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Background. This study investigated the genetic structure of *Streptococcus pneumoniae* isolates from invasive pneumococcal disease (IPD) in Korean children after national immunization program (NIP) of extended-valency pneumococcal conjugate vaccines (PCVs) in Korea from 2014 to 2017.

Methods. Invasive isolates were collected from 23 hospitals throughout Korea. IPD cases were identified by isolating pneumococci from normally sterile sites. Each isolate was analyzed using standard microbiological techniques, Quellung reaction, multilocus sequence typing, and antimicrobial susceptibility testing. eBURST v3 software was used to estimate the relationships among the isolates and to assign the strains to a clonal complex (CC).

Results. Ninety-two pneumococcal isolates were analyzed. The source of isolates were blood (77), cerebrospinal fluid (7), pleural fluid (2), joint fluid (2), deep tissue abscess (2), and peritoneal fluid (2). A total of 38 STs and 17 singletons were assigned. Ten clonal complexes were identified: CC320, CC81, CC166, CC439, CC558, CC880, CC3280, CC9395, CC180, and CC310. New STs were assigned: ST13552, ST13553, ST13554, and ST13602. The serotypes were mostly non-vaccine type (NVTs) (82.6%). The most prevalent STs were ST11189 (17.4%, n = 16, all serotype 10A), ST6945 (10.9%, n = 10, all serotype 12F), ST166 (9.8%, n = 9, serotype 11A [22.2%, n = 2], 13 [22.2%, n = 2], 15B/C [22.2%, n = 2], and 23A [33.3%, n = 3]), and ST320 (6.5%, n = 6, all serotype 19A). Major CCs identified were CC166 (11.9%), CC320 (10.9%), and CC81 (10.9%). Serotypes constituting CC81 and CC166 were all NVTs except 6A (n = 1) and 23F (n = 1) in CC81. CC320 consisted of 19A (n = 9) and 19F (n = 1). The relative proportion of NVTs was 61.3% in major CCs. All major three CCs showed multi-drug resistance. Nonsusceptibility to penicillin (80%) and cefotaxime (100%) was the highest in CC320 (serotype 19A [n = 9, 90.0%] and 19F [n = 1, 10.0%]).

Conclusion. The introduction of extended-valency PCVs has resulted in the change of genetic structure of isolates from IPD of Korean children. In particular, two common CCs (CC81 and CC166), which previously contained vaccine types, were replaced with the NVTs, while CC320 remains unchanged.

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

2339. Perianal Infections in Children With Acute Myeloid Leukemia: A Report From the Canadian Infection in Acute Myeloid Leukemia Research Group

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Background. Little is known about the epidemiology of perianal infection in pediatric cancer patients. Objectives were to describe the characteristics, treatment and outcome of perianal infection and describe features of those with and without definite abscess in pediatric patients with acute myeloid leukemia (AML).

Methods. We performed a retrospective analysis of two multi-center cohort studies investigating risk factors for infection in children with AML. We included children with de novo AML ≤18 years of age with a perianal infections prior to the completion of AML treatment or stem cell transplantation

Results. Of 235 patients with AML, 17 (7%) experienced 19 perianal infections. Median age at perianal infection was 8.2 (range 0.6–16.1) years. Local bacterial cultures were positive in 6 (32%) episodes, but none matched bacteremia isolates (n = 5). Enterobacteriacae were the most common pathogen. The 19 episodes were stratified by definite abscess (n = 12) and cellulitis/phlegmon (n = 7). All patients presented with local pain, erythema and induration or swelling. Fever was a frequent finding (n = 17, 89.4%). Among the patients with abscess, 9 (75%) were severely neutropenic at diagnosis and surgical intervention was required in 8 (42%). All patients received antibiotics; Metronidazole (n = 14) and Piperacillin/Tazobactam (n = 10) were the drugs most frequently used for treatment. Imaging was commonly performed (n = 16). Diagnostic yield was similar between computerized tomography of pelvis (5/10) and ultrasound (3/5). Severe complications occurred including fistula (n = 1), skin necrosis (n = 2) and mortality (n = 1).

Conclusion. Perianal infections occurred in 7% of pediatric patients with AML, with many consisting of definite abscess. Diagnostic yield were similar regardless of imaging modality and therefore, ultrasound may be considered for initial evaluation. Future research should develop consistent management approaches to perianal infection in order to improve outcomes.

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

2340. Pneumococcal Colonization in Pediatric Patients Undergoing Bone Marrow Transplantation

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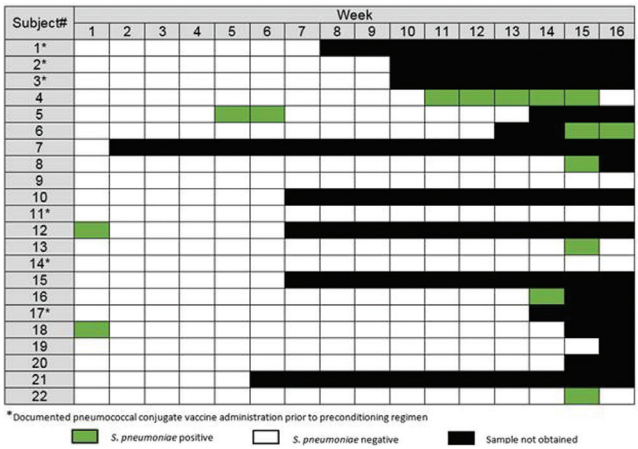
Background. Hematopoietic cell transplant (HCT) recipients are at a significantly greater risk for invasive pneumococcal disease than the general population. However, pneumococcal colonization in pediatric HCT recipients has not been widely studied. We evaluated the dynamics of pneumococcal colonization in pediatric patients undergoing HSCT from conditioning regimen to 100 days post HCT.

Methods. Mid-turbinate samples obtained from pediatric patients undergoing HCT at Children's Mercy from September 2015 to January 2017 were tested for *Streptococcus pneumoniae colonization* via real-time PCR using *lytA* primer (autolysin-A-encoding gene). A cycle threshold value ≤35 was considered positive. First sample was obtained during conditioning regimen (week 1), second sample after HCT (week 2). Then, weekly samples were obtained for the first 100 days after HSCT.

Results. Twenty-two patients were included, representing 266 mid-turbinate samples. The median age at the time of HSCT was 9.5 years (IQR 3–16), and 14 patients were male (63.6%). The indication for HSCT was oncologic (15, 68.2%), hematologic (5, 22.7%) and immune deficiency (2, 9.1%). Fourteen patients (63.6%) underwent allogenic HSCT. Six patients had documentation in our electronic medical record system of receiving ≥ 1 pneumococcal conjugate vaccine prior to conditioning regimen. Nine (40.9%) of 22 patients were colonized with *S. pneumoniae*, their median age was 14 years (IQR 2.5–16). Pneumococcal colonization during conditioning regimen was 9% (2/22). Pneumococcal colonization from week 14 to week 16 was 42% (5/12).

Conclusion. A third of pediatric HCT recipients were colonized with *S. pneumoniae.* Pneumococcal colonization was mainly identified either at the time of conditioning regimen or toward the end of the first 100 days after HCT, with the latter being the most common.



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

2341. Trends in Adenovirus Infections in Singapore Children and Outcomes of Cidofovir Treatment in the Severely Ill

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Background. An increase in human adenovirus (HAdV) infections among hospitalized children in Singapore was observed since 2013. Cidofovir is often used to treat severe HAdV infections despite limited data. This study describes the epidemiology and outcomes of children with severe HAdV disease requiring high dependency (HD) or intensive care unit (ICU) admission in our hospital (KKH).

Methods. This is a retrospective cohort study of HAdV-infected children admitted to HD and ICU in KKH from January 2013 to September 2017. Characteristics and outcomes of those who received IV cidofovir was also reviewed.

Results. HAdV admissions and genotype profiles in KKH are described in Figures 1 and 2, respectively. There were 85 children with severe HAdV infection, of which 17 (20%) received cidofovir for mainly viremia (8, 47.1%) and pneumonia (7, 41.2%). Of these 17 patients, 7 (41.2%) died. More children treated with cidofovir had genotype 7 infection (8 of 17, 47.1%) vs. 13 of 68 (19.1%) who did not ($P = 0.027$). Characteristics of patients who received cidofovir are described in Table 1. None experienced adverse reactions from cidofovir.

Figure 1: Children admitted for HAdV infection in KKH from Jan 2013 to Sep 2017

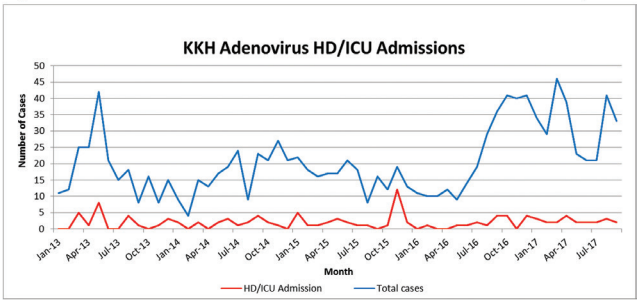

Figure 2: Genotype profiles of HAdV infection in KKH from Jan 2013 to Sep 2017

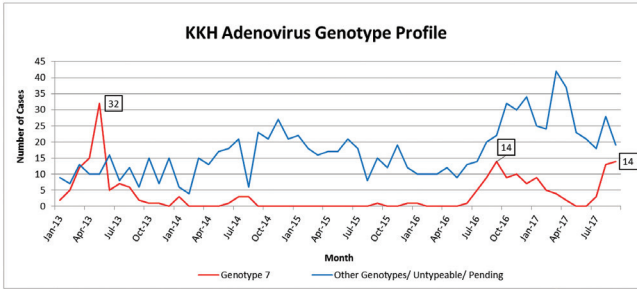

Table 1: Comparison of Characteristics of 17 Children Who Received IV Cidofovir

	Discharged ($N = 10$)	Death ($N = 7$)	P Value
Age in years (median, IQR)	2.6 (1.7–3.7)	2.2 (1.2–5.9)	0.922
Male	5 (50.0)	6 (85.7)	0.304
Significant co-morbidities	5 (50.0)	6 (85.7)	0.304
Prematurity	0 (0.0)	1 (14.3)	0.412
Neurological	1 (10.0)	3 (42.9)	0.250
Cardiopulmonary	0 (0.0)	1 (14.3)	0.412
Immunodeficiency	3 (30.0)	1 (14.3)	0.603
Others	1 (10.0)	0 (0.0)	1.000
Disease presentation			
Pneumonia	1 (10.0)	6 (85.7)	0.004
Gastroenteritis	1 (10.0)	0 (0.0)	1.000
Neutropenic sepsis	0 (0.0)	1 (14.3)	0.412
Viremia	8 (80.0)	0 (0.0)	0.002
Days of symptoms prior admission (median, IQR)	6.5 (2.3–10.8)	4.0 (0.0–5.0)	0.350
Adenovirus genotype 7	4 (40.0)	4 (57.1)	0.637
Required ICU stay	5 (50.0)	7 (100.0)	0.044
Days to cidofovir (median, IQR)	7.0 (1.5–25.8)	12.0 (4.0–40.0)	0.434
Length of stay in days (median, IQR)	21.5 (15.0–63.5)	34.0 (16.0–43.0)	0.696

All are *n* (%) unless stated otherwise.

Conclusion. More children with HAdV genotype 7 infection required cidofovir treatment. HAdV pneumonia and ICU admission are potential risk factors for mortality despite cidofovir treatment.

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

2342. Treatment Implications of Herpes Simplex Virus Central Nervous System Infection in Canadian Infants <90 Days Old: A Pediatric Investigators Collaborative Network on Infections in Canada (PICNIC) Study

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Background. In the pre-acyclovir era, HSV CNS infection was associated with very high morbidity and mortality. Since antiviral drugs recommended for therapy and long-term prophylaxis improve outcomes, clinicians need to be able to clinically detect young infants most likely to have HSV to facilitate early initiation of therapy. Limited data exist on outcomes of infants who require prolonged therapy and those completing prophylaxis. The objective of this study was to identify clinical and laboratory features associated with HSV CNS disease and describe outcomes following antiviral therapy and prophylaxis.

Methods. Infants <90 days old with a discharge diagnosis of meningitis or encephalitis from whom a virus was identified from cerebrospinal fluid (CSF) were included. These were identified using PICNICs retrospective database of microbiologically confirmed CNS infections detected January 2013 to December 2014. Clinical features and outcomes of HSV and non-HSV infection were compared.

Results. Of the 112 cases of viral infections, HSV accounted for 8 (7%) and enterovirus for 103 (92%). Eight (100%) HSV cases and 45 (43%) non-HSV cases presented at <21 days. Four (50%) HSV cases had no pleocytosis. HSV cases were more likely to require ICU admission ($P = 0.016$), present with seizures ($P < 0.001$) and have extra-CNS disease ($P < 0.001$). Among infants <3 weeks of age, seizures were more likely in HSV than non-HSV cases (4 (50%) vs. 4 (8%); $P = 0.013$). All HSV cases received acyclovir for a median of 23 days. Two (25%) remained PCR-positive at 21 days; these were treated for 51 and 42 days, respectively, until PCR negative or death (acyclovir resistance was confirmed postmortem). Four infants received suppressive acyclovir until 6 months, one of whom developed virologically proven CNS recurrence and subsequent infantile spasms. Neurodevelopmental morbidity (4 (57%) vs. 7 (7%)) was more likely in HSV than non-HSV ($P = 0.003$).

Conclusion. High levels of suspicion for viral infections must be maintained for young infants presenting with seizures in the first 3 weeks of life. CSF pleocytosis may often be absent. Resistance testing should be considered if PCR remains positive beyond 21 days. CNS recurrences may still occur beyond the recommended period of prophylaxis.

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

2343. A Multicenter Study on Clinical Outcome of Symptomatic Neonatal Herpes Simplex Virus Infection in Korea

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Background. Neonatal herpes simplex virus (NHSV) infection is rare but can cause a severe disease, even death. However, data on NHSV are limited in Asia. The aim of this study was to estimate the number of NHSV infection and evaluate the characteristics of NHSV infection in Korea where seroprevalence of HSV infection in child-bearing age women is not well known.

Methods. This is the first multicenter retrospective study in 12 university hospitals in Korea. From January 2008 to December 2017, neonates ≤ 28-day old with confirmed HSV infection were identified and a chart review was performed.

Results. Among 12 medical centers, 16 patients were identified in six centers. Eight (50%) patients were male and median age at admission was 11.1 days (range, 0–28 days). Ten (63%) patients were positive for HSV 1 and six (37%) patients were HSV 2 positive. Four (25%) patients were classified as disseminated HSV. Eleven (69%) patients were diagnosed as central nervous system (CNS) disease. One (6%) patient had skin, eye, and/or mouth (SEM) disease. All the patients received intravenous acyclovir and median treatment duration was 19 days (range 3–68 days). Five (35%) patients received additional suppressive therapy and median treatment duration was 131.4 days. Four patients (25%) developed seizure (one in disseminated and three in CNS disease) and two of them recovered without neurologic complications. Two