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Clinical experience with microwave ablation of kidney lesions in Santaros clinics

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Background. Microwave ablation is a new method for treating kidney tumors or cysts less than 4 cm, that cannot be treated surgically due to the patient's comorbidity status.

Aim. To evaluate microwave ablation as a new treatment method for small kidney tumors or cysts.

Methods (1). On October 10th, 2015 the first ultrasound guided microwave ablation (MWA) of renal cancer was performed in Vilnius University Hospital Santariskiu Clinics, Lithuania. This procedure was performed for five patients with renal cell carcinoma and two patients with renal cysts till March 6th 2018.

Methods (2):

The first 61-year-old patient diagnosed with renal cell carcinoma size 11mm and R.E.N.A.L. 6p received a total MWA power output of 60W for 2 minutes.

The second 83-year-old patient with an initial diagnosis of renal cell carcinoma size 26mm and R.E.N.A.L. 6a received a MWA of total 100W power for 4 minutes.

The third 53-year-old patient with renal cyst sized 13mm and Bosniak 3 received a MWA of total 60W power output for 3 minutes.

The fourth 62-year-old patient was diagnosed with (15 mm size) renal cell carcinoma and with R.E.N.A.L. 8a. She obtained a MWA of 100W power for 4 minutes.

The fifth 54-year-old patient was diagnosed with renal cyst, Bosniak 3 (cyst size 20mm). During the MWA a power output of 100W for 2 minutes was used.

The sixth 84-year-old patient with diagnosis of a 16 mm renal cell carcinoma and R.E.N.A.L 5p obtained a MWA of 60W power for 3 minutes.

The last 78-year-old patient diagnosed with renal cell carcinoma size 34mm and R.E.N.A.L. 8h received a total MWA power output of 100W for 4 minutes was used.

Results. Complete ablation was achieved in 5 out of 7 (71,4%) lesions after 1 MWA session. The patient comorbidity status did not change in any of the patients. No severe complications occurred during the MWA, only one patient had kidney hematoma after the MWA. After the MWA no significant elevation of renal function was observed.

Conclusion. MWA is a safe and effective treatment option for patients who suffer from inoperable kidney lesions less than 4 cm. The complication rate is low and excellent tumor control can be achieved without deterioration of the residual renal function in experienced centers. Because of low patient number, our MWA results are lower, than reported in other studies.