

The Risk of Post-Operative Sepsis in Patients Undergoing Interventions for Upper Urinary Tract Stones: A Study from the American College of Surgeons National Surgical Quality Improvement Database

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Introduction

- Ureteroscopy (URS) and percutaneous nephrolithotomy (PCNL) are common treatment modalities for stone disease
- Increasing medical complexity of patients has raised concerns regarding a higher rate of post-operative complications
- Our study aimed to:
 - Determine the incidence of sepsis following URS and PCNL over time
 - Identify predictive factors associated with the development of sepsis

Methods

- National Surgical Quality Improvement Database (NSQIP)
 - Voluntary, multi-institutional, validated database measuring risk-adjusted surgical outcomes
 - Identify patients undergoing URS or PCNL from 2006-2017
- Patient and procedural characteristics, and the occurrence of post-operative sepsis were analyzed
- Sepsis was defined as the presence of two or more systemic inflammatory response (SIRS) criteria

Risk of Post-Operative Sepsis following Ureteroscopy or Percutaneous Nephrolithotomy

Results

- Associated with overall sepsis occurrence:
 - Higher ASA score (OR 1.21, $p=0.027$)
 - Active smoking status (OR 1.35, $p=0.008$)
 - Dialysis (OR 3.66, $p<0.001$)
- Associated with sepsis following URS:
 - History of bleeding disorder (OR 1.5, $p=0.003$)
 - Congestive heart failure (OR 1.58, $p=0.019$)
 - Greater number of days from hospital admission to surgery (OR 1.23, $p=0.006$)

Discussion

- Overall incidence of post-operative sepsis following URS and PCNL remain low
- Trend towards increasing rates of sepsis in patients undergoing URS
- Further investigation is required
 - Determine the potential causes(s) for the trend of increasing sepsis
 - Develop reliable predictive models to mitigate the risk of post-operative sepsis