Conclusion. There was no observed difference in RTI, hospitalization, oxygen supplementation, or ICU admission for RTI between participants receiving or not receiving antibiotic prophylaxis in this cohort. Because of the relatively low number and severity of respiratory infections, and the high proportion that are viral in etiology, it would likely take a very large sample size to determine the impact of antibacterial prophylaxis on respiratory infections during induction therapy for pediatric ALL.

Disclosures. **Joshua Wolf, MBBS, PhD, FRACP**, **Karius Inc.** (Research Grant or Support) **Joshua Wolf, MBBS, PhD, FRACP**, Nothing to disclose

1156. Pneumococcal Colonization in Children with Persistent Asthma and without Asthma

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Session: P-64. Pediatric Bacterial Studies (natural history and therapeutic)

Background. The most common underlying medical condition among children ≥ 5 years of age with invasive pneumococcal disease is asthma. How asthma affects pneumococcal colonization is not fully understood. Our objective was to compare pneumococcal colonization rates in children with persistent asthma vs. without asthma.

Methods. This is a single center retrospective cohort study. We used salvage mid-turbinate samples testing negative for influenza per routine care from 5-18 year-olds with upper respiratory symptoms or febrile illness during 2017-18 and 2018-19 northern hemisphere respiratory seasons (November to April). Analyzed groups were those with persistent asthma or those without asthma. Samples were evaluated for pneumococcal colonization by real-time PCR using CDC *lytA* primers (positive Ct ≤ 35). Positive samples were further tested with multiplex serotype-specific PCR assays to determine pneumococcal serotype.

Results. Of 363 children (120 with persistent asthma and 243 without asthma), 87.6% were 5-10 years old; and 49.9% were male. Fifty percent of samples were from January-February. Pneumococcal colonization rate was lower in children with persistent asthma (10%) vs. without asthma (18.9%) (p=0.03). The odds of colonization were lower in children with persistent asthma (OR 0.4 [95%CI 0.2-0.9]) after adjusting for age, sex, clinic site, smoking exposure, and number of pneumococcal vaccine doses. Colonized patients without asthma were younger than the other groups (Table 1). Pneumococcal serotype/serogroup was assigned in 45 (77.6%) positive samples; 16 (36%) samples corresponded to PCV13 serotypes and 29 (64%) samples to non-PCV13 serotypes. The most common serotypes were: 19F (n=7), 3 (n=6), 6C/6D (n=5), 23B (n=4), 33F/33A/37 (n=4), 35B (n=3), 22F/22A (n=3), 23A (n=3).

Table 1

	Asthma Patients			Non-Asthmatic Patients		
	positive qPCR (N=12)	negative qPCR (N=108)	p-value	positive qPCR (N=46)	negative qPCR (N=197)	p-value
Age (years), mean (95% CI)	7.58 [5.78, 9.39]	7.68 [7.16, 8.20]	0.9103	6.83 [6.11, 7.73]	8.12 [7.73, 8.52]	0.00206
Age groups, n (%)			0.6637			0.1257
5-10 years	10 (83.33%)	93 (86.92%)		44 (95.65%)	170 (86.29%)	
11-18 years	2 (16.67%)	14 (13.08%)		2 (4.35%)	27 (13.71%)	
Sex, male, n (%)	8 (66.67%)	65 (60.19%)	0.7629	17 (36.96%)	91 (46.19%)	0.323
Month of visit, n (%)			0.1881			0.00107
Nov-Dec	5 (41.67%)	21 (19.44%)		18 (39.13%)	31 (15.74%)	
Jan-Feb	4 (33.33%)	60 (55.56%)		21 (45.65%)	99 (50.25%)	
Mar-Apr	3 (25.00%)	27 (25.00%)		7 (15.22%)	67 (34.01%)	
Type of visit, n (%)			0.999			0.3091
Clinic	1 (8.33%)	12 (11.11%)		1 (2.17%)	8 (4.06%)	
Urgent care	7 (58.33%)	58 (53.70%)		16 (34.78%)	47 (23.86%)	
Emergency room	4 (33.33%)	38 (35.19%)		29 (63.04%)	142 (72.08%)	
Smoking exposure, n (%)			0.6982			0.4745
No smoking	9 (75.0%)	88 (81.5%)		40 (87.0%)	158 (80.2%)	
Smoking	3 (25.0%)	20 (18.5%)		4 (8.7%)	32 (16.2%)	
Unknown	0 (0%)	0 (0%)		2 (4.3%)	7 (3.6%)	
Pneumococcal conjugate vaccine ≥ 3 doses, n (%)	6 (50.00%)	66 (61.11%)	0.5398	10 (21.74%)	35 (17.77%)	0.5311

Conclusion. Patients with persistent asthma had lower rates of pneumococcal colonization than patients without asthma during respiratory season.

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1157. Determining the Clinical Utility of 16S rRNA in the Management of Pediatric Infections

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Session: P-64. Pediatric Bacterial Studies (natural history and therapeutic)

Background. Conventional culture remains the gold standard to facilitate a targeted antimicrobial regimen in the treatment of bacterial infections. However, certain pediatric infections are caused by fastidious organisms and treatment with antibiotics prior to specimen collection may hamper growth of pathogens in routine culture. The use of 16S rRNA in culture negative infections has improved identification of bacterial pathogens in select scenarios. However, the specific impact of 16S rRNA on clinical decision making, especially in pediatric infections, is not well-defined. This study aims to elucidate the utility of 16S rRNA on clinical management of pediatric infections.

Methods. A retrospective analysis was done on different clinical specimens which had 16S rRNA performed from August 2016 – March 2020 in our institution. Detailed chart review was performed to determine how the 16S rRNA result impacted clinical decision making. Clinical utility was defined as change in patient's overall antimicrobial regimen, pathogen confirmation, and treatment duration.

Results. Seventy-four samples from 71 pediatric patients were included in the analysis: 32 (43%) were fluid specimens and 42 (57%) were tissue specimens. Significant clinical utility was identified in 30 (40.5%) of 74 clinical samples ($p < 0.0001$). Of all specimens, pulmonary samples yielded the most clinical utility (n=9, 30%) followed equally by joint fluid (n=6, 20%) and bone (n=6, 20%). There was no significant difference in clinical utility between fluid and tissue specimens ($p= 0.346$). In 64 patients whose antimicrobial spectrum coverage was analyzed, patients with broad spectrum coverage was decreased from 48 to 21 and narrow spectrum coverage increased from 16 to 43 using 16S rRNA result, though not significant ($p= 0.4111$). Of all patients included in the analysis, the median number of antibiotics used before 16S rRNA result, 2, was significantly decreased to 1 ($p < 0.0001$).

Conclusion. 16S rRNA has a significant impact in terms of decreasing number of antibiotics used in treatment of pediatric infections. Pulmonary specimens have the highest clinical utility among all samples. Additional cost benefit analysis needs to be completed to further determine clinical benefit.

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1158. Pediatric Group A Streptococcal Peritonitis: A Single-Center Eleven Patient Case Series

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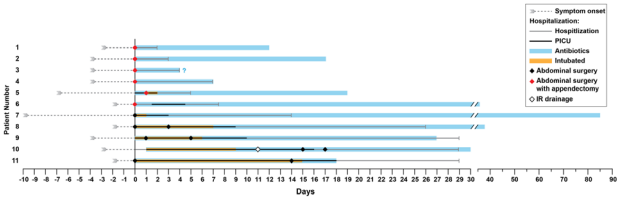
Session: P-64. Pediatric Bacterial Studies (natural history and therapeutic)

Background. Pediatric group A streptococcal peritonitis (GASP) is a rare but serious infection, with few cases reported in the literature. Utah has an unusually high incidence of invasive GAS (iGAS) disease, but the frequency and characteristics of pediatric GASP are unknown.

Methods. We performed a retrospective chart review to identify GASP in Utah children from 2000-2019. GASP was defined as isolation of GAS from peritoneal fluid or blood and clinical signs of peritonitis.

Results. : Eleven children with GASP were identified, with slight female predominance (n=6). Median age was 6 years; males were significantly younger than females (1.4 versus 7.2 years, p=0.01). GAS was isolated from 4 of 8 blood and 8 of 11 peritoneal cultures obtained. Peritoneal fluid PCR was positive for GAS in one patient. Ten patients underwent laparotomy. Peri-appendiceal inflammation prompted appendectomy in 7 patients; only one had pathologic findings of acute appendicitis. Four patients developed streptococcal toxic shock syndrome and 7 required intensive care. Non-white race (n=4) and lack of appendectomy (n=5) were associated with more severe outcomes. Median antibiotic duration was 27 days. Median hospitalization was 8 days. All patients survived.

Figure 1. Schematic representation of GAS peritonitis patient clinical course.



Each patient is represented by a single line. Duration of symptoms prior to hospitalization, as well as duration of hospitalization (day 0 representing admission), intensive care, antibiotic administration, and timing of procedural interventions are noted. Duration of antibiotics after discharge for patient 3 was unable to be verified, as indicated by a question mark. Hospitalization, general pediatric hospital care. PICU, pediatric intensive care unit. IR, interventional radiology.

Conclusion. We present the largest pediatric case series of GASP to date. Diagnostic hallmarks included gastrointestinal symptoms, fever, systemic inflammation, and peritoneal enhancement without an abdominal source. Peri-appendiceal inflammation was common, although acute appendicitis was rare, and appendectomy was associated with a less severe course. GASP should be considered in patients with acute abdominal processes given increasing incidence of iGAS infections.

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