

Calculi & Kidney

3:00 - 4:30pm Wednesday, 3rd November, 2021

69 Challenging the Status Quo: Can Low Dose CT Diagnose Stones in Obese Patients?

Joshua D Belle MD, Gabriel E Martin MS, Mohamed Keheila md, Jason C Smith MD, Mohammad Hajiha MD, Stephanie Jensen MD, D Duane Baldwin MD
Loma Linda University, Loma Linda, CA, USA

Abstract

Introduction:

Obesity is a significant risk factor for both stone formation and recurrence. The purpose of this study was to evaluate the utility of low dose CT scan in clinical patients with nephrolithiasis.

Methods:

A retrospective chart review of 734 patients at a single institution undergoing CT scan for kidney and ureteral stones from 2014-2020 was conducted. Patients with BMI <30, those without conventional and low dose CT within 3 months, and those undergoing interval treatment or stone passage were excluded. Low dose (LD) CT was defined as dose length product (DLP) <266 mGy*cm (<4 mSv), and ultra-low dose (ULD) was defined as <126 mGy*cm (<1.9 mSv) per the American Association of Physicists in Medicine. LD and conventional dose (CD) CT scans were stripped of identifying information and reviewed in a randomized fashion by a blinded board-certified abdominal imaging radiologist specializing in kidney stones. Data were collected and analyzed with Wilcoxon matched pairs signed rank test and p<0.05 considered significant.

Results:

Twenty-six patients met inclusion criteria. Patient BMI ranged from 30.5 to 63.8 (mean 37.3) with 18 < 40 and 8 ≥40. Mean radiation exposure was 15.14 mSv for conventional CT. Four patients had ULD (mean 1.37 mSv) and 22 had LD (mean 2.72 mSv) studies. 49/55 stones (89%) were seen on LD CT when compared to CD CT. All 6 stones missed on LD CT were ≤ 2mm. One false positive or newly formed 2.1 mm stone was identified on a LD CT done 36 days after CD CT. Stone size on CD CT ranged from 1 to 26 mm (mean 7.5mm) with 29 ≤5mm and 21 >5mm. Median difference in stone size between CD and LD CT was 0.2mm (p=0.1). None of the false negatives or the false positive on LD CT would have altered management.

Conclusions:

LD CT in patients with BMI >30 accurately identifies clinically significant stones while reducing radiation exposure by 82% in the LD and 91% in the ULD groups. If these results are confirmed in future studies, a modification of the AUA guidelines to include LD CT scan in obese patients should be considered.

If funding provided, type in source company / entity name(s):

None

71 Health-Related Quality of Life Disparities Among Hispanic/Latinx Patients With Nephrolithiasis

Alec R Flores BS¹, Garen Abedi MD¹, Carol B Girgiss BS¹, Kristina L Penniston PhD², Shuang Li PhD², David F Friedlander MD³, Seth K Bechis MD¹, Roger L Sur MD¹

¹UC San Diego Department of Urology, San Diego, CA, USA. ²University of Wisconsin Department of Urology, Madison, WI, USA. ³University of North Carolina Department of Urology, Chapel Hill, NC, USA

Abstract

Objectives:

It is documented that Hispanic/Latinx kidney stone formers have inferior health-related quality of life (HRQoL) compared to the general population.¹⁻³ We hypothesized that socioeconomic factors are primary drivers of this finding. Our objective was to identify factors that explain HRQoL discrepancies among Hispanic/Latinx stone formers.

Methods and Materials:

This was a prospective cohort observational study of patients with kidney stones at UC San Diego Health who were enrolled over 2 years from June 2018 to August 2020. Patients enrolled completed a validated English or Spanish copy of the Wisconsin Stone Quality of Life questionnaire (WISQoL) based on their language preference. Patient characteristics and self-reported HRQoL were compared between Hispanic/Latinx and non-Hispanic/Latinx stone formers. Matched and unmatched group comparisons were performed based on age, gender, body mass index, stone symptoms, and insurance type.

Results:

A total of 270 patients were enrolled (Hispanic/Latinx n=88; non-Hispanic/Latinx n=182). Hispanic/Latinx stone formers had higher rates of public insurance at baseline ($p < 0.001$) with significantly lower HRQoL [social impact ($p = 0.007$)]. However, a matched cohort comparison demonstrated no differences.

On multivariate analysis, private insurance increased the likelihood of having higher HRQoL (OR 2.21, 95% CI 1.12-4.02, $p < 0.05$) while stone symptoms (OR=0.06, 95% CI 0.03-0.14, $p < 0.001$) and ED visits (OR=0.04, 95% CI 0.228-0.803, $p = 0.008$) decreased the chances of higher HRQoL. Ethnicity was not a significant factor in quality of life scores on multivariate analysis.

Conclusions:

Our analysis suggests that differences in HRQoL amongst Hispanic/Latinx stone formers are primarily driven by socioeconomic factors as opposed to clinical or racial differences. Specifically, source of insurance appears to have significant effect on HRQoL in this ethnic group.

Sources of Funding: None

Table 1: Baseline Characteristics

	White N=182	Latinx N=88	p
Age	57.9±16.1	46.5±14.7	<0.001
Gender (Men)	104 (51.1%)	33 (39.0%)	0.002
Insurance type (private)	127 (58.4%)	28 (32.5%)	<0.001
Symptomatic (yes)	66 (40.3%)	56 (64.9%)	<0.001
Obese (BMI>=30)	57 (34.4%)	44 (49.4%)	0.003
BMI (kg/m ²)	28.4±7.4	31.8±8.5	0.001
Mean Charlson Comorbidity score (range)	0.39 (0-3)	0.43 (0-3)	0.257
Medical Stone Prevention Therapy	44 (24.2%)	7 (8.0%)	0.001
Total stone burden (mm) on CT	12.8±17.8	15.8±24.2	0.272

Table 2: Multivariate analysis of factors effecting WISQoL scores

	Total Score		Social Impact		Emotional Impact		Disease Impact		Impact on Vitality	
	OR (95%CI)	p	OR (95%CI)	p	OR (95%CI)	p	OR (95%CI)	p	OR (95%CI)	p
Age	0.99 (0.97-1.02)	0.74	0.98 (0.96-1.01)	0.31	1.00 (0.98-1.03)	0.51	1.00 (0.98-1.02)	0.74	1.00 (0.97-1.02)	0.98
BMI	0.97 (0.94-1.01)	0.16	0.98 (0.94-1.01)	0.32	0.98 (0.94-1.01)	0.27	0.97 (0.94-1.01)	0.20	0.98 (0.95-1.02)	0.44
Distance to care	1.00 (0.99-1.00)	0.60	1.00 (0.99-1.00)	0.38	1.00 (0.99-1.00)	0.78	1.00 (0.99-1.00)	0.60	1.00 (1.00-1.00)	0.10
Comorbidities Ref: none	0.89 (0.72-1.09)	0.27	0.91 (0.73-1.13)	0.40	0.92 (0.75-1.13)	0.45	0.87 (0.71-1.07)	0.20	0.75 (0.61-0.92)	0.01
Total stone burden	0.99 (0.98-1.00)	0.45	0.99 (0.97-1.00)	0.31	0.99 (0.98-1.01)	0.59	0.98 (0.97-1.00)	0.15	1.00 (0.99-1.01)	0.53
Gender Ref: female	1.55 (0.84-2.86)	0.15	1.71 (0.89-3.27)	0.10	1.31 (0.73-2.35)	0.35	0.94 (0.52-1.68)	0.83	2.09 (1.17-3.74)	0.01
Ethnicity Ref: white	0.97 (0.49-1.91)	0.92	0.84 (0.41-1.71)	0.63	0.82 (0.42-1.59)	0.56	0.99 (0.51-1.92)	0.98	0.81 (0.42-1.56)	0.53
Insurance Ref: Public	2.21 (1.11-4.02)	0.02	2.03 (1.03-3.99)	0.03	1.76 (0.95-3.27)	0.07	1.86 (1.00-3.44)	0.04	1.98 (1.07-3.65)	0.03
Stone										
• Have stone Ref: none	0.66 (0.29-1.50)	0.32	0.68 (0.27-1.69)	0.41	0.56 (0.26-1.22)	0.14	1.08 (0.51-2.29)	0.83	0.55 (0.26-1.17)	0.12
• Symptoms Ref: no	0.06 (0.03-0.14)	<0.001	0.09 (0.04-0.22)	<0.001	0.08 (0.04-0.17)	<0.001	0.09 (0.04-0.20)	<0.001	0.14 (0.07-0.29)	<0.001
• ER Ref: none	0.42 (0.22-0.80)	0.01	0.28 (0.14-0.56)	<0.001	0.48 (0.26-0.89)	0.02	0.45 (0.24-0.84)	0.01	0.52 (0.28-0.97)	0.04
Traumatic event Ref: no	0.95 (0.36-2.49)	0.92	1.23 (0.44-3.45)	0.69	0.50 (0.20-1.26)	0.14	1.07 (0.41-2.75)	0.88	0.65 (0.26-1.59)	0.35
Hospitalization Ref: no	0.79 (0.33-1.84)	0.58	0.92 (0.37-2.30)	0.87	0.95 (0.41-2.20)	0.91	0.82 (0.36-1.86)	0.63	0.79 (0.35-1.79)	0.58

52 Evaluation of the Online Information Landscape and Oxalate Content of Purportedly Antilithiatic Ingredients

Karan N Thaker n/a¹, Sapna Thaker n/a¹, Parris Diaz BS¹, Jacob Komberg BS², Mark E Hinsdale PhD³, Kristina L Penniston PhD³, Kymora B Scotland MD, PhD¹

¹UCLA, Los Angeles, California, USA. ²Florida Atlantic University, Boca Raton, Florida, USA. ³University of Wisconsin, Madison, Wisconsin, USA

Abstract

Objectives: With rising over-the-counter (OTC) supplement consumption, online articles touting “magic” supplements represent an obstacle for urologists in maintaining patient trust and compliance with clinical treatments. Thus, scrutinizing the composition of purportedly antilithiatic ingredients has become increasingly relevant. Our study assessed public interest and reliability of online antilithiatic ingredient information and determined information for oxalate content where possible.

Materials and Methods: We compiled the top 10 best-selling kidney stone supplements on Amazon based on number of reviews and best-seller rank. Literature review assessed evidence for the most common ingredients. Google Trends and the Buzzsumo social media analysis tool were used to evaluate engagement (likes, shares, comments) for each ingredient. A “general” search was conducted to gauge interest in the overall topic of OTCs for nephrolithiasis. We assessed online engagement with potassium citrate, a clinically accepted treatment, as a comparison to online OTC searches. Results were scored on a 1-5 reliability scale using the DISCERN tool, with a score < 2 indicating poor reliability of information.

Results: Chanca piedra, cinnamon, magnesium, turmeric/curcumin, and aloe vera were commonly searched on Amazon. Literature review revealed pre-clinical support for stone prevention with chanca piedra and curcumin, but with limited or conflicting clinical data. Google Trends revealed chanca piedra and magnesium as high interest ingredients. Mean engagement for chanca piedra, turmeric, and “general” searches were 1100%, 754%, and 2148% greater, respectively, than for potassium citrate. DISCERN scores for chanca piedra, turmeric, and “general” publications were 2.0, 1.8, and 2.2, respectively. While oxalate content is not reported for supplements, the oxalate content of turmeric, cinnamon, and aloe vera with cactus were independently analyzed and found to be high. Taken as directed, they could confer 7 mg, 14 mg, and up to 200 mg oxalate per dose, respectively.

Conclusions: Uniformly low DISCERN scores indicate poor quality of online supplement information. Far greater interest was observed in some supplements than for standard treatments, despite limited clinical evidence and potentially counterproductive effects due to oxalate content. Our work underscores the need for urologists to caution and monitor patient exploration of OTC supplements for nephrolithiasis.

56 Is Less More When Using the Novel Thulium Laser: What Fiber Size and Laser Settings Result in the Most Efficient In Situ Lower Pole Lithotripsy?

Akin S Amasyali MD, Joshua D Belle MD, Mohamed Keheila MD, Natalie Chen MS, Mohammad Hajiha MD, Elizabeth Baldwin MS, D Duane Baldwin MD
Loma Linda University Department of Urology, Loma Linda, CA, USA

Abstract

Introduction: The novel thulium fiber laser (TFL) has advantages compared to the Holmium laser (HL) including smaller fiber size (150 μm) and higher frequency settings (up to 2000 Hz). The purpose of this study was to determine the optimal fiber size and laser settings for in situ treatment of COM lower pole stones.

Methods: In a benchtop model, a 3D printed kidney and ureter were attached to a 2 x 2 mm metal mesh and submerged in a saline bath. Forty 1cm BegoStones (COM consistency) were placed in the lower pole and fragmented in situ by the same surgeon using a flexible ureteroscope. The stone was considered fully treated when residual fragments were small enough to fit through the 2mm mesh grid. Laser settings used were: 1J x 20Hz (20W), 0.4J x 50 Hz (20W), 0.2J x 100Hz (20W), and 0.1J x 200Hz (20W) for both the 150 and 200 μm fiber sizes. Data collected included lasing time, procedure time, total pulse energy, and fiber stripping. ANOVA and independent T-tests were used to compare outcomes between treatment arms with $p < 0.05$ considered significant.

Results: Pre-procedure stone weights were similar between trials (0.99 gm, $p = 0.944$). Lasing time, overall procedure time, and total pulse energy were significantly different across all 8 trials ($p < 0.05$ for all; Fig 1 and 2). Overall, use of the 150 μm fiber resulted in less total lasing time, procedure time, and pulse energy compared to the 200 μm fiber ($p < 0.05$ for all). Lasing with 0.2J and 100Hz and the 150 μm fiber had the shortest procedure time (18.5 min) compared to all other laser setting and fiber combinations ($p < 0.05$). There was no difference in the number of fiber strippings between groups ($p > 0.05$).

Conclusions: In this benchtop lower pole model of in situ treatment of COM stones, the 150 μm laser fiber resulted in shorter lasing time, procedure time, and lower total pulse energy compared to the 200 μm fiber overall. When comparing different laser energies and frequencies, the fastest procedure time was seen when using 100Hz and 0.2J. Understanding these data can help improve efficiency of treatment for dense lower pole COM stones in situ.

If funding provided, type in source company / entity name(s):

None

96 Correlation of Preoperative and Intraoperatively Obtained Urine Cultures with Final Blood Cultures in Patients with Obstructing Infected Ureteral Stones

Muhannad Alsyouf MD, Joshua D Belle MD, Phillip Stokes MD, Mohamed Keheila MD, Akin S. Amasyali MD, Mohammad Hajiha MD, Stephanie Jensen MD, D. Duane Baldwin MD
Loma Linda University, Loma Linda, CA, USA

Abstract

Introduction and Objective: In patients with infected, obstructed stones, initial antibiotic coverage is empiric while awaiting pre-operative urine cultures. Voided urine cultures may not always correlate with renal urine cultures obtained at the time of surgical decompression, or final blood cultures. Prompt administration of appropriate culture directed antibiotics may significantly improve patient outcomes. The purpose of this study is to compare preoperative urine cultures (UCx), intraoperative renal urine cultures (RCx), and final blood cultures (BCx) in patients with obstructing, infected ureteral stones.

Methods: A retrospective review of 100 consecutive patients presenting to a single academic institution with obstructing, infected ureteral stones over a four year period was performed. All patients underwent retrograde ureteral stenting and renal cultures were obtained with a ureteral catheter. Data regarding patient demographics, preoperative UCx, intraoperatively collected RCx and final BCx were correlated with patient outcomes. Mann-Whitney U test and Spearman's rank correlation coefficient were performed, with $p < 0.05$ considered significant.

Results: Of these 100 patients, 47 had UCx, RCx, and final BCx available. The mean patient age was 51.3 years (16-88) and mean BMI was 30.6 (15.0-65.6). RCx correlated with preoperative UCx in 69.2% of cases. BCx correlated with preoperative UCx in 63.6% of cases. RCx and BCx correlated in 76% of cases. Patients had a significantly longer hospital stay when their preoperative UCx was discordant with RCx (7.3 vs. 4.6 days; $p < 0.05$) or BCx (9.3 vs 4.6 days; $p < 0.05$). Finally, patients with positive RCx had a significantly longer hospital stay than patients with negative RCx (6.6 vs 3.5 days; $p < 0.05$).

Conclusions: RCx differed from preoperative UCx in 30.8% of patients. Patients fared significantly worse when their RCx or BCx differed from their initial UCx. Positive RCx correlated with BCx and predicted significantly longer hospital stays. This indicates that a positive intrarenal culture could be used as a prognostic tool, suggesting higher grade obstruction and poor antibiotic penetration. This highlights the importance of obtaining intraoperative renal urine cultures in patients with obstructing, infected ureteral stones to potentially improve patient outcomes.

If funding provided, type in source company / entity name(s):

None

203 Feasibility of Performing X-ray Free Percutaneous Nephrolithotomy for Staghorn Stones

Andrew Muse BA¹, Meleighe Sloss BA¹, Sai Shah BA¹, Charles A. Jauregui BA¹, Ava C. Wong MPH², David T. Tzou MD²

¹University of Arizona College of Medicine, Tucson, AZ, USA. ²University of Arizona Department of Urology, Tucson, AZ, USA

Abstract

Objective

Complete and partial staghorn calculi present inherent challenges to urologists performing percutaneous nephrolithotomy (PCNL) and traditionally have been performed using fluoroscopy (FL-PCNL). Ultrasound guided PCNL (US-PCNL) has emerged as an attractive alternative and studies have reported similar stone free rates compared with FL-PCNL. To date, stone free rates for staghorn calculi treating with only US-PCNL have been sparsely reported. The aim of this study is to share the outcomes of patients with staghorn calculi treated with X-ray free US-PCNL.

Methods

From Jan 2019 - Nov 2020, clinical data was prospectively collected for stone patients enrolled into the Registry for Stones of the Kidney and Ureter (ReSKU) at the University of Arizona. Guy's Stone Score (GSS) was used to determine stone complexity, with staghorn stones rated either GSS 3 or 4. Patients were included if they underwent X-ray free US-PCNL and had both pre- & post-operative computed tomography (CT) imaging. Stone size was based on the largest linear dimension measured on CT. Post-operative CT was used to determine stone free rate, and this was reported using definitions of both no residual stone present and non-significant residual fragments (NSRF) of < 4mm. Percent reduction in stone burden was calculated by comparing the aggregate residual stone to the original aggregate stone size. Complications were reported using Clavien-Dindo (CD) classifications.

Results

Fourteen X-ray free US-PCNLs were performed in 13 patients, with a GSS of 3 (n=7) and 4 (n=7). Mean preoperative stone burden was 45 ± 20 mm (range 21-90mm). Mean operative time was 122 ± 39 minutes. Three cases had CD complications, all of which were Grade 2 or below. Using the definition of no stone present, only 2/14 (14%) were considered stone free. When using the definition of NSRF <4mm, stone free rate was 10/14 (71%). Amongst those with residual stone remaining, the mean percent reduction in stone burden was 80%.

Conclusions

X-ray free US-PCNL can be successfully performed in patients with staghorn calculi, resulting in minor complications, large reductions in stone burden and even complete removal of all stone. Definitions of stone-free matter with respect to determining whether PCNL is considered successful.

If funding provided, type in source company / entity name(s):

University of Arizona Health Sciences Career Development Award (UAHS-CDA)

141 Program-estimated Stone Volume is Best Predictor of Spontaneous Passage for Acute Nephrolithiasis

Tommy T Chiou BS¹, Margaret F Meagher MD¹, Andrea Ferrero PhD², Roger L Sur MD¹, Seth K Bechis MD¹
¹UC San Diego School of Medicine, La Jolla, CA, USA. ²Mayo Clinic, Pheonix, AZ, USA

Abstract

Objective

In patients presenting with acute nephrolithiasis, stone burden is an important predictor of spontaneous passage (SP). We assessed whether program-estimated stone volume (SV) produced better SP predictions compared to program-estimated maximal diameter (PD) and manually-measured maximal diameter (MD).

Methods

Retrospective analysis of patients presenting to UC San Diego Health ED with acute nephrolithiasis and single kidney/ureteral stone on CT (7/2017-4/2020). MD from radiology reports or manually measured when report not available. Quantitative Stone Analysis Software (qSAS) used to estimate SV and PD. ROC analysis to compare accuracy of SP prediction by 4 and 6 weeks. Subgroup analysis for stones with MD \geq 6mm.

Results

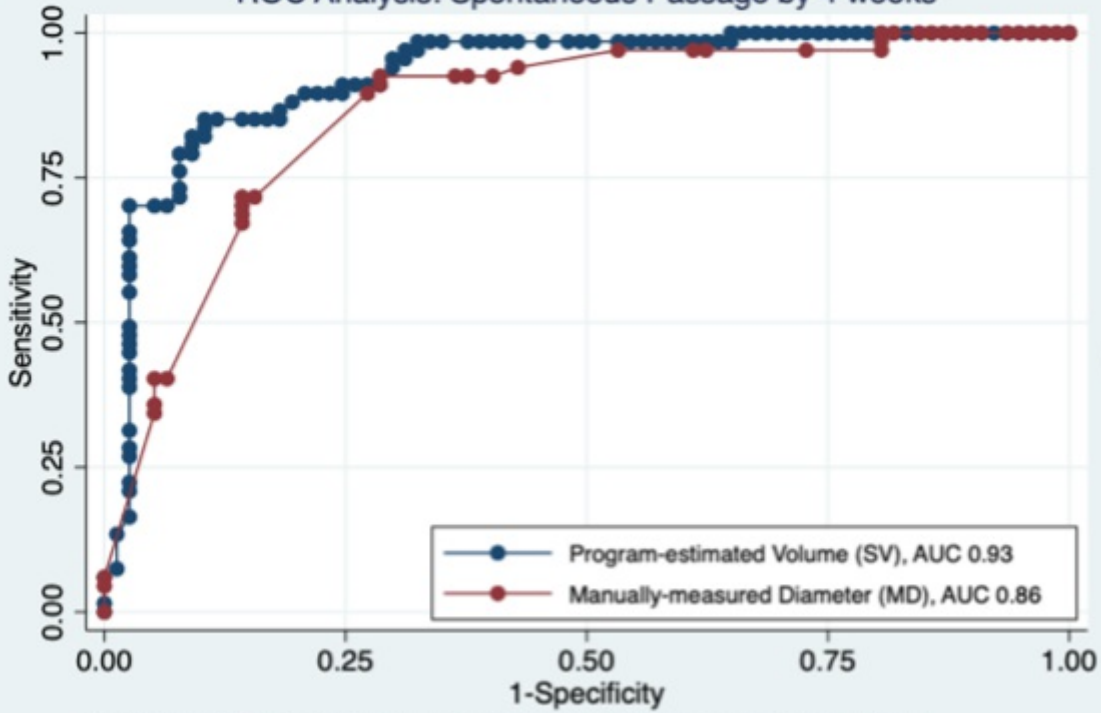
Of the 172 patients analyzed, SP occurred in 71 (41%). Patient age (mean 53), sex (38%F), and stone history/side did not differ significantly by SP. Average MD, PD, and SV were smaller among SP stones vs stones requiring surgery (MD 4.3mm vs 8.0mm, PD 5.5mm vs 9.4mm, SV 40mm³ vs 312mm³; all p<0.001). For SP prediction by 4 and 6 weeks, ROC analysis showed higher AUC for SV compared to MD (AUC 0.93 vs 0.86, p=0.01 4 weeks and 0.92 vs 0.85, p=0.02 6 weeks, Fig1A) and PD (AUC 0.85 4 weeks and 0.86 6 weeks, p<0.001). For larger stones \geq 6mm, SV yielded even better SP predictions than MD, and SP stones had much lower SV vs non-SP (Fig1B-C).

Conclusion

For patients presenting with acute nephrolithiasis, SV predicted SP by 4 and 6 weeks with greater accuracy than MD or PD. Utilization of SV may improve patient counseling by facilitating better SP expectations.

1A

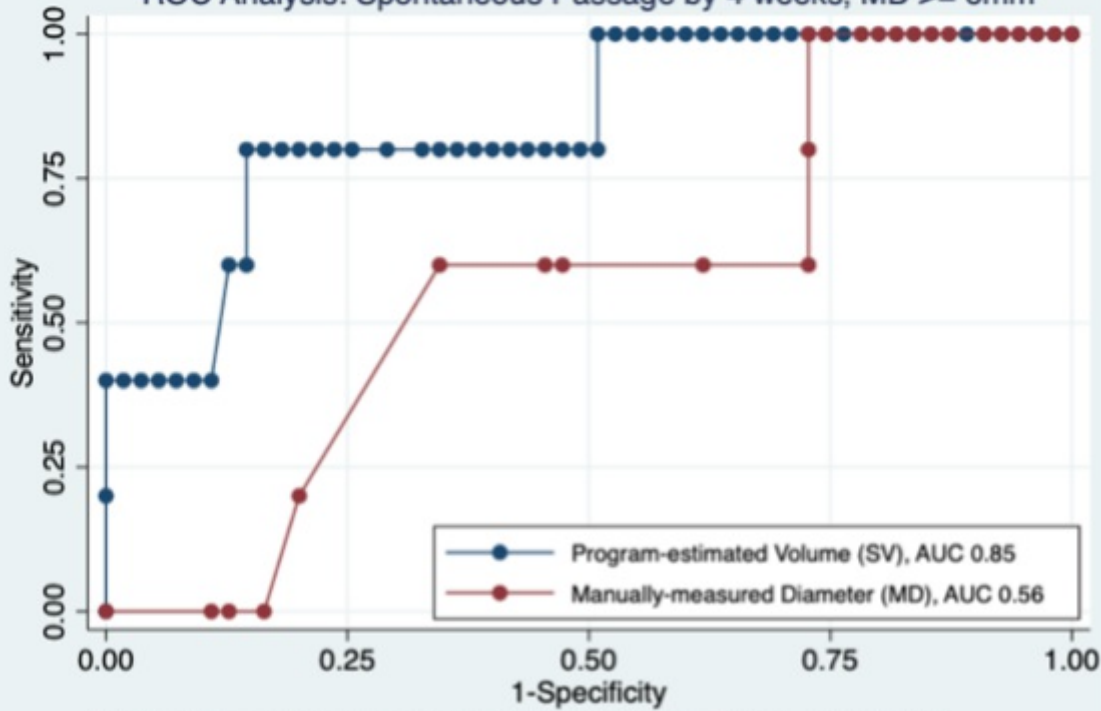
ROC Analysis: Spontaneous Passage by 4 weeks



AUC for SV was significantly higher vs AUC for MD (AUC difference 0.07, P=0.01)

1B

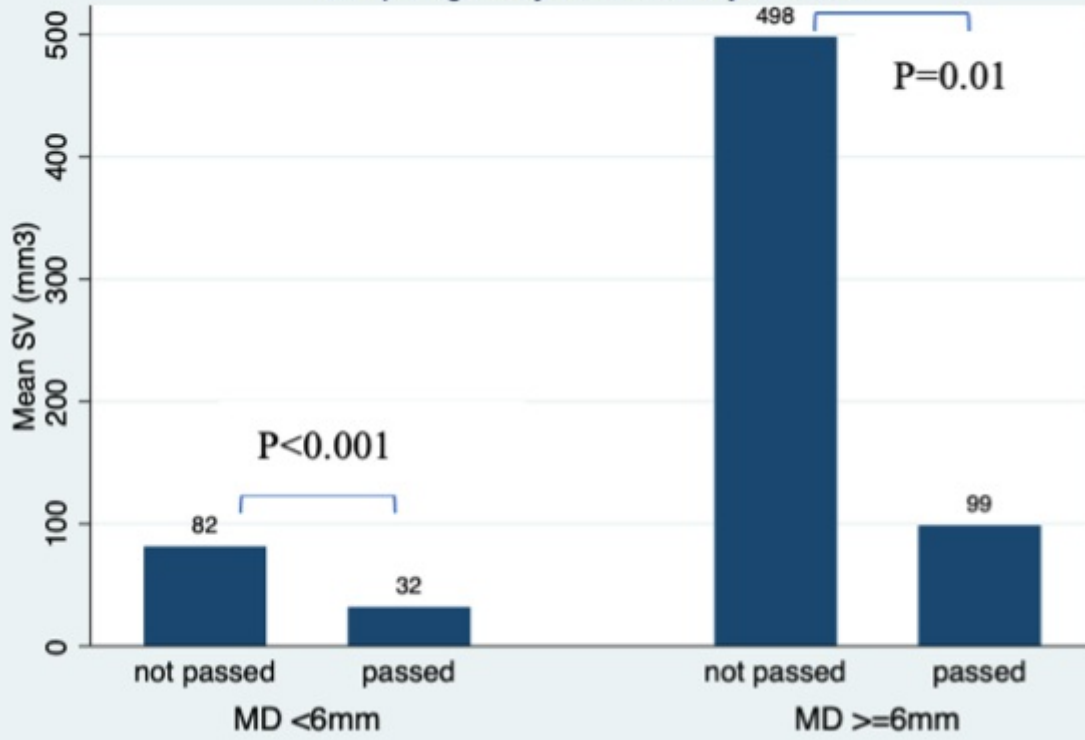
ROC Analysis: Spontaneous Passage by 4 weeks, MD >= 6mm



AUC for SV was significantly higher vs AUC for MD (AUC difference = 0.29, P=0.02)

1C

Comparing SV by MD and SP by 4 Weeks



100 Kidney Stone Endotoxin Concentration Correlates with Post-Operative Sepsis Following Percutaneous Nephrolithotomy

David T. Tzou MD¹, Farhan Anwar PhD², Michael Badowski PhD³, David T. Harris PhD⁴, Thomas Chi MD⁵, Gayatri Vedantam PhD²

¹University of Arizona Department of Urology, Tucson, AZ, USA. ²University of Arizona School of Animal and Comparative Biomedical Sciences, Tucson, AZ, USA. ³University of Arizona Health Sciences Biorepository, Tucson, AZ, USA. ⁴University of Arizona Department of Immunobiology, Tucson, AZ, USA. ⁵University of California San Francisco Department of Urology, San Francisco, CA, USA

Abstract

Objective

Patients with infected kidney stones are at risk for post-operative sepsis following surgical removal of their calculi. Of all the surgical approaches, percutaneous nephrolithotomy (PCNL) remains associated with the highest risk for experiencing post-operative SIRS (severe inflammatory response syndrome). Accurate prediction of patients at risk for SIRS after surgery would be of clinical value. While previous studies have demonstrated infected kidney stones contain variable levels of endotoxin concentrations, these were limited in their rigor and ability to correlate stone immunobiology with important clinical outcomes. The aim of this study was to quantitate endotoxin levels amongst PCNL patients who experienced and did not experience SIRS.

Methods

Between October 2020 and June 2021, urine & stone specimens from consecutive stone patients were prospectively collected as part of the Registry for Stones of the Kidneys and Ureter (ReSKU) at the University of Arizona. Clinical data including stone analyses and post-operative outcomes have been tracked. Equal weights of stones were uniformly broken using an easy-to-replicate 'beat-beating' homogenization approach, allowing for consistent measurement of stone endotoxin using a Pierce™ LAL Chromogenic Endotoxin Quantification Kit (ThermoFisher Scientific, Waltham, MA). Endotoxin levels from stones removed during PCNL were compared between patients who experienced and did not experience SIRS. Independent T-test was used to determine statistical significance.

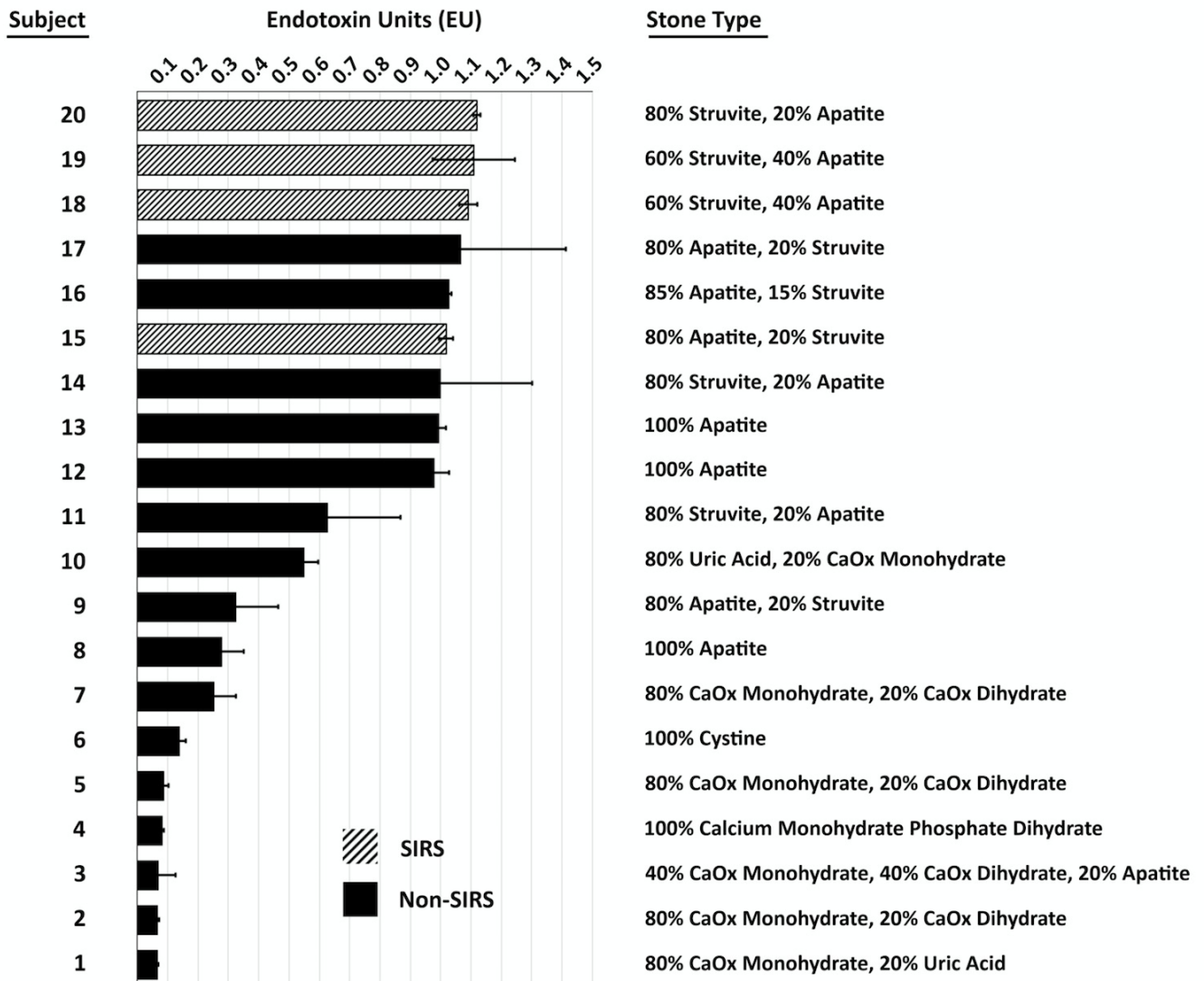
Results

Endotoxin levels amongst 4 patients with infection calculi who experienced SIRS were compared to 16 patients who did not experience SIRS – 8 of whom had infection calculi and 8 with non-infection calculi (Figure 1). In the SIRS group, the mean Endotoxin concentration was 1.084 endotoxin units (EU)/ml compared to 0.476 EU/ml in the non-SIRS group ($p < 0.01$).

Conclusions

Higher kidney stone bacterial endotoxin concentrations are present in patients who experienced SIRS after percutaneous stone removal compared to those who did not. Whether exceeding a threshold endotoxin level corresponds to patients experiencing SIRS warrants further study.

Figure 1: Endotoxin, SIRS, and Composition of PCNL-extracted Stones



If funding provided, type in source company / entity name(s):

University of Michigan/NIDDK - P30 DK081943; University of Arizona Health Sciences Career Development Award (UAHS-CDA)

38 Evaluation of the efficacy of sexual intercourse in expulsion of lower ureteric stones

Kamran Hassan Bhatti MS

CITY HOSPITAL, PAKPATTAN, PAKPATTAN, Pakistan

Abstract

Ureteral stone constitutes about 22% of all urinary stones, 68% of which present in the distal ureter with the renal colic is the common presentation.

MET is recommended as the first-line treatment in lower ureteral stones that do not necessitate surgery. If the patient has a sexual partner, having sexual intercourse at least 3 times a week may be beneficial to increase the probability of spontaneous stone expulsion in patients with distal ureteral stones ≤ 6 mm.

Objective: To evaluate the efficacy of sexual intercourse in expulsion of lower ureteric stones.

Patients and methods: The study included 88 patients with lower ureteric or intramural stone. The stones size ranged from 4 to 7 mm and were detected by US, plain X-ray film, and non-enhanced CT KUB. The patients were divided randomly into group A included 44 patients who were advised to do sexual intercourse 2-3 times/week with administration of symptomatic treatment, and group B included 44 patients receiving symptomatic treatment only (control group) and were instructed not to do sexual intercourse or masturbation during the study. Follow-up (4 weeks) was done by US, and urine analysis every week and by asking the patients about stone passage, time of expulsion, number of colicky attacks, and analgesic injections.

Results: Group A patients mean age was 30.5 ± 6.8 years and group B 35.5 ± 10.6 years. Stone expulsion rate, in the first 2 weeks for group A, was 68.18 % (30/44), while in group B 53% (23/44). At the fourth week, expulsion rate for group A reached to 80 %, but in group B 68.4%. The mean expulsion time was shorter in group A (13.9 ± 5.4 days) than group B (15.2 ± 6.7 days). The number of colicky attacks and analgesics for group A was less than group B.

Conclusions: Sexual intercourse for 2-3 times/week for married male patients with lower ureteric stone (4 -7 mm) increases the expulsion rate and decreases the frequency of renal colic and the needs for analgesic. The patients that did not pass their stones within 4 weeks of follow-up were subjected to ureteroscopy treatment .

Keywords: Expulsion; Ureteric stone. Sexual intercourse,