

## PP-001

### Evaluation of the safety of PCNL and URSL procedures on the solitary kidney in the own material

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**Study Objective:** The aim of this study was to evaluate the safety of PCNL and URSL procedures on the solitary kidney and to determine the prevalence of possible complications. The analysis involved changes in body homeostasis; blood hemoglobin levels, creatinine concentration and leukocytosis before and after the procedure were analysed.

**Material and Method:** A retrospective study involved 51 patients who were operated on by means of PCNL and URSL methods. 34 patients with nephrolithiasis were treated using PCNL method. In 17 patients with ureterolithiasis URSL procedure was performed. The evaluation included 37 (72.5%) women and 14 (27.5%) men at the ages of 28 to 72 years (mean 53.5 ± 11.7 years). In all these patients the operational risk related to complications during or after anaesthesia was evaluated using the ASA scale. The patients were qualified for PCNL and URSL procedures based on anamnesis, physical examination, abdominal USG, plain abdominal X-ray and urography. The safety of PCNL and URSL procedures was evaluated by measuring haemoglobin levels, leukocytosis and creatinine concentration before and after the procedure. The occurrence of urosepsis, fever over 38°C, presence of bleeding and necessity to insert the DJ catheter on the first day after PCNL and URSL procedures were analysed. In all the patients eGFR (glomerular filtration rate) was calculated using the following formula:  $GFR = 186.3 \times (\text{creatinine in mg/dl})^{-1.154} \times (\text{age})^{-0.203} \times C$  where: C – constant: for men - 1, for women - 0.742

**Results:** In patients with a solitary kidney 34 PCNL procedures were performed (66.7% of the total number of procedures). In 17 patients URSL was performed (33.3% of the total number of procedures). In the study subjects 11 (21.6%) ESWL procedures were performed: n 8 patients after PCNL (23.5%) and in 3 patients after URSL (17.6%). In 74.5% of cases no complications were observed; complications only occurred in 25.5% patients. Fever over 38°C was observed in 9 (17.6%) subjects. No significant differences were observed in relation to the prevalence of urosepsis. One patient in 51 developed urosepsis (2.0% of all subjects). Insertion of DJ catheter due to persistent urinary retention was necessary in 3 (5.9%) patients. Haemoglobin levels, leukocytosis, creatinine concentration and GFR before and during the first day after procedure were comparable. After procedure, statistically significant decrease in haemoglobin concentration was only observed, however, it did not require blood transfusion (p<0.001).

**Conclusion:** PCNL and URSL procedures may be safely performed in patients with a solitary kidney. Minimally invasive treatment of nephrolithiasis results in decreased haemoglobin concentrations without any haemodynamic consequences.