



# Practice Patterns and Outcomes in Patients Undergoing Ureteroscopy with Uncorrected Bleeding Diatheses in a Surgical Collaborative

Spencer C Hiller<sup>1</sup>, Ji Qi<sup>1</sup>, David Leavitt<sup>2</sup>, J Rene Frontera<sup>3</sup>, S Mohammad Jafri<sup>4</sup>, John Hollingsworth<sup>1</sup>, Casey A. Dauw<sup>1</sup> and Khurshid R. Ghani<sup>1</sup>

<sup>1</sup>University of Michigan, Ann Arbor MI; <sup>2</sup>Henry Ford Health System, Detroit, MI; <sup>3</sup>Michigan Institute of Urology, Troy, MI; <sup>4</sup>William Beaumont Hospital, Royal Oak, MI

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## Background

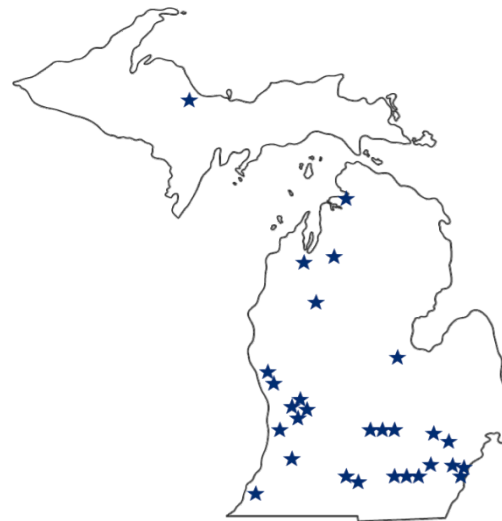
AUA stone management guidelines recommend **ureteroscopy (URS)** as first line therapy in patients with urolithiasis and continuous **anti-coagulant (AC) or anti-platelet (AP) therapy** requiring intervention. Urologists are urged to strongly consider use of a **ureteral access sheath (UAS)** to minimize intra-renal pressure.

## Objectives

Examine variation in practice patterns and outcomes including emergency department (ED) visits and hospitalizations, and UAS use in patients undergoing URS while taking:

- AC therapy – clopidogrel or aspirin
- AP therapy – warfarin or novel oral agent

Relative to a control cohort: Neither AC nor AP therapy



- Community and academic practices
- >90% of urologists in Michigan
- Case Volume (Jan. 2020)
  - URS: +13,300 cases

## Methods

- All primary URS procedures within the prospective clinical registry divided into groups based on therapy at the time of URS: AC group, AP group, control group. Excluded patients on simultaneous AC and AP therapy.
- We assessed practice and surgeon-level variation based on those with at least 10 URS in registry
- Outcomes and adherence to AUA guideline recommendations were compared between AC, AP and control groups using mixed effect logistical regression controlling for risk factors

## Results

Total of 9982 URS from 26 practices and 144 surgeons

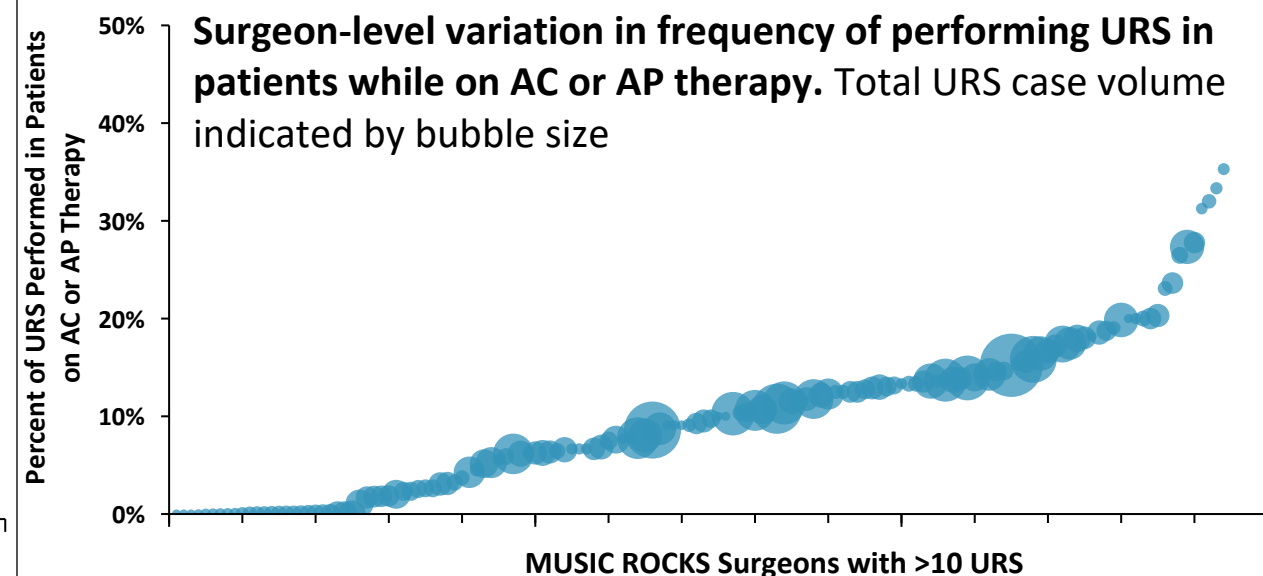
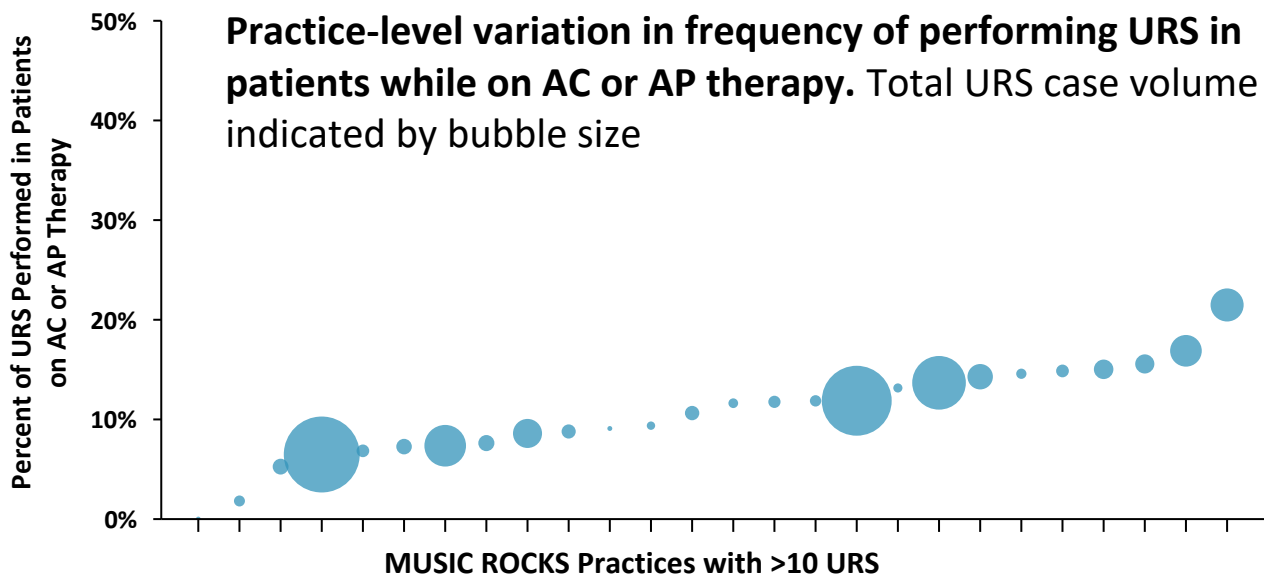
- AC = 306 (3.1%) URS
- AP = 776 (7.8%) URS
- Control = 8900 (89.2%) URS




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Outcomes		Guideline Adherence
 <u>ED Visit</u> AC OR 1.34 (95% CI 0.89–2.02) AP OR 1.25 (95% CI 0.95–1.66)	 <u>Hospitalization</u> AC OR 1.12 (95% CI 0.60 – 2.09) AP <b>OR 1.48</b> <b>(95% CI 1.02 – 2.14)</b>	 <u>Ureteral Access Sheath Use in URS for Renal Stones</u> AC/AP OR 1.12 (95% CI 0.92 – 1.61)

## Conclusions:

- There is a significant practice and surgeon **variation** in performing URS while on AC or AP agents
- Neither AC nor AP therapy is associated with increased odds of ED visit
- Risk of **hospitalization** following URS is **increased** in patients taking **AP therapy**
- UAS use during URS for renal stones is not associated with AC or AP therapy