38 Outcomes of neoadjuvant targeted therapy in patients with localized RCC

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Introduction & Objectives: The aim of the study was to evaluate efficacy of neoadjuvant targeted therapy (TT) in terms of increasing possibility of nephron-sparing surgery (NSS) for localized RCC.

Materials & Methods: Results of prospective randomized study starting from 2015 and including 118 cases of localized RCC. TT group included 58 (49,2%) patients treated with 2 cycles of Pazopanib (800mg) preoperatively with further investigation of its efficacy. Control group included 60 (50, 8 %) patients which underwent only surgery. The groups were comparable by age, sex, tumor size, body mass index, hemoglobin and creatinine levels, total GFR ($p > 0.05$). All patients underwent complex clinical examination, that included evaluation of tumor regression according to RECITS 1.1 and remaining functional parenchyma volume (RFPV) according to NCIU–scoring system developed in the department.

Results: Indications to neoadjuvant TT were: imperative 12 cases (20,7%) (6 bilateral and 6 solitary kidney RCC) and elective in 46 (79,3%) cases. Tumor location: 34 (58,6%) – central with size larger than 40mm and 24 (41,4%) patients with polar or laterally located RCC spreading to renal hilum with RFPV over 50%. The use of TT leads to average decrease in tumor size from з (M±SD (95% CI)) 60,8±19,7 (55,7-66) to 48,5±16,4 (44,2-52,8) mm (t-test; $p<0,001$). Neoadjuvant TT prompted RCC regression in 50 (86,3%) cases, with average decrease up to 20,5±14,3 (16,8-24,3)%. In 8 (13,8%) patient's tumor size didn't change. There were no cases of progression during TT. In 44 (75,9%) tumors regression level reached 30%, in other 14 (24,1%) – was over 30%, with maximum regression at 60%. There was found no dependence between tumor size and regression level (ANOVA, η^2 =0,01 with power at 0,1 ($p = 0,72$)). Average regression at Fuhrman 2 reached M±SD (95% CI) 22,6±14,4 (18,3-26,9)%, Fuhrman 3 - 17,1±11,7 (7,3-26,9)%, Fuhrman 4 - 3,8±2,9(0-8,5)% (ANOVA, η^2 =0,13 with power at 0,72 ($p=0,029$)). The effects of TT prompted to proceed to partial nephrectomy in 53 cases (91,4%) over only 22 (33,3%) in surgery group ($x^2 = 42,1$; $p < 0,0001$). Intraoperative blood loss was higher in TT group and equaled Me [25%-75%] 300 [250-400] ml versus 200 [100-300] ml (Mann-Whitney U test; $p<0,05$) respectively. Total GFR level 3 months after surgery didn't change in TT group and equaled M+m (95% CI) 78+17 (61-95) ml/min/1,73m^2 and decreased in control group to 61+12 (50-72) ml/min/1,73m^2 (Mann-Whitney U test; $p<0,001$).

Conclusions: The use of neoadjuvant TT in patients with localized RCC showed average tumor size regression of 20,5±14,3 (16,8–24,3)%, that enabled kidney preservation at tumor size 60,7±19,8 mm in 91,4% ($x^2 = 42,1$; $p < 0,0001$). Positive treatment strategy results suggest applicability of neoadjuvant TT use in localized RCC management.