Conclusion: The nasopharyngeal *S. pneumoniae* carriage patterns of subjects with definite viral infection were very similar to those with definite bacterial infection and to those with indeterminate pneumonia. It would therefore appear that assessment and quantification of nasopharyngeal pneumococcal colonization is not useful to discriminate between acute viral and bacterial respiratory disease in children in North America.

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1364. Effect of Cefepime Prophylaxis on Bacterial Bloodstream Infections in Neutropenic Patients with Acute Myelogenous Leukemia

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Session: P-61. Pediatric Bacterial Studies (natural history and therapeutic)

Background. Bacteremia is a major cause of morbidity and mortality among children with acute myelogenous leukemia (AML) and chemotherapy-induced neutropenia. Data evaluating the utility of bacterial prophylaxis in this pediatric population are limited. In April 2014, Children's Health (CH) implemented the use of cefepime bacterial prophylaxis for AML patients undergoing induction and intensification chemotherapy. The objective of this study was to evaluate the impact of this practice on the frequency of documented bacterial bloodstream infections (BSIs).

Methods. This was an observational, retrospective cohort study of patients < 21 years of age with AML admitted at CH from January 2010 through December 2018. The primary outcome was frequency of documented BSIs before (PRE; Jan 2010 to Mar 2014) and after (POST; Apr 2014 to Dec 2018) implementation of routine bacterial prophylaxis. Secondary outcomes included differences in total antibiotic days per neutropenia days and the occurrence of neutropenia-associated *C. difficile* infection between groups.

Results. Of 90 patients with AML who met the cohort inclusion criteria, 38 and 52 were treated during the PRE and POST prophylaxis periods, respectively. The incidence rate of documented BSIs per 1000 neutropenia days decreased from 15.5 to 2.8 after the implementation of routine cefepime prophylaxis (incidence rate ratio 0.18, Poisson regression 95% CI 0.09 to 0.33, $P< 0.001$). Patients were more likely to have febrile neutropenia in the PRE group (OR 11.9, 95% CI 6.6 to 20.8). The POST group had more antibiotic days per total neutropenia days (0.76 PRE vs 0.97 POST, $P< 0.0001$), but the frequency of first-episode *C. difficile* infection was not significantly different between groups (OR 0.36, 95% CI 0.1 to 1.4).

Conclusion. Universal cefepime prophylaxis for children with AML and chemotherapy-induced neutropenia was associated with a significant reduction in the incidence of febrile neutropenia and neutropenia-associated BSIs without increasing the incidence of *C. difficile* infection.

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1365. How Severe Are Rickettsial Infections Among Children

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Session: P-61. Pediatric Bacterial Studies (natural history and therapeutic)

Background. Rickettsial infections (RI) usually mimic benign viral infection due to similarities in clinical symptoms. However, severe forms and complications have been reported with rickettsiosis. Children can be affected as well. We aimed to study the particularities of RI among children.

Methods. We conducted a retrospective study including all patients aged ≤ 18 years hospitalized for RI between 2000 and 2018. The diagnosis was confirmed by serologies (seroconversion).

Results. In total, we encountered 59 children with confirmed RI, among whom 45 were male (76.3%). The mean age was 14 ±3 years. Forty children had a close contact with animals (71.4%). All patients consulted for a febrile maculopapular skin rash, which was associated to headache in 45 cases (76.3%), vomiting in 28 cases (47.4%) and cough in 8 cases (13.5%). Physical examination revealed an eschar in 13 cases (22%) and meningeal syndrome in 11 cases (18.6%). Laboratory investigations showed thrombocytopenia (31 cases; 52.5%) and liver cytolysis (26 cases; 44%). Severe forms of RI were represented by meningitis in 11 cases (18.6%), pneumonia in 2 cases (3.3%) and myocarditis in one case (1.6%). The treatment was based on doxycycline in 42 cases (71.2%), fluoroquinolones in 10 cases (17%) and macrolide in 7 cases (11.8%) for children aged less than 8 years. The mean duration of treatment was 9 ±3 days. The disease evolution was favourable in all cases.

Conclusion. The diagnosis of RI among children should be largely based on high index of suspicion, careful clinical and laboratory results. Prompt diagnosis is crucial in order to start antibiotics and avoid, therefore, fatal untreated forms.

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1366. Microbiology of Acute Hematogenous Osteomyelitis in Hospitalized Children

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Session: P-61. Pediatric Bacterial Studies (natural history and therapeutic)

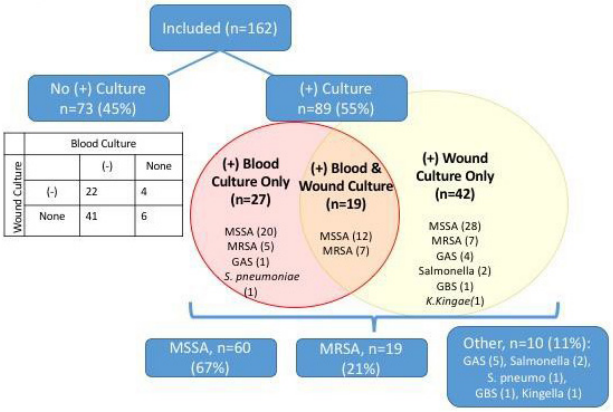
Background. Acute hematogenous osteomyelitis affects 1 in 5,000 children in the U.S. and *Staphylococcus aureus* is the most common bacterial cause. At our institution, clindamycin is used empirically for osteomyelitis, despite increasing clindamycin-resistance over the years. The objective of this study is to describe microbiologic results and antibiotic resistance patterns in children hospitalized with acute hematogenous osteomyelitis.

Methods. This was a single-center retrospective cohort study of patients < 21 years of age with acute osteomyelitis hospitalized between 1/1/2010 and 5/31/2019 at Children's National Hospital. We excluded patients with recent orthopedic surgery, hardware infection, penetrating trauma, or with an underlying immunocompromising condition. We performed chart review to collect data on location of infection; blood, synovial fluid, or surgical site cultures; culture results, and susceptibilities.

Results. Of the 162 encounters of acute osteomyelitis that met inclusion criteria, the average patient age was 8.3 years. Lower extremity infections were most common (105, 64.8%), followed by upper extremity (31, 19.1%), pelvis (14, 8.6%), spine (7, 4.3%), shoulder (4, 2.5%), rib (1, 0.6%) and mandible (1, 0.6%). Almost half of cases (73, 45%) had no positive cultures, and 89 cases (55%) had at least one positive culture from blood or local source (Figure 1). The most common pathogen was methicillin susceptible *S. aureus* (MSSA) followed by methicillin resistant *S. aureus* (MRSA) comprising 60 (67%) and 19 (20%) of culture-positive infections respectively. Other isolated pathogens included *S. pyogenes* (5, 5.6%) Salmonella species (2, 2.2%), *S. pneumoniae* (1, 1.1%), *S. agalactiae* (1, 1.1%), and *Kingella kingae* (1, 1.1%) (Figure 1). Among *S. aureus* infections, 69 (87%) were susceptible to clindamycin (85% among MSSA, 95% among MRSA).

Categorized Blood and Wound Culture Results

Figure 1. Categorized Blood & Wound Culture Results



Conclusion: Almost half of all children with acute hematogenous osteomyelitis did not have any microbiologic data to guide antibiotic usage. *S. aureus* was the most common (87%) isolate, with more MSSA (74%) than MRSA (24%). Non-*S. aureus* isolates were more likely to grow from surgical specimen cultures than from blood cultures. Clindamycin resistance was more commonly seen in MSSA than in MRSA osteomyelitis.

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1367. Reduced Ceftaroline Susceptibility Among Invasive MRSA Isolates at a Tertiary Children's HospitalReduced Ceftaroline Susceptibility Among Invasive MRSA Isolates at a Tertiary Children's Hospital

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Session: P-61. Pediatric Bacterial Studies (natural history and therapeutic)

Background. The emergence of community-acquired methicillin-resistant *Staphylococcus aureus* (MRSA) in the late 1990s-early 2000s complicated the empiric management of suspected staphylococcal infection in children. Rising clindamycin resistance rates in many communities adds further to management challenges. Ceftaroline, an anti-MRSA cephalosporin, represents an attractive therapy option. Little data are available, however, regarding the frequency of reduced susceptibility (RS) to ceftaroline among MRSA isolates from a general pediatric population.

Methods. Isolates were selected from an ongoing *S. aureus* surveillance study at Texas Children's Hospital. Invasive MRSA isolates from 2015-2018 were included. Isolates were initially screened for ceftaroline RS with E-test; all isolates with a ceftaroline E-test MIC ≥ 1.5μg/ml underwent ceftaroline broth dilution. Ceftaroline RS was regarded as an MIC ≥ 2 μg/ml; full ceftaroline resistance was defined as an MIC ≥ 8 μg/ml. Accessory gene regulator (*agr*) groups were characterized by PCR.

Results. 201 viable isolates were included. The ceftaroline MIC_{50} and MIC_{90} were 0.5 and 1 μg/ml, respectively (**Figure 1**). Six isolates had MIC ≥ 2 μg/ml (2.9%) with two having MIC ≥ 8 μg/ml (0.9%). All ceftaroline RS isolates were from healthcare