Risk Factors for Community-Associated Clostridium difficile Infection in Children

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2282. Clinical and Radiologic Manifestations of Cat-Scratch Osteomyelitis in Children
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**Background.** Osteomyelitis (OM) is a rare sequel of cat scratch disease (CSD), often with atypical bone involvement. Clinical presentation of CSD OM is not well described. We sought to determine the clinical and radiologic manifestations of CSD OM patients admitted to Nationwide Children’s Hospital.

**Methods.** EMR of OM patients admitted to Nationwide Children’s Hospital between January 1, 2013 to December 31, 2013 was reviewed. Clinical, radiologic, and pathologic findings were collected.

**Results.** Nine patients with positive cat scratch serology and/or tissue PCR were identified. Mean age was 6 years and 8 months (range 3–12 years). Patients had a prolonged course of illness before the diagnosis was made (mean 9.7 days). All patients had fever and affected bone area pain. Patients normal WBC (mean 11.800/mm3) and modest ESR (mean 53.2 mm/hours) and CRP (mean 5.2 mg/dl) elevations on admission. Six patients had osteomyelitis at ≥ 2 sites (multifocal) with no contiguous lymphadenopathy (LAD). The vertebrae and pelvic girdle were the most common sites. Two patients had contiguous paraspinal abscesses, and 1 patient had a concomitant lymph node (LN) abscess. No osteolytic lesions were identified. Serology in all (9 of 9 IgG, 7 of 9 IgM) and PCR of bone in 2 of 2 patients were positive. All patients received antimicrobial therapy with median duration of 28 days (IQR 15–50).

**Conclusion.** CSD OM has an indolent course of illness with moderate elevation of inflammatory markers. Unlike previous reports of CSD and other bacterial OM, multifocal osteomyelitis without contiguous LN involvement was common. Despite significant variations in treatment duration and antimicrobial therapy choices, all patients had clinical resolution of their CSD-associated disease.

**Disclosures.** All authors: No reported disclosures.

2283. Epidemiological Profile of Children Infected with Bordetella pertussis at Varela Santiago Children’s Hospital: a Retrospective Study
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**Session:** 250. Pediatric Bacterial Infections: From A to Z
**Saturday, October 7, 2017: 12:30 PM**

**Background.** Pertussis, also called whooping cough, is an acute infectious disease of high transmissibility transmitted through aerosol particles released during the coughing and paroxysmal stage. Since the 1990s, its incidence has increased and atypical clinical forms have been identified, mainly in newborns and adults. We hypothesized that there is a relationship between the high incidence of pertussis infection in children up to 6 months of age and genetic changes in the circulating strains of B. pertussis, leading to inefficacy of diphtheria, tetanus, and pertussis vaccines (DTP).

**Methods.** Data were obtained from the medical records of hospitalized patients at the Varela Santiago Children’s Hospital in Brazil from January 1, 2013 to December 31, 2013.

**Results.** A total of 33 cases of pertussis hospitalizations were found, where 75.7% (25/33) of the patients were 6 months of age or younger (6 patients were 30 days old or younger while 19 ranged in age from 31 days to 6 months). Of these, 54.5% (14/25) were in exclusive breastfed children. Only 18.2% (6/33) of the patients had the appropriate administration of DTP doses according to their age. Signs and symptoms were: cough 100%, cyanosis 63.6%, fever 48.5% and inspiratory whoop 33.3%. Azithromycin was used as monotherapy in 90% (30/33) of the cases and the mean time of hospitalization was 9.48 days ranging from 6 to 30 days. No patient died.

**Conclusion.** We identified a high prevalence (75.7%) of B. pertussis infection in children up to 6 months of age. This is likely explained by the low vaccination rate (18.2%) and the low percentage of exclusive breastfeeding of the studied population. The low rate of vaccination is unexpected, given that there has been greater access to vaccination in recent decades in Brazil. In addition, the cases evolved with atypical clinical presentation, since the classic symptoms of the catarrhal stage were absent or had a such short duration that such symptoms were no longer present at the time of hospitalization. Our study does not exclude the possibility that genetic changes are occurring in the circulating strains of B. pertussis and that DTP seems to have less efficacy on these new strains, but future studies will be needed to specifically test this hypothesis.

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2285. The Impact of Routine Chlamydia trachomatis (CT) Screening during Pregnancy on the Incidence of Perinatal Infection in Cl. difficile
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**Session:** 2286. Risk Factors for Community-Associated Clostridium difficile Infection in Adults
**Saturday, October 7, 2017: 12:30 PM**

**Background.** CT remains the most prevalent STI in developed and developing countries. Prenatal screening and treatment of pregnant women has resulted in a dramatic decrease of perinatal CT infection. There have been limited seroepidemiologic studies in unselected children and adolescents following the implementation of routine CT screening as first recommended by the CDC in 1993.

**Methods.** Anonymous banked sera (−80°C) and prospectively collected sera for children and adolescents in Brooklyn, NY, were tested for anti-CT IgG via a validated enzyme immunoassay. Serum samples were divided by collection years: Group 1 (1991–1995, prescreening) and Group 2 (2012–2015, post-screening). Infants <1 year of age were excluded due to interference of maternal antibody. Maternal screening and CT infection rates during pregnancy were determined via a retrospective review of 200 random charts (2016–2017). Statistical analysis by Fisher’s exact test.

**Results.** 297 serum samples were identified (age range 1–20 years). 18.5% (10/54) of subjects ≤10 years of age in Group 1 tested positive for anti-CT IgG, while none tested positive in Group 2 (0/55), P = .0006. Children >10 years had a prevalence of 10.3% (3/29) in Group 1 and 7.5% (12/159) in Group 2. Prevalence of CT infection was estimated at 95.5%, with 100% screened if <25 years of age. The rate of maternal screening for CT infection during pregnancy was 4.5% (9/200) overall, 8% (4/49) in <25 year olds and 3.3% (5/151) in ≥25 year olds.

**Conclusion.** Children ≤10 years of age in the prescreening group (1991–1995) had relatively high rates of seropositivity, likely due to persistence of antibody from perinatal infection. The absence of CT symptoms in children ≤10 years of age in the post-screening group (2012–2015) and the high rate of prenatal screening (>95%) in this high-risk population suggest prenatal screening and treatment of pregnant women has been effective at preventing perinatal CT infection.

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other/unknown" children. Though not statistically significant, there appeared to be
a risk factor for rCDI. The 507 were primary, 43 recurrence and 8 recurrence following recurrence. The
identified causes of diarrhea, and community associated disease were defined as cases.
Clinical symptoms consistent with CDI, confirmatory laboratory testing, no other medical condition were statistically significant risk factors for rCDI.

Results. Of 138 children, 43.5% were female; 69.6% were 12–23 months old. A significantly higher proportion of cases than controls had: an underlying chronic medical condition (33.3% vs 11.9%; \( P = 0.02 \)); a neonatal intensive care unit (NICU) stay at time of birth (26.9% vs 13.2%; \( P = 0.04 \)); or recent antibiotic exposure (55.6% vs 20.6%; \( P = 0.001 \)). More cases than controls had recent higher-risk outpatient healthcare exposures (emergency department, outpatient procedure and surgical centers, hospital-based outpatient settings, or urgent care) (34.9% vs 19.1%; \( P = 0.06 \)) or a household member with diarrhea (56.2% vs 20.6%; \( P = 0.05 \)). No difference was found in the proportion of cases and controls who had a feeding tube (2.9% vs 0%; \( P = 0.50 \)) or a recent exposure to gastric acid suppressants (6.1% vs 2.9%; \( P = 0.63 \)).

Conclusion. Young children with underlying disease, NICU stay, or recent antibiotic use might be at higher risk for CA-CDI. Improving outpatient antibiotic use, particularly among children with comorbidities, might reduce CA-CDI in this population. Further investigation of other risk factors, including outpatient healthcare and household exposures, is needed.

Disclosures. All authors: No reported disclosures.

2288. Clostridium difficile Molecular Epidemiology in a Prospective Cohort of Canadian Children Compared with Cases of C. difficile Infection

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Session: 250. Pediatric Bacterial Infections: From A to Z
Saturday, October 7, 2017: 12:30 PM

Background. Clostridium difficile is a notorious nosocomial pathogen, but little is known regarding the colonization commonly observed in children. It is suspected that C. difficile carriage in infants is a reservoir for toxigenic strains. To test this hypothesis, we sought to determine the genetic relatedness between a prospective cohort of C. difficile toxin positive healthy children and those with acute gastroenteritis (AGE) and strains identified in adult and pediatric C. difficile infection (CDI) cases from Alberta, Canada. Additionally, we compared C. difficile toxin production in healthy and AGE children.

Methods. C. difficile was cultured from 97 hospitalized CDI cases (n = 79 adult; n = 18 pediatric) from stool samples tested positive for toxigenic C. difficile by C.DIFF QUIK CHEK COMPLETE® enzyme immunoassay (EIA) in 2015 and samples tested positive for toxin genes by the Linuksen XTAG® Gastrointestinal Pathogen Panel from a prospective cohort of 59 children with AGE seeking care at the emergency department and 17 healthy children attending public health clinics. Isolates were then characterized by PCR-ribotyping, pulsed-field gel electrophoresis (PFGE), PCR of the tcdA, tcdB, tcdC, and cdf genes and C. difficile toxigenicity by EIA for a subset of 14 healthy and 45 AGE children.

Results. Ribotype 016 was predominant among all pediatric isolates (n = 21, 27.6% AGE and healthy children; n = 5, 27.8% pediatric CDI) and ribotype 027 in adult CDI cases (n = 35, 44.3%). Eighteen ribotypes were shared between children and CDI cases (n = 134, 77.5%). Sixteen unique ribotypes and PFGE patterns (n = 84, 48.6%) were identified in two or more cohorts. Similar toxin gene profiles were observed across the three cohorts, but adult CDI isolates had a higher proportion of binary toxin positive isolates (n = 42, 53.2%) compared with children (n = 3, 3.9%) and pediatric CDI (n = 1). C. difficile toxigenicity was similar (P = 0.23) amongst the subset of healthy (n = 6, 42.9%) and AGE (n = 28, 62.2%) children.

Conclusion. Production of C. difficile toxins in children was not significantly associated with symptoms of AGE. C. difficile strains found in children were similar to those from CDI cases; especially pediatric cases. This suggests that strains might be shared, and the development of CDI may be related to factors other than C. difficile strain type.

Disclosures. All authors: No reported disclosures.

Table: Demographics and comorbidities in rCDI

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>N = 507 (%)</th>
<th>N = 43 (%)</th>
<th>p-value</th>
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<tr>
<td>1</td>
<td>131 (25.8)</td>
<td>6 (4.6)</td>
<td>0.09</td>
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<tr>
<td>2–5</td>
<td>131 (25.8)</td>
<td>22 (16.8)</td>
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</tr>
<tr>
<td>6–11</td>
<td>87 (17.2)</td>
<td>6 (9.9)</td>
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<tr>
<td>12–17</td>
<td>158 (31.2)</td>
<td>20 (12.7)</td>
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<tr>
<td>Sex</td>
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<td></td>
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<tr>
<td>Female</td>
<td>247 (48.7)</td>
<td>21 (8.5)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>260 (51.3)</td>
<td>22 (8.5)</td>
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<tr>
<td>Race</td>
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<tr>
<td>Caucasian</td>
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<td>21 (8.6)</td>
<td>0.02</td>
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<td>Hispanic</td>
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<td>8 (6.0)</td>
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<td>African</td>
<td>31 (6.1)</td>
<td>2 (6.5)</td>
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<tr>
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<tr>
<td>Multi-Racial</td>
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<td>6 (26.1)</td>
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<tr>
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<td>2 (22.2)</td>
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<tr>
<td>No</td>
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<td>22 (6.5)</td>
<td>0.02</td>
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<td>167 (32.9)</td>
<td>21 (12.6)</td>
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<td>Malignancy</td>
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<td>39 (8.2)</td>
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<tr>
<td>No</td>
<td>30 (5.9)</td>
<td>4 (13.3)</td>
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</tr>
</tbody>
</table>

Conclusions: High suspicion for recurrence must be maintained in multi-racial or non-Caucasian, Hispanic, Asian, or African American children and those with underlying IBT for rCDI in children.

Disclosures. All authors: No reported disclosures.