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EARLY AND RAPID PREDICTION FOR POSTOPERATIVE INFECTIONS FOLLOWING PERCUTANEOUS NEPHROLITHOTOMY IN PATIENTS WITH COMPLEX KIDNEY

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Biography

Chonghe Jiang is the first Research Engineer of Linkoping University, Sweden. Currently, he is working in Qingyuan People's Hospital of Guangzhou Medical University, China as a Professor, Urologist and Director of Kidney Center. He is a major in research work on voiding dysfunctions, and clinical work on urinary tract stone and infections. All his publications are involved in neuron control of lower urinary tract and identifying and clarifying the bladder cooling reflex and applying neuro-modulatory technique in treatment of urinary incontinence by using electrical stimulation are main contributions in this area.

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Purpose: The purpose of the study is to obtain more accurate and rapid predictors for systemic inflammatory response syndrome (SIRS) after percutaneous nephrolithotomy (PCNL) in complex kidney stone patients and provide evidence for early prevention and treatment of postoperative infections.

Methods: A total of 802 complex kidney stone patients undergone PCNL from September 2016 to September 2017 were recruited in the study. Urine tests, urine cultures and stone cultures were performed, the perioperative data were prospectively recorded.

Results: 62 (7.7%) patients developed postoperative SIRS. A multivariate logistic regression analysis revealed that operating time ≥100 min, urine tests with both positive urine leukocyte and positive urine nitrite (UL+UN+), positive urine cultures (UC+) and positive stone cultures (SC+) were independent risk factors of SIRS. The incidence of postoperative SIRS was higher in UL+UN+ (28.7%) and both UC and SC were positive (UC+SC+; 28.8%) patients than that in any other patients ($p<0.05$). Preoperative UL+UN+ can be used to predict UC+SC+ with accuracy of more than 90%. The main pathogens in kidney stones were *Escherichia coli* (43.8%), *Proteus mirabilis* (14.0%), *Staphylococcus* (7.4%), while main pathogens in urine were *Escherichia coli* (53.8%), *Enterococcus* (9.4%) and *Proteus mirabilis* (7.6%). The occurrence of *Escherichia coli* was more frequent in group with SIRS than in group without SIRS ($p<0.05$).

Conclusions: UL+UN+ in preoperative urine tests could be considered as the early and rapid predictor for UC+SC+ and postoperative SIRS. SIRS following PCNL was more related to *Escherichia coli* infections in complex kidney stone patients.

Note: