even after adjustment for traditional outcome markers.

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Author details

¹Department of Internal Medicine/Cardiology, University of Leipzig - Heart Center, Leipzig, Germany. ²University of Ulm, Ulm, Germany. ³Herz- und Gefäß-Klinik Bad Neustadt, Bad Neustadt, Germany. ⁴Zentralklinik Bad Berka, Bad Berka, Germany. ⁵Klinikum Nürnberg, Nürnberg, Germany. ⁶Schwarzwald-Baar Klinikum Villingen-Schwenningen, Villingen-Schwenningen, Germany. ⁷Klinikum Pirna, Pirna, Germany. ⁸Klinikum Pforzheim, Pforzheim, Germany. ⁹Department of Diagnostic and Interventional Radiology, University of Leipzig - Heart Center, Leipzig, Germany.

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¹Department of Internal Medicine/Cardiology, University of Leipzig - Heart Center, Leipzig, Germany

Full list of author information is available at the end of the article