

7-year experiences with radiofrequency ablation for small renal masses

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Introduction: Radiofrequency ablation (RFA) is an emerging treatment modality for small renal masses (SRM). In this report we evaluated long-term oncological outcome after RFA.

Methods: Records of 28 patients (37SRM) consecutively treated with RFA in our institution were retrospectively reviewed to assess long-term oncological outcome. To assess functional outcomes, patients without subsequent renal surgery were selected. Renal function was determined using serum creatinine levels and the MDRD estimated glomerular filtration rate (GFR), both at baseline and 1 year post-ablation in 24 patients.

Results: All patients completed a minimum follow-up of 60 months, with a median follow-up in survivors of 65 months. Residual disease was observed in 1 of the 36 (2.7 %) ablated small renal masses. There were no local recurrences in the observed population. Estimated 5-year clinical failure-free survival was 81 %. Kidney recurrence as well as clinical failure was significantly increased in patients with history of renal cell carcinoma (RCC) ($p=0.01$ for both parameters). Estimated 5-year overall survival was 58 %, estimated 5-year cancer specific survival was 96 %.

Mean preoperative serum creatinine level was 1.7 mg/dl and mean GFR was 48 ml/min/1.73m². Preoperatively, 71 % of evaluated patients already had CKD stage 3 or more. There were no significant differences with serum creatinine levels or GFR at one year post-ablation ($p=0.6$ and $p=0.7$, respectively).

Conclusion: Radiofrequency ablation of small renal masses provides successful tumour control and stable long-term oncological outcomes. Notably, local tumour control is also feasible with RFA in patients with previous history of RCC.

Additionally, our analysis clearly demonstrated that RFA of SRM maximally preserves renal function.