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Introduction & Objectives: Upper tract urothelial carcinoma (UTUC) is rare, but potentially highly aggressive disease that often requires use of chemotherapy in adjuvant or palliative setting. Nevertheless, kidney function in UTUC patients is often impaired after surgery which limits prospects of systemic therapy.

The objective of the study was to determine functional and oncological outcomes of high-risk UTUC patients that underwent kidney-preserving surgical interventions.

Materials & Methods: Retrospective cross-sectional analysis of 109 patients with high-risk UTUC, among which a group of 35 (32%) tumors which underwent kidney-preserving surgery was selected. Prior to treatment all patients matched inclusion criteria: presence of clinically verified high risk UTUC, unifocal lesion, preserved kidney function on the affected side, absence of local or distant metastases, good performance status. In all cases surgical procedure included affected upper urinary tract segment removal with reconstruction of unilateral upper urinary tract. Functional outcomes were assessed by eGFR (MDRD formula) prior and 1 year after surgery accompanied by scintigraphy data, which was done routinely. Oncological outcomes were based on CT finding prior and after surgery and evaluated by RECIST 1.1.

Results: Follow-up ranged from 3 to 108 months, with median - 34 months. Average age - 57 years. Men\women ratio: 24\11. Average eGFR prior to surgery was 67,4 + 5,4 ml/min, affected kidney filtration rate - 22,6 + 6,2 ml/min.

eGFR 1 year after surgery - 62,5 + 6,9 ml/min, affected kidney filtration rate - 21,2 + 4,1 ml/min.

Detailed statistical analysis revealed higher postoperative level of preserved kidney function in patients with lower and mid ureteral lesions (tGFR = 69,4 + 4,8 ml/min, affected kidney GFR = 24,3 + 5,2 ml/min) compared to upper ureter and pyelocaliceal system tumors (tGFR = 56,6 + 5,2 ml/min, affected kidney GFR = 17,1 + 6,1 ml/min) (P = 0,032; P= 0.021).

After surgery 21 (60%) patients received cisplatin based chemotherapy in adjuvant and 6 (17%) - in palliative setting, with no dose reduction. Secondary radical nephroureterectomy was done in 4 (11%) cases with local upper urinary tract relapse. Evaluated 3 - year progression-free survival equaled 83%, cancer specific survival - 89%.

Conclusions: Kidney function preservation in high risk UTUC, enlarges possibilities of further platinum based chemotherapy conduction, thus, creating a possibility of clinical and oncological benefit in selected patients.