

**PP-48**

**Long-term outcomes of MRI-guided percutaneous cryoablation for Japanese patients with small renal tumors**

I. Hiroyuki, S. Hiroshi, M. Kenta, K. Koichi, E. Shin

*Jikei University, Tokyo, Japan*

**Background:** Cryoablation is a treatment option for some patients with small exophytic lesions of the kidney. The purpose of this study is to determine the feasibility, safety, and intermediate-term treatment outcome of percutaneous cryoablation of renal cell carcinoma guided by horizontal open magnetic resonance imaging (MRI).

**Methods:** We prospectively used cryoablation to treat 13 patients with radiographically confirmed enhancing small, solid renal tumors ( $\leq 4.8$  cm). An argon gas-based cryoablation system was used. One to four cryoprobes with 2 or 3-mm diameters were placed percutaneously into the tumor under local anaesthesia and MRI guidance. Ice ball dimensions were monitored by 2-D MR images. Double freeze-thaw cycles were conducted throughout the procedure. After successful cryoablation, patients were followed on a regular basis to evaluate the treatment's clinical outcome.

**Results:** Median follow up from time of procedure is 131 months (range, 10–138). In all cases the entire procedure was accomplished without significant morbidity or complications. A mild retroperitoneal hematoma, which subsided spontaneously, was noted in one patient. Follow-up dynamic computed tomography (CT) at 3 months after operation confirmed the absence of enhancement in resolved tumor masses for 11 of 13 cases. None of these 11 patients had clinical evidence of recurrent disease at last follow up. The remaining two patients had lesions with some enhanced areas. Subsequent partial nephrectomy histologically confirmed the presence of vital tumor in, respectively, the center and the periphery of the residual masses. One of these patients developed multiple lung and ipsilateral adrenal metastases 13 months after surgical resection.

**Conclusions:** Percutaneous cryoablation of small renal cell carcinomas under horizontal open MRI guidance appears to be safe and feasible. This long-term follow up continues to demonstrate efficacy in most patients; however, a few patients experience incomplete ablation with risk of treatment failure. The ideal candidates for this procedure still need to be determined in longer follow up with diligent observation.