

Impact of Circumcision Status on Incidence of Anatomic Anomalies and Bacterial Species: A Retrospective Review of Pediatric Male UTIs Presenting to the Emergency Department

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Introduction

- Febrile UTI is primary trigger for imaging workup
- There is currently a debate on timing for VCUG
- We sought to identify clinical indicators of which patients would benefit from additional imaging
- Our prior study identified gram-positive UTIs as a potential risk factor for high grade hydronephrosis and reflux

Objectives and Methods

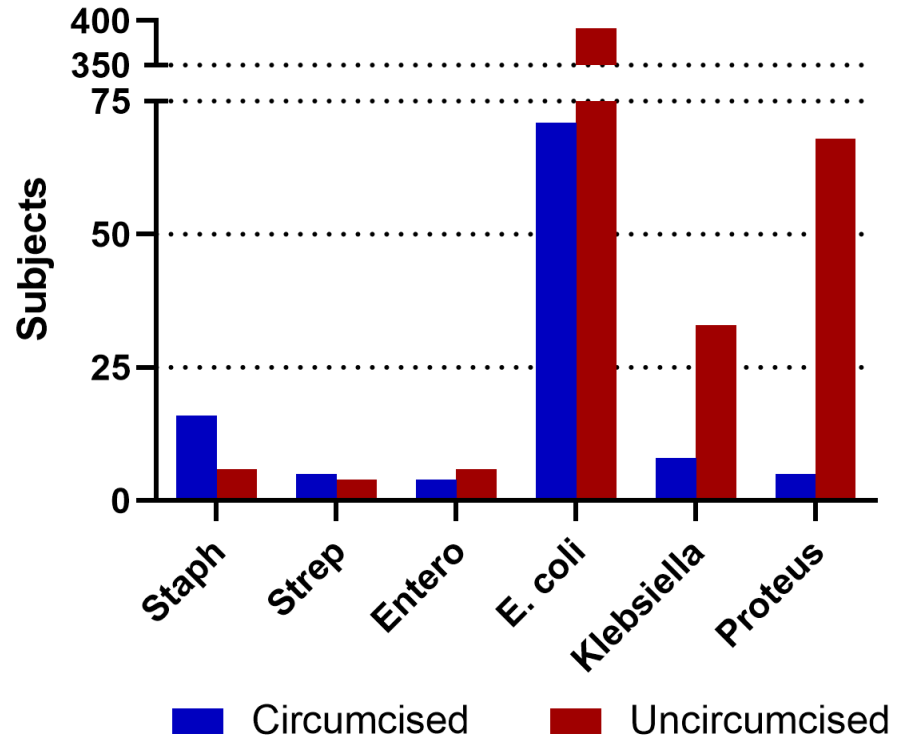
- **Is circumcision status and bacterial agent associated with anatomic anomalies in pediatric male UTIs?**

Objectives and Methods

- Retrospective review urine cultures 2006-2015
- Inclusion criteria:
 - <18 yo males
 - >50k CFU of *Staphylococcus*, *Streptococcus*, *Enterococcus*, *Proteus*, *E. coli* or *Klebsiella*
 - clean catch or catheterized specimens
- Charts reviewed for circumcision status, ultrasound and VCUG findings

Organism	n (%)	N=814
<i>Staphylococcus</i>	30 (3.7%)	
<i>Streptococcus</i>	12 (1.5%)	
<i>Enterococcus</i>	13 (1.6%)	
<i>Proteus</i>	84 (10.3%)	
<i>E. coli</i>	620 (76.2%)	
<i>Klebsiella</i>	55 (6.8%)	

- 814 patients met inclusion criteria
- Median age 6 mo (2.4- 37 mo)



Results: multivariate analysis of Circumcision Status

	Prevalence ratio (95% CI)	P value
Ultrasound (n=456) High grade hydronephrosis	3.6 (1.2-10.4)	0.018
VCUG (n=327) High grade VUR	3.9 (1.7-8.9)	0.001

High grade= SFU 3-4 hydronephrosis or VUR grade 3-5, adjusted for age, race, ethnicity and circumcision status

Results: multivariate analysis of Staphylococcal UTIs

	Prevalence ratio (95% CI)	P value
Ultrasound (n=456) High grade hydronephrosis	6.3 (1.3, 30.5)	0.023
VCUG (n=327) High grade VUR	7.5 (1.0, 54)	0.046

High grade= SFU 3-4 hydronephrosis or VUR grade 3-5, adjusted for age, race, ethnicity and circumcision status

Results: Predictive Modeling

- Predictors of high grade hydronephrosis or high grade VUR
 - Circumcised status
 - Gram positive organism
 - Race
 - Caucasian > Other > Asian > African American

Conclusions

- **Circumcised status and/or Staphylococcal UTI associated with abnormal imaging findings in pediatric males**
- **Consider early VCUG in first febrile UTI in circumcised males and/or Staphylococcal UTI**
- **Future directions:**
 - **Validating predictive model in a larger patient population/more patients with cystograms**



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Thank you

