1516. Early-Onset Neonatal Sepsis Due to Haemophilus influenzae
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Background. Haemophilus influenzae causes serious invasive disease across all ages, but has not been widely described in neonatal early-onset sepsis (EOS). EOS, likely caused by organisms acquired from the mother, can lead to significant morbidity and mortality, particularly for preterm infants. There are reports of increasing ampicillin resistance in H. influenzae. We describe a case series of EOS due to H. influenzae at our institution.

Methods. Neonatal H. influenzae EOS was identified based on positive sterile site cultures at ≤24 hours of life in infants hospitalized at an Intermountain Healthcare (IHC) facility from 2007–2017. Demographics, clinical and microbiologic data were obtained through an IRB-approved electronic chart and microbiology review.

Results. Twelve neonates with H. influenzae EOS were identified over 11 years. Nine were preterm (<37 weeks); five were extremely preterm (<28 weeks). Eight had low birth weight (<2,500 g); five had very low birth weight (<1,500 g). Most (66%) mothers were primigravida; median maternal age was 24.5 years. Only four (33%) mothers had prolonged rupture of membranes (≥24 hours).

All infants had signs and symptoms of sepsis within 24 hours of birth. The majority (10/12) had a blood culture positive for H. influenzae from the time of delivery. Two infants had negative blood cultures but a H. influenzae-positive placental culture. No infant had >1 day of bacteremia. One H. influenzae isolate was serotype b, one serotype c and one non-typeable, but most isolates (9/12) were not serotyped. Only one isolate produced a β-lactamase. All infants were empirically started on ampicillin and gentamicin at delivery. Nine infants underwent lumbar puncture, two were suggestive of meningitis but cultures were negative. Five infants developed intraventricular hemorrhage and six required vasoactive medications. No infant died.

Conclusion. H. influenzae is an infrequent but important cause of neonatal EOS. H. influenzae EOS is more frequent in infants with known risk factors, including prolonged rupture of membranes, prematurity, and low birth weight. Recognition of H. influenzae as a potential pathogen in EOS has implications for the use of empiric antibiotic therapy particularly ampicillin, in septic neonates.

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1517. Multidrug-Resistant Escherichia coli ST131 Late-Onset Neonatal Sepsis in Premature Twins Linked to Contaminated Maternal Frozen Breast Milk
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Background. Sequence type 131 (EC-ST131) is a prevalent cause of extraintestinal E. coli infection, including in neonates, and accounts for a majority of multidrug-resistant strains. Rare reports of neonatal unit outbreaks have emerged, with one linking the source to freshly expressed breast milk (BM).

Methods. Blood culture isolates were from twin girls born at 24–1/7 weeks’ gestation who developed severe sepsis caused by ampicillin- and gentamicin-resistant E. coli on days 11 (Baby A; died) and 8 (Baby B; survived) of life; both had positive delivery blood cultures. Nine infants underwent lumbar puncture, two were suggestive of meningitis but cultures were negative. Five infants developed intraventricular hemorrhage and six required vasoactive medications. No infant died.

Conclusion. Multidrug-resistant E. coli ST131 late-onset neonatal sepsis in premature twins linked to contaminated maternal frozen breast milk. We report two infants with multidrug-resistant E. coli ST131. Multidrug-resistant ST131 Late-Onset Neonatal Sepsis in Premature Twins warrants further study.

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1518. The Microbiology of Osteoarticular Infections in Patients with Sickle Hemoglobinopathies at Texas Children’s Hospital, 2011–2018
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Background. Osteoarticular infections (OAI) are common in patients with major sickle hemoglobinopathies (Hemoglobin [Hgb] SS, Hgb SC, and Hgb Sβ thalassemia). Although Salmonella spp. cause a substantial number of OAI’s in these patients, contemporary data regarding the most common etiology in the era of community-acquired methicillin-resistant Staphylococcus aureus (MRSA) are lacking. This introduces challenges for selecting empiric antimicrobial therapy. We evaluated the microbiology and management of OAI in children with sickle hemoglobinopathies.

Methods. Children with sickle hemoglobinopathies admitted to Texas Children’s Hospital with acute hematogenous OAI from 2011 to 2018 were identified based on ICD10 codes and the consult database of the pediatric infectious diseases service. Culture-negative cases were included if treated for OAI. Medical records were reviewed. Statistical analyses were conducted with STATA ver. 13.

Results. 36 patients met inclusion criteria; 53% were diagnosed with isolated osteomyelitis and 47% with osteomyelitis and septic arthritis. In 42% a microbial etiology was identified (Figure 1) with Salmonella spp. being the most common (n = 7, 47%) followed by S. aureus (n = 5, 33%).11 (31%) patients had subperiosteal or intraosseous abscesses and 26 (72%) underwent diagnostic and/or therapeutic surgical procedures; 36% had positive blood cultures. Children with Salmonella spp. infections had a longer duration of fever (median-5, range: 4–9 days) compared with those caused by other pathogens (median-2, range: 0–6 days; P = 0.04). The median duration of IV therapy was longer in culture-positive than culture-negative cases (30 vs.10 days, P = 0.009); the total duration of therapy was similar for all cases (32 days, IQR: 28–42). No patients were readmitted due to OAI.

Conclusion. At our institution, Salmonella spp. were the most common cause of OAI among children with sickle hemoglobinopathies. Subperiosteal/intraosseous abscess formation and the need for surgical procedures were common. The role of oral antibiotics for the treatment of Salmonella OAI in patients with sickle hemoglobinopathies warrants further study.
1519. Identification of Neisseria meningitidis (Nm) Nasopharyngeal Carriage Among Non-Vaccinated Children and Isolations in Invasive Disease (ID) Cases in Argentina 2017

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Background. Neisseria meningitidis (Nm) cause different types of invasive infections. Nm pharyngeal carriage is a necessary condition for invasive meningococcal disease. In 2017 Argentina introduced a tetravalent meningococcal conjugated vaccine (MenACYW) to the National Immunization Program. Aims To assess the rate of Nm carriage in healthy children and adolescents attending a public hospital in Buenos Aires city, to determine genogroup and clonal complex distribution, to describe genogroup distribution of Nm isolated from ID in Argentina, during the same period.

Methods. Between March and December 2017, a single-center, cross-sectional study was performed among 1,751 children 1–17 years old attending Ricardo Gutierrez Children Hospital in Buenos Aires, Argentina. From oro-pharyngeal swabs, genogroups and clonal complex (CC) were identified. We analyzed Nm ID genogroups data reported to the Regional Surveillance Program (SIREVA II) in the same year. at the same period were relevated.

Results. 114Nm were isolated from the carriage study, with an overall carriage rate of 6.5%. Genogroups distribution: B 25(21.9%), W 9(7.8%), Y 7(6.1%), Z 6(5.2%), C 4(3.5%), non-groupable 9(7.8%) and non-capsulated (NC)54 (47.3%). 105 Clonal complexes detected in our carriage study coincided with those found previously in ID in Argentina. Genogroup W carriage was low and hypervirulent CC ST-11 was the most frequent cause of ID followed by W at our center although the precise reason for this temporal trend is unclear. Multicenter studies are needed to validate these epidemiologic findings.

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