

POSTER PRESENTATION

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Observation of renal function after multiple DE-MRI examinations in atrial fibrillation ablation patients without kidney diseases

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Background

Gadolinium-based MRI examinations have become essential for the treatment of patients with atrial fibrillation (AF). Gadolinium-based contrast agents can trigger nephrogenic systemic fibrosis (NSF).

Objective

We thought to analyze the renal function in patients with normal and mildly reduced renal function after performing multiple MRI examinations prior to and following an AF ablation procedure.

Methods

MRI was performed in 40 patients (27 males, age 62±9 years) who were scheduled for pulmonary vein isolation (PVI) and had a glomerular filtration rate (GFR) of >30ml/min. A total of three MRIs were acquired prior to, directly after and 24 hours after PVI, using weight-dependent dosages of gadolinium pentetate (Gd-DPTA). 46,8±14,9 ml Gd-DPTA was given within a 3±1 day period. Renal function [defined as serum creatinine, blood urea nitrogen (BUN) and GFR] was measured before, acutely after and 12±2 weeks after the procedure. During follow-up, patients were examined for symptoms of NSF.

Results

No signs of significant reductions in renal function were observed. In addition, during a follow-up period of 15±3 weeks, no patient presented with early signs of NSF. Table 1.

Table 1 Course of renal function after multiple MRI

	Before PVI	Acute after PVI	Long Term after PVI	p-value
Creatine	1.1 ± 0.2	1.02 ± 0.2	1.0 ± 0.1	n.s.
BUN (mg/dl)	18.8 ± 6.6	15.2 ± 5.6	15.8 ± 4.4	n.s.
GFR	75.1 ± 19.2	80.7 ± 21.7	76.1 ± 10.2	n.s.

Conclusion

For optimal ablation treatment of AF, multiple gadolinium-based MRI examinations appeared to be safe in regards to renal function; therefore, multiple MRIs could be utilized in patients with normal or mildly reduced renal function.

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