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POD-02.01

A Comparison of Outcomes after Percutaneous Nephrolithotomy in Children and Adults: A Matched Cohort Study

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Introduction and Objectives: Percutaneous nephrolithotomy (PCNL) is an appropriate treatment option for children with large and complex stone burdens or genitourinary tract abnormalities. There is a paucity of data regarding outcomes following PCNL in children compared to adults.

Methods: Data regarding patient characteristics and outcomes for all patients undergoing PCNL at a tertiary care centre were collected prospectively from January 1992 to July 2013. Thirty one pediatric patients undergoing 39 PCNLs were identified. Each pediatric PCNL was matched 4:1 to adults PCNL by year of surgery and stone burden characteristics (staghorn, partial staghorn, number of stones). The primary outcome measure was stone free rate at hospital discharge. Secondary outcomes included need for second look nephroscopy, length of hospital stay (LOS) and stone composition. Student-t tests were used for continuous and fishers exact for categorical variables.

Results: Renal anomalies were found in 25.6% of pediatric patients and 18.6% of adult patients ($p=0.1$). Four (10.3%) pediatric patients and 3 (1.92%) adult patients presented with ureteropelvic junction obstruction ($p=0.03$). Pediatric patients tended to present with metabolic stones (58.1%

vs. 34.9%, $p=0.01$). There was no statistically significant difference in rate of infection stones (29.0% vs. 27.1%, for pediatric vs. adult patients respectively, $p=0.17$). More pediatric patients required a second access tract, compared to adult patients (15.4% vs. 4.52%, $p=0.02$). No difference was found in stone-free rate at time of hospital discharge (86.1% vs. 86.4%, $p=0.2$), the need for second look nephroscopy (20.5% vs. 17.3%, $p=0.16$), or LOS (3.4 vs. 3.9, $p=0.2$).

Conclusions: There is no statistically significant difference in stone-free rate among children compared to adults undergoing PCNL for large and complex stones burdens, affirming its usefulness in this patient population.

POD-02.02

Time to Febrile Urinary Tract Infection (fUTI) in Children with Antenatal Hydronephrosis (AHN): A Prospective Study

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Introduction and Objectives: In our previous study, female gender, uncircumcised boys and those with hydroureteronephrosis (HUN) without VUR seemed to be at a higher risk of developing fUTI. Due to data limitations, a time to event analysis was not possible and the role of continued antibiotic prophylaxis (CAP) and VUR could not be evaluated. We aim to verify the

Table 1. POD-02.02. Univariate analysis of risk factors for fUTI

Risk factor	Patients without UTI (%)	Patients with UTI (%)	Total patients	p value
Gender				
Female	56 (74.7)	19 (25.3)	75	0.007
Male	211 (83.4)	42 (16.6)	253	
Uncircumcised	135 (78.9)	36 (21.1)	171	0.006
Circumcised	76 (92.7)	6 (7.3)	82	
Continuous antibiotic prophylaxis				
No	119 (73.0)	44 (27.0)	163	<0.001
Yes	108 (88.5)	14 (11.5)	122	
ALPHA	40 (93.0)	3 (7.0)	43	
Etiology				
Isolated hydronephrosis	195 (85.5)	33 (14.5)	228	0.005
Hydroureteronephrosis	72 (72.0)	28 (28.0)	100	
AHN grade				
Low (I-II)	117 (88.0)	16 (12.0)	133	0.014
High (III-IV)	150 (76.9)	45 (23.1)	195	
VCUG				
No	105 (95.6)	6 (5.4)	111	<0.001
Yes	162 (74.7)	55 (25.3)	217	
No reflux	126 (80.0)	30 (19.2)	156	0.002
Reflux	36 (59.0)	25 (41.0)	61	

fUTI: febrile urinary tract infection; UTI: urinary tract infection; AHN: antenatal hydronephrosis. VCUG: voiding cystourethrogram.

impact of those factors on fUTI rates in infants with AHN, in a prospective fashion.

Methods: Patients seen at a tertiary children's hospital for AHN from Jun 10-Oct 13 were followed. Those with postnatally detected hydronephrosis (HN), posterior urethral valves, duplication anomalies and neurogenic bladders were excluded. Primary outcome was fUTI. A priori risk factors explored: age, AHN grade [low (I-II) vs. high (III-IV)], etiology (isolated HN vs. HUN), CAP use, VUR grade, gender, and circumcision. Univariate analysis was conducted to identify potential fUTI risk factors. Time to fUTI curves analyzed by Cox proportional regression (hazard ratio [HR]) were generated to adjust for confounders.

Results: Data on 328 patients (77% male) were collected, 61 (19%) had a fUTI. Median [IQR] age at fUTI was 6 [2,11] months, 195 (60%) had high-grade AHN. CAP was prescribed for 122 (37%) patients. Of patients on CAP, 68% had high-grade AHN. Of 217 patients who had a VCUG, 63 (29%) had VUR (44: IV-V, 17:I-III), 2/3 of VUR patients were on CAP. Circumcision was performed in 82 (32%) boys. Table 1 shows univariate analysis. In the Cox regression model, female gender (HR=2.7, p=0.03), uncircumcised males (HR=2.8, p=0.03), VUR (HR=11, p<0.01) and lack of CAP (HR=6.3, p<0.01) remained significantly associated with fUTI. A sensitivity analysis excluding VUR patients showed that HUN was a significant risk factor (HR=3.8, p<0.01). HN grade was not associated with fUTI once all covariates were adjusted.

Conclusions: Females and uncircumcised boys with HUN without VUR had significantly higher fUTI rates and may benefit from CAP use.

POD-02.03

Efficacy of Intravesical OnabotulinumtoxinA in Reducing Perioperative Bowel Complications in Children Undergoing Lower Urine Tract Reconstruction for Neurogenic Bladder

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Introduction: With the advent of oral anticholinergic medications and intravesical onabotulinumtoxinA (BTA) over the past decade, the indications for lower tract reconstruction have diminished. However, there remain a number of patients who require reconstruction for continence and upper tract preservation. However in children requiring operative intervention the use of anticholinergics postoperative can increase the risk of serious complications such as ileus, constipation, and prolonged hospital stay. We have hypothesized that intraoperative intravesical BTA could significantly decrease the potential risk of postoperative bowel complications due to anticholinergic medication.

Methods: From January 2011 to December 2013 all patients at Alberta Children's Hospital undergoing lower tract reconstruction for neurogenic bladder were retrospectively reviewed. 21 patients were identified who either underwent appendicovesicostomy (13), bladder augmentation (2), or either bladder neck procedure (1) or combination thereof (5). These patients were divided into two groups, those who underwent intravesical BTA (10 Units/kg of BTA was administered maximum dose 200 Units) at the time of the reconstruction versus those who did not.

Results: None of the patients who received intraoperative BTA injection (0/13), required postoperative anticholinergic medications for treatment of bladder spasms compared to 5/8 in the control group. (p=0.04). Postoperative ileus was documented in 3/13 in Botulinum Toxin-A group versus 6/8 in the control group (p=0.11), one patient in control group required operative intervention for a bowel obstruction. The mean hospital stay was 5.6 days in BTA group versus 8.1 days in the control group.

Conclusions: Intravesical BTA during lower urinary tract reconstruction in children with neurogenic bladder is an effective strategy to decrease the need for postoperative anticholinergic medication and potentially decrease postoperative ileus and decrease hospital stay.

POD-02.04

A Canadian Perspective on Parental Work Absenteeism Related to Routine Pediatric Urology Clinic Visits

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Introduction and Objectives: Absenteeism represents a huge financial burden to modern societies. In the current era of economic turmoil and concern for the proportion of income spent on health care, it is worrisome to consider that off work days cost the Canadian economy over 16 billion dollars a year. This is likely impacted by the need of caretakers to bring children and adolescents to clinic evaluations. Herein we assess this previously under-evaluated hidden cost in pediatric urology care.

Methods: A total of 1032 family members were surveyed over a 3-month period during routine clinic assessments at a single tertiary care hospital-based outpatient clinic. Each participant provided information regarding the amount of missed work time specifically associated with the visit, as well as distance travelled to the hospital and additional costs incurred to attend the evaluation. Categorical and ordinal data were analyzed and stratified based on the need to take time off work.

Results: The survey had a complete response rate of 91% for degree of absenteeism (n=938 parents). Of these, only 31% reported no work time loss, while 17%, 40% and 3% missed ½ day, one full day or more than one day of work to attend the clinic visit, respectively. Distance travelled to attend the clinic visit was significantly associated with reported time off work (p<0.05). On stratified analyses, there was a statistically significant association between incurred additional expenses and time off work (p<0.05).

Conclusions: Our data shows an important impact of clinic visits on parental work commitments, economic effect that is more striking for families that travel long distances. As we strive to address the issue of value in health care, expenditures that escape traditional cost measures, such as loss of income related to absenteeism, should be considered. Strategies to lower sick days by exploring less demanding healthcare delivery models appear warranted.

POD-02.05

Prevalence of Foreskin Problems in Children Presenting to a Pediatric Urology Practice

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Introduction: Medical guidelines for circumcision have changed throughout history. The AAP recently changed their position in favour of circumcision. The purpose of this study is to determine the prevalence of foreskin complaints and treatments to inform clinicians in light of changing policy.

Methods: We conducted a retrospective chart review of patients under 17 who presented to a pediatric urologist in Edmonton with a foreskin complaint from September 2005 to June 2012. Endpoints for this study included: number of patients, circumcision status, number of visits, number of uncircumcised (Uncirc) and circumcised (Circ) children treated conservatively, and number of children requiring urologic management.

Results: In total, 484 patients presented for a foreskin complaint during a 7-year period. 118 children were Circ and 366 were Uncirc. Circ children had an average of 1.76 visits versus 1.52 visits for Uncirc children. 52.5% of Uncirc children presented with the complaint of tight foreskin and of these, 81.2% had a normal foreskin not requiring intervention while 18.8% required circumcision. Revision circumcision was necessary in 18.6% of Circ children while 81.4% were managed conservatively. Common complaints in the Circ group included adhesions (73.7%) and uneven foreskin (29.7%).

Conclusions: In children presenting with a foreskin complaint approximately 1/3 are Circ and 2/3 are Uncirc. Overall, the data demonstrate that conservative treatment is typically sufficient for foreskin complaints, irrespective of circumcision status. This suggests a need to better educate referring physicians. Finally circumcision does not prevent foreskin problems which should be presented in light of the new guidelines.

POD-02.06

Efficacy of Dextranomer Hyaluronic Acid and Polyacrylamide Hydrogel in Endoscopic Treatment of Vesicoureteral Reflux: A Comparative Study

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Introduction and Objectives: The use of endoscopic treatment has become a popular form of first line therapy for vesicoureteral reflux (VUR). Various bulking agents are currently available but their inconsistent short-term success rates and their cost are concerns for urologists. Recently, a new material for periurethral injection in urinary incontinence, polyacrylamide hydrogel (PAHG), was introduced. It has been shown to have a good overall success rate, which was comparable to dextranomer hyaluronic acid (Dx/HA), the current most popular bulking agent. Our objective was to compare the success of PAGH and Dx/HA in the endoscopic treatment of VUR and their complications.

Methods: In a single centre, we performed a prospective study using PAHG and Dx/HA to treat VUR grades I to IV in pediatric patients. All patients underwent endoscopic subureteral injection of bulking agent,

either PAHG or Dx/HA, followed by a 3-month postoperative renal ultrasound and voiding cystourethrogram. A treatment success would be defined as the absence of de novo or decreasing hydronephrosis and the correction of VUR.

Results: A total of 85 pediatric patients underwent an endoscopic injection: 40 patients and 72 ureters with PAHG and 45 patients and 72 ureters with Dx/HA. Grade I was seen in 7 ureters, II in 21, III in 25 and IV in 19 in the PAGH group. Grade I was seen in 8 ureters, II in 19, III in 33 and IV in 12 in the Dx/HA group. Mean volume injected of PAGH and Dx/HA was 1.1 mL and 0.9 mL respectively. The overall success rate 3 months after a single treatment was 81.2% for Dx/HA and 73.6% for PAHG. Postoperatively, 1 patient in the PAHG group developed a pyelonephritis and 2 patients in the Dx/HA group developed a nephritic colic; one of these was obstructed.

Conclusions: The short-term follow-up demonstrates that Dx/HA exhibits a better overall success for endoscopic treatment of VUR grades I to IV than PAHG. However, more significant complications were noted with Dx/HA.