

Breath-hold Contrast-enhanced MR Angiography of the Aorta and Lower Extremity Arteries: Comparison with Catheterization Angiography

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Purpose: To evaluate the diagnostic efficacy of breath-hold contrast-enhanced MR angiography (MRA).

Materials and Method: In this prospective study, contrast-enhanced MRA using automated-bolus detection algorithm (MR SmartPrep) was performed in 20 patients with suspected arterial disease. About 0.3ml/kg of gadolinium-DTPA was injected at the speed of 2 ml/second for each session of MRA. MRA was performed for evaluation of thoracic aorta and its branches in 8 patients, abdominal aorta and its branches of 14 patients, and lower extremity arteries in 7 patients. Catheterization angiography (intraarterial DSA) was subsequently performed in all patients and revealed 54 arterial lesions. The degree of arterial lesion was graded as 1 (stenosis < 50%), 2 (stenosis 50%), and 3 (occlusion) by two independent readers for MRA and catheterization angiography.

Results: Findings of MRA was concordant with those of catheterization angiography in 80%(43/54). MRA overestimated five arterial lesions (7%). MRA underestimated two arterial lesions (2%).

Conclusion: Breath-hold contrast-enhanced MRA is efficient in depicting arterial lesions in most patients.