

Meeting abstract

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1018 Safety of cardiovascular magnetic resonance performed immediately after primary percutaneous coronary intervention for ST-elevation myocardial infarction

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Background

After percutaneous coronary intervention (PCI) with stent implantation, cardiovascular magnetic resonance (CMR) is usually postponed in order to prevent theoretical stent heating or displacement. However, several studies have demonstrated CMR safety when performed 3 days after the PCI procedure. In order to better evaluate myocardial perfusion, necrosis and viability in the hyperacute phase of ST elevation myocardial infarction (STEMI), it would be useful to perform CMR more rapidly following coronary stenting. We investigated the early and long term safety of CMR when performed immediately after primary PCI with stenting for STEMI.

Methods

We prospectively studied 128 patients undergoing primary PCI with stent implantation for STEMI. The study group was composed of 64 patients who underwent CMR (1.5 Tesla) within 12 hours after primary PCI including 105 stents. The control group, also composed of 64 patients, underwent primary PCI without CMR. Adverse events were reported during the early in-hospital period as well as during 6-month follow-up.

Results

Patient populations were comparable in both groups. Total ischemic times were similar (CMR+ 4.0 h, CMR- 5.5 h, $p = ns$), as were peak troponin rise (CMR+ 3.2 $\mu\text{g/L}$, CMR- 2.3 $\mu\text{g/L}$, $p = ns$). The median delay between PCI

and CMR was 4.8 (interquartile range 4.1) hours. Duration of the CMR study was 42 (11) minutes and no adverse events occurred during the imaging session. Immediate CMR was not associated with any in-hospital increase in death, myocardial infarction, urgent revascularization, or bleeding ($p = ns$ for each). During 6-month follow-up, CMR performed immediately after primary PCI was not associated with a higher rate adverse events compared to primary PCI without CMR (respectively MACE 5 vs. 8%, $p = 0.16$; repeat angina 6 vs. 8%, $p = 0.73$; rehospitalization for cardiac cause 3 vs. 13%, $p = 0.05$). On Kaplan-Meier estimates, event-free survival at 6 months was not decreased by performing CMR immediately after primary PCI with stenting.

Conclusion

Cardiovascular magnetic resonance at 1.5 T performed immediately after primary PCI with coronary stent implantation has proven early and long-term safety, opening the door for improved risk stratification in the hyperacute phase of STEMI.