



Serial magnetic resonance imaging based assessment of the early effects of an ACE inhibitor on postinfarction left ventricular remodeling in rats

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Résumé en anglais	<p>In vivo assessment of treatment efficacy on postinfarct left ventricular (LV) remodeling is crucial for experimental studies. We examined the technical feasibility of serial magnetic resonance imaging (MRI) for monitoring early postinfarct remodeling in rats. MRI studies were performed with a 7-Tesla unit, 1, 3, 8, 15, and 30 days after myocardial infarction (MI) or sham operation, to measure LV mass, volume, and the ejection fraction (EF). Three groups of animals were analyzed: sham-operated rats (n = 6), MI rats receiving lisinopril (n = 11), and MI rats receiving placebo (n = 8). LV dilation occurred on day 3 in both MI groups. LV end-systolic and end-diastolic volumes were significantly lower in lisinopril-treated rats than in placebo-treated rats at days 15 and 30. EF was lower in both MI groups than in the sham group at all time points, and did not differ between the MI groups during follow-up. Less LV hypertrophy was observed in rats receiving lisinopril than in rats receiving placebo at days 15 and 30. We found acceptable within- and between-observer agreement and an excellent correlation between MRI and ex vivo LV mass ($r = 0.96$; $p < 0.001$). We demonstrated the ability of MRI to detect the early beneficial impact of angiotensin-converting enzyme (ACE) inhibitors on LV remodeling. Accurate and noninvasive, MRI is the tool of choice to document response to treatment targeting postinfarction LV remodeling in rats.</p>
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Liens

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