

学 位 論 文 の 要 旨

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<p>主論文の題名</p> <p>Quantitative assessment of regional systolic and diastolic functions and temporal heterogeneity of myocardial contraction in patients with myocardial infarction using cine magnetic resonance imaging and Fourier fitting</p> <p>主論文の要旨</p> <p>The objective of this study is to determine regional left ventricle (LV) function and temporal heterogeneity of LV wall contraction by analyzing regional time–volume curve (TVC) and to assess altered systolic and diastolic functions in comparison with noninfarcted myocardium in patients with myocardial infarction (MI).</p> <p>Steady-state cine magnetic resonance (MR) and late gadolinium-enhanced (LGE) MR images were acquired using a 1.5-T MR system in 60 patients with MI. Regional LV function was determined by analyzing regional TVC in 16 segments. The fitted regional TVC was generated by Fourier curve fitting with five harmonics. Regional LV ejection fraction (EF), peak ejection rate (PER), peak filling rate (PFR), time to end-systole and time to peak filling were determined from TVC and the first derivative curve.</p> <p>On LGE MR imaging (MRI), MI was observed in 307 of 960 segments (32.0%). Regional EF and PER averaged in LGE segments, were significantly lower than those in normal segments. In addition, regional PFR, an index of diastolic function, was significantly reduced in LGE segments.</p> <p>Analysis of regional TVC on cine MRI after Fourier fitting allows quantitative assessment of regional systolic and diastolic LV functions and temporal heterogeneity of LV wall contraction in patients with MI.</p>			

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