

## Publication

### Assessment of magnetization transfer effects in myocardial tissue using balanced steady-state free precession (bSSFP) cine MRI

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Magnetization transfer imaging (MTI) by means of MRI exploits the mobility of water molecules in tissue and offers an alternative contrast mechanism beyond the more commonly used mechanisms based on relaxation times. A cardiac MTI method was implemented on a commercially available 1.5 T MR imager. It is based on the acquisition of two sets of cardiac-triggered cine balanced steady-state free precession (bSSFP) images with different levels of RF power deposition. Reduction of RF power was achieved by lengthening the RF excitation pulses of a cine bSSFP sequence from 0.24 ms to 1.7 ms, while keeping the flip angle constant. Normal volunteers and patients with acute myocardial infarcts were imaged in short and long axis views. Normal myocardium showed an MT ratio (MTR) of 33.0 +/- 3.3%. In acute myocardial infarct, MTR was reduced to 24.5 +/- 9.2% (P <0.04), most likely caused by an increase in water content due to edema. The method thus allows detection of acute myocardial infarct without the administration of contrast agents.

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