(0–6), intermediate-risk (7–12), and high-risk (13–18) groups. SF status was defined as residual fragments ≤2 mm on non-contrast CT at 4–6 weeks. Predictive performance was assessed via multivariable logistic regression, ROC analysis, and calibration testing; interobserver reliability was evaluated using weighted κ.

RESULTS: Mean age was 46 ± 11 years (52.1% male); mean stone volume 1.9 ± 0.8 ml, density 1020 ± 210 HU. Overall SF rate was 73.2% (52/71), declining significantly across risk groups: low 90.9% (20/22), intermediate 72.4% (21/29), high 44.4% (12/27) ($p<0.001$; Figure 1C). The MEDENIYET Score independently predicted SF outcome (OR 0.68 per 1-point increase; 95% CI 0.54–0.83; $p<0.001$). ROC analysis yielded AUC 0.861 (95% CI 0.782–0.940), comparable to CROES (0.842; p=0.24) and superior to S. T. O. N. E. (0.774) and Guy's (0.743) (both $p<0.05$; Figure 1A). Calibration was excellent (Hosmer–Lemeshow p=0.72; Figure 1B).Interobserver agreement was substantial (weighted κ = 0.81). No major complications (Clavien ≥III) occurred.

CONCLUSIONS: The MEDENIYET Score is the first validated, HK-specific preoperative tool for predicting RIRS outcomes, integrating anatomical parameters (isthmus width, pelvic expansion, calyceal orientation) to deliver accurate risk stratification comparable to CROES and superior to generalized systems. It enables evidence-based patient counseling and surgical planning in this challenging population.

Table 1. MEDENIYET Score: Components and Scoring Criteria for Horseshoe Kidney RIRS Outcomes

Parameter	0 Points (Favorable)	1 Point (Intermediate)	2 Points (Unfavorable)
M – Measure (Stone volume)	< 500 mm³	500–1000 mm³	> 1000 mm³
E – Expansion (Pelvic dilatation)	Minimal (< 10 mm)	Moderate (10–20 mm)	Severe (> 20 mm)
D – Diameter (Isthmus diameter)	> 15 mm	10–15 mm	< 10 mm
E – Essence (Stone density)	< 800 HU	800–1200 HU	> 1200 HU
N – Number (Stone count)	Single stone	2–3 stones	≥ 4 stones
I – Infundibulo-pelvic length (Lower calyx to pelvis)	< 30 mm	30–45 mm	> 45 mm
Y – Y-axis deviation (Pelvic axis deviation)	< 30°	30–50°	> 50°
E – Entrance angle (Ureteropelvic junction)	> 90°	60–90°	< 60°
T – Targeted calyx (Dominant stone location)	Lower calyx	Mid calyx	Upper calyx

Risk Stratification by Total MEDENIYET Score (0–18 points):
- **Low Risk (0–6 points):** Stone-free rate 90.9% (95% CI: 83.5–98.3%)
- **Intermediate Risk (7–12 points):** Stone-free rate 72.4% (95% CI: 62.8–82.0%)
- **High Risk (13–18 points):** Stone-free rate 44.4% (95% CI: 33.1–55.7%)

Abbreviations: HU = Hounsfield Units; mm = millimeters; mm² = square millimeters; ° = degrees; CI = confidence interval; RIRS = retrograde intrarenal surgery.

Measurement Instructions: Stone volume calculated using ellipsoid formula (π/6 × A × B × C) on non-contrast CT. Pelvic expansion measured as maximum anteroposterior diameter of renal pelvis on CT urography. Isthmus diameter measured at narrowest segment on axial CT. Stone density represents mean Hounsfield Units of dominant calculus. Y-axis deviation measured as angle between renal pelvis axis and vertebral midline on coronal CT. Entrance angle measured between ureter and renal pelvis on coronal reformatted images. All measurements performed by experienced radiologists/urologists with substantial interobserver agreement (weighted κ = 0.81).

Figure 1: MEDENIYET Score Performance & Clinical Validation

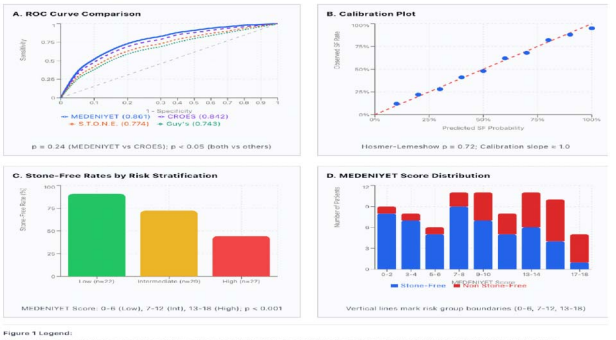

Figure 1 Legend:
(A) Receiver operating characteristic curves comparing MEDENIYET to established scoring systems. MEDENIYET demonstrated superior discrimination (AUC 0.861) comparable to CROES (0.842, p=0.24) and significantly better than S.T.O.N.E. (0.774) and Guy's (0.743) scores (both $p<0.05$). **(B)** Calibration plot showing excellent agreement between predicted and observed stone-free rates (Hosmer–Lemeshow p=0.72). Red dashed line represents perfect calibration. **(C)** Stone-free rates stratified by MEDENIYET risk groups, demonstrating significant discrimination across low (90.9%), intermediate (72.4%), and high-risk (44.4%) categories ($p<0.001$). **(D)** Distribution of MEDENIYET scores in the study cohort (n=71), stratified by stone-free outcome. Vertical dashed lines indicate risk group boundaries. SF = stone-free; AUC = area under the curve; CI = confidence interval.

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IP63-22

CONSENSUS BASED ANTIBIOTIC STRATEGIES FOR PATIENTS UNDERGOING URETEROSCOPY

Suprita Krishna, Stephanie Daignault-Newton, Caitlin Seibel, Jerison Ross, Amiya Alexander, Ann Arbor, MI; Alex Small, Bronx, NY; Austin Fernstrum, Kalamazoo, MI; Hamza Beano, Royal Oak, MI; Brian Seifman, Grand Rapids, MI; David Leavitt, Detroit, MI; David Wenzler, Royal Oak, MI; Dima Raskolnikov, Bronx, NY; Gopal Narang, Chapel Hill, NC; Hector Pimentel, Grand Rapids, MI; Henry Rosevear, Troy, MI; Jaime Bartley, Lansing, MI; Wilson Sui, Khurshid Ghani, Casey Dauw, For The Michigan Urological Surgery Improvement Collaborative, Ann Arbor, MI

INTRODUCTION AND OBJECTIVES: The American Urological Association guidelines recommend culture directed pre-operative antibiotics for patients with positive urine cultures prior to surgical intervention for nephrolithiasis. There is less clarity regarding optimal antibiotic duration, peri-operative selection, and the need for or duration of post-operative therapy. Balancing antibiotic use is particularly important for patients with factors that may influence their risk profiles, such as indwelling stents, nephrostomy tubes (PCN), or mechanical bladder drainage, and current guidelines do not address many real-world scenarios. We aimed to develop a risk-stratified consensus roadmap for antibiotic selection and duration in patients undergoing ureteroscopy (URS).

METHODS: A modified Delphi consensus panel was convened through the Michigan Urological Surgery Improvement Collaborative. Panelists evaluated pre, peri, and post operative antibiotic use across three categories: (1) asymptomatic nephrolithiasis, (2) indwelling ureteral stent or PCN, and (3) mechanical bladder drainage (foley, suprapubic tube, or intermittent catheterization). Consensus was reached over three survey rounds (July–September 2025) and defined by stable responses across two rounds and ≥80% agreement in rounds one and two or ≥70% in round three.

RESULTS: Twenty-six of 32 panelists (81%) completed all rounds, representing both academic and community urologists. Consensus was achieved in 12 of 21 (57%) antibiotic-related scenarios. Agreement was strongest for uncomplicated kidney stones and for stents or nephrostomy tubes placed for colic or sepsis with negative pre-operative urine testing, where single-dose peri-operative antibiotics were recommended. In contrast, scenarios involving indwelling stents and mechanical bladder drainage and positive pre-operative urine cultures, panelists recommended culture directed pre- and peri-op antibiotics. For patients with mechanical bladder drainage and positive, asymptomatic (colonized) urine, the duration of pre-operative antibiotics should be limited to ≤3 days. Recommendations detailed in Figure 1.

CONCLUSIONS: Using a modified Delphi process, we developed risk-stratified recommendations for antibiotic selection and duration in URS. This work defines areas of consensus and areas for further study to support antibiotic stewardship and infection prevention.

Figure 1: Risk stratified antibiotic prescribing for patients undergoing URS

Clinical Scenario	Urine test	Pre-op antibiotics	Peri-op antibiotics	Post-op antibiotics
Asymptomatic kidney stone	Negative	None	Standard	None
	Positive Asymptomatic	Culture directed	Culture directed	*Optional*
	Positive Symptomatic	Culture directed	Culture directed	*Optional*
Indwelling stent/PCN - *Colic*	Negative	None	Standard	None
Indwelling stent/PCN - *Sepsis*	Negative	None	*Standard vs culture directed*	*Optional*
	Positive	Culture directed	Culture directed	*Optional*
Mechanical bladder drainage (foley, SPT, ISC)	Positive Asymptomatic *(colonized)*	≤3 days culture directed	Culture directed	*Optional*
	Positive Symptomatic	Culture directed	Culture directed	Culture directed

Source of Funding: BCBSM

IP63-23

UNDERSTANDING THE ROLE OF ANDROGEN LEVELS IN NEPHROLITHIASIS: AN OVERARCHING VIEW OF TESTOSTERONE'S RELATIONSHIP TO STONE DISEASE

Sandeep S. Voleti, Jaxson Jeffery, Alexander Theophilopoulos, Nahid Punjani, Phoenix, AZ

INTRODUCTION AND OBJECTIVES: There is growing interest in the relationship between testosterone deficiency, and testosterone replacement therapy with nephrolithiasis. However, limited data exists in this literature. We aim to better understand this relationship in this study.

METHODS: Data was collected using the Mayo Clinic Platform Discover database. This includes de-identified clinical data from the electronic medical record for over 16 million patients, that have been collected as part of routine clinical care between December 1989 and June 2025. Cohorts of interest were designed including adult males who had either a diagnosis of nephrolithiasis (based on all ICD-10 codes that encompass renal and ureteral stones) or who had any record of testosterone therapy. Basic descriptive statistics and time to event analysis were performed.

RESULTS: Our first cohort included all adult male patients who had at least one diagnosis of nephrolithiasis and had a serum testosterone level reported (n = 16,475). Our control cohort included all adult males who have never had a diagnosis of nephrolithiasis and at least one testosterone level documented (n = 146,878). In regards to total testosterone levels, the median testosterone level amongst those with a stone history was 330.5 ng/dl (IQR 208.5, 474.2) while the median level for those without a stone history was 356.1 ng/dl (IQR 231.2,499). The next cohort that was built included all adult males who were on testosterone replacement therapy of any form (n = 55,108), with the comparison cohort including all adult males who had never received any form of testosterone replacement (n = 3,164,237). These cohorts were assessed for incidence of at least one episode of nephrolithiasis after initiating therapy. Time to event analysis for an episode of nephrolithiasis yielded a hazard ratio of 3.31 (95% CI 3.16 − 3.45).

CONCLUSIONS: This review suggests that while baseline testosterone levels are similar between stone formers and non-formers, being on testosterone replacement may increase one's risk of forming stones.

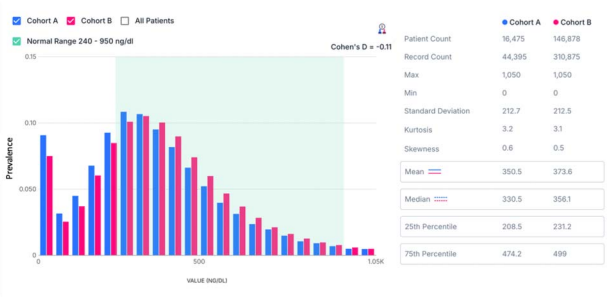

Figure 1: Baseline testosterone levels amongst adult males with and without history of nephrolithiasis. Cohort A represents all adult males with a history of nephrolithiasis, while Cohort B represents all adult males without a history of nephrolithiasis.

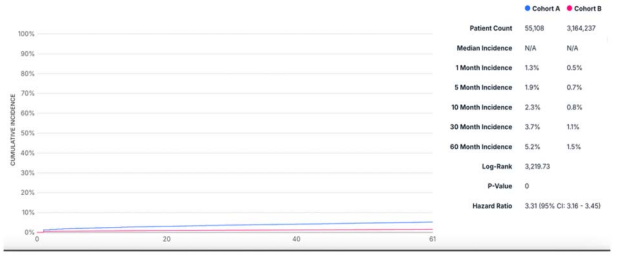

Figure 2: Cumulative incidence of at least one nephrolithiasis episode amongst adult males. Cohort A represents all adult males who are on some form of testosterone replacement therapy, while Cohort B represents all adult males who have never been on any form of testosterone replacement therapy.

Source of Funding: None

IP63-24

GLOBAL PRACTICES AND PERCEPTIONS IN STONE BURDEN ASSESSMENT: RESULTS FROM THE INTERNATIONAL SURVEY ON STONE VOLUME MEASUREMENT

Fikayo D. Akinbo, Felipe Antonio Pauchard, Cleveland, OH; Larrañaga Matias, Santiago, Chile; Frederic Panthier, Paris, France; Jose A. Salvado, Cleveland, OH

INTRODUCTION AND OBJECTIVES: Accurate quantification of stone burden is essential for surgical planning and outcome reporting, yet methods remain highly variable. This study aimed to characterize current global practices, preferences, and perceived barriers related to stone volume assessment among urologists.

METHODS: An anonymous web-based survey was distributed through international endourology societies between June and October 2025. The questionnaire explored demographic data, preferred metrics for stone burden, methods used for volume estimation, time required per case, and perceived feasibility of routine volumetry. Subgroup analyses were performed by years of experience (<10 vs ≥10), training level (fellow vs non-fellow), and practice setting (academic vs non-academic).

RESULTS: Among 252 respondents from six continents, 91.7 % were attending urologists. While 83 % reported routinely using maximum diameter to quantify stone burden, only 27 % used any volumetric metric. When volume was estimated, geometric formulas (ellipsoid or sphere) were most frequent (62 %), whereas 3-D segmentation or PACS tools were rarely used (<10 %). Most participants required <5 min per case, indicating feasible workflow integration.

Across all groups, 82 % agreed that volume better represents stone burden than diameter. However, adoption correlated with younger age (<10 years of practice, p = 0.04) and academic setting (p<0.05). Fellows expressed stronger belief in volumetric superiority (p<0.01), while non-fellows reported slightly higher confidence in routine feasibility (p = 0.02). Overall, 87 % would adopt volumetry if automated tools were available.