

Villa L., Fallara G., Menean M., Ventimiglia E., Briganti A., Salonia A., Montorsi F.

Ospedale San Raffaele, Division of Experimental Oncology/Unit of Urology; URI, Milan, Italy

**Introduction & Objectives:** The reported complications rate following ureterorenoscopy (URS) in patients treated for stones is low. We assessed the rate of and the predictors of immediate urosepsis and early postoperative complications at 30-day post-URS in a homogenous series operated at a single institution.

**Materials & Methods:** Data from 212 patients treated with URS with holmium:YAG laser stone lithotripsy (March 2016 - June 2018) were analysed. Any preoperative concomitant urinary tract infection (UTI) was treated before surgery in every patient; moreover, every patient received preoperative antibiotic prophylaxis. Rates of and type of early complications over the 30 postoperative days were investigated. Stone-free status was defined as a complete absence of any residual fragments at radiological investigations (ultrasound + abdomen X-Ray or CT scan) at 30 days. Descriptive statistics was applied to detail clinical features of all patients. Logistic regression analyses tested the impact of patients' characteristics (age, Charlson Comorbidity Index (CCI) score, UTI history, stone size) and intraoperative data (presence of DJ stent at surgery, operative time and the use of ureteral access sheath) in terms of rate of immediate sepsis (defined as for the 3<sup>rd</sup> International Consensus Definitions for Sepsis and Septic Shock) and emergency room (ER) visits at discharge.

**Results:** Overall, 26 (12.3%), 7 (3.3%), 4 (1.9%) and 1 (0.4%) patients developed postoperative fever, urosepsis, septic shock, and death, respectively. At 30-day postoperative assessment, 19 (8.9%) patients accessed to the ER due to pain (n=8; 3.8%) or fever (N=11; 5.1%). Of 19, 9 (4.2%) patients were hospitalized and 4 (1.8%) patients required an endoscopic intervention. Stone-free rate at 30-day was 60.5%. A history of UTI and greater CCI scores were both univariably (OR=15.7; 95%CI=2.8-83.1 and OR=1.7; 95%CI=1.2-2.5, respectively) and multivariably (OR=28.8; 95%CI=2.6-326.2 and OR=2.1; 95%CI=1.1-3.8) associated with a higher risk of immediate postoperative urosepsis. The stone-free status at 30 days post-URS was associated with a reduced risk of an ER visits (UVA: OR=0,1; 95%CI=0.03-0.38; MVA: OR=0.07; 95%CI=0,02-0,32).

**Conclusions:** The risk of having early complications after discharge is not negligible in patients submitted to URS and stone lithotripsy. An optimal surgical stone clearance seems to reduce the risk of subsequent ER visits. Our findings recommend a comprehensive counselling and an accurate monitoring of candidates to URS with either comorbidities or a previous UTI history.