

in two patients who had metastatic tumors in the remaining kidney (one of them had been only previously removed due to RCC).

Conclusions: Taking this into account, we suggest, that the additional therapeutic effect of an *in vivo* immunization against damaged tumor cells antigens could be important. If the ablated changes are small, at the initial stages of the tumor development, the stimulated increase of the immune response of the organism could be important.

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Systemic inflammatory reactions in patients after radiofrequency ablation of renal cell carcinoma

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Introduction and Objectives: Advances in imaging have led to an increase in the use of minimally invasive technologies such as radiofrequency ablation (RFA) or cryoablation as a treatment of renal cell carcinoma (RCC). RFA is a thermal ablative technique that causes tumor destruction by heating and may be used as an alternative to a partial nephrectomy in peripherally located tumors not exceeding 4 cm in diameter. Most publications on RFA efficacy concentrate on the CT or MRI assessment of the local tumor destruction. In patients with liver tumors treated with RFA or cryoablation, together with the local tissue necrosis, a specific inflammatory response was also demonstrated. It has been shown that hepatic cryotherapy, but not RFA, rarely may cause cryoshock phenomenon with a high mortality rate which related to the release of toxic substances from the lesion and strong inflammatory reaction. The participation of the RFA in the specific inflammatory response induction has never been studied in patients with RCC. The evaluation of this response may lead to a better understanding of the thermoablation effect and improve its efficacy.

Material and Methods: Thirteen patients (6 men, 7 women) aged 50 to 86 (mean 67.4 years) with RCC underwent RFA. The tumors were diagnosed by contrast-enhanced CT and had radiological features in CT described by Bosniak as characteristic for renal cell carcinoma. Average tumor diameter was 36 mm (from 9 to 40 mm). The procedure was performed in the epidural anesthesia in the supine position under USG guidance. White blood cells count (WBC – neutrophils, lymphocytes, monocytes), body temperature were measured at baseline and 24 hours after RFA. CRP (C-reactive protein) and LDH (Lactate dehydrogenase) were also measured in some patients. The t-Student test was used to compare them before and after thermoablation. A value for P less than 0.05 was considered significant.

Results: We observed increase in number of WBC up to 17.6% (7.67 G/l vs 9.03; $p < 0.01$) and proportion of neutrophils up to 19.3% (59.99 vs 71.55; $p < 0.000001$) and decrease in proportion of lymphocytes up to 36.5% (29.61 vs 18.81; $p < 0.000001$). The proportion of monocytes was unchanged. The levels of LDH and CRP were significantly increased in four of five patients. None of the patients had a fever 24 hours after the procedure.

Conclusions: In our study RFA causes moderate inflammatory response without any complications. It may be related to the presence of necrotic tissue left in the ablated kidney. It is possible that during RFA, *in situ* heat fixation of the surrounding tissue may prevent the release of intracellular compounds that are responsible for the exaggerated inflammatory syndrome as observed after cryoablation.

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The frequency of clinical symptoms in kidney cancer cases

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Introduction and Objectives: The aim of this study was to identify frequency of clinical symptoms in kidney cancer cases.

Material and Methods: All patients who had undergone surgical treatment because of renal carcinoma (RCa) since Jan 1998 to Dec 2007 were included into this retrospective single institution study. Data on tumor size and histology were collected from pathological reports. There was collected most common clinical symptoms of kidney cancer: general complaints, hematuria, pain, asthenia and weight loss. All cases were divided into groups according tumor histology, size, patient's age and gender. Exclusion criteria for size and histology calculation were benign tumor and known metastasis at the time of surgery. Statistical analysis was performed using descriptive statistic, Chi-Square parameter.

Results: 999 cases were included to this study. The median patient's age was 64 ± 11.57 (range 18–91) years. 54.1% males and 45.9% females were operated. There was performed 78.8% nephrectomies, and 21.2% kidney resections. 14.7% of all surgical procedures was made laparoscopic. Patients has reported following symptoms: general complaints (59%), hematuria (17%), pain (44.8%), asthenia (8.9%), weight loss (3%). There was identified frequency rate of clinical signs for metastatic cancer 71.3% and cancer without known metastasis (57.5%) ($p = 0.006$). The frequency of hematuria was detected for metastatic cancer 27.8%, in cases without known metastases 15.7% ($p = 0.002$). Frequency of hematuria for malignant tumors was 97.9%, and for benign 2.1% ($p = 0.004$). Frequency of clinical signs by histological groups were following: transitional cells ca. – 95%, clear cells ca. – 55.8%, papillar ca. – 67.3%, chromofobic ca. – 61.5%, other (non classified) ca. – 58% ($p = 0.003$). Frequency of hematuria is most identified in transitional cells ca. group 72.7%. ($p = 0.0005$). Frequency of clinical signs by tumor size were following: ≤ 4 cm. – 45.7%, 4–7 cm. – 62.9%, 7–10 cm. – 66.2%, ≥ 10.1 cm. – 76.3%. ($p = 0.0005$). There was no significant difference of clinical signs frequency by gender and age.

Conclusions: Clinical signs frequency is higher for metastatic cancer, than cancer without known metastasis. Frequency rate of hematuria is higher for malignant tumors, than for benign. Transitional cells carcinoma is most symptomatic histological group. Tumor size has significant influence for frequency rate of clinical symptoms.

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Tumor size influence on cancer specific and overall survival after surgical renal carcinoma treatment

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Introduction and Objectives: The aim of this study was to evaluate influence of tumor diameter on cancer specific and overall survival after surgery of renal carcinoma.

Material and Methods: All patients who had undergone surgical treatment because of renal carcinoma (RCa) since Jan 1998 to Dec 2004 were included into this retrospective single institution study. Data on tumor size, grade, stage and histology were collected from pathological reports. All tumors were divided into four groups according diameter: 1st group ≤ 4 cm; 2nd group 4–7 cm; 3rd group 7–10 cm and 4th group > 10 cm. Exclusion criteria were benign tumor and known metastasis at the time of the surgery. Data about patient's death and reasons of the death were received from national cancer registry. Statistical analysis was performed using descriptive statistic, Kaplan-Meier and Cox regression.