women, and compare this to the prevalence among infants tested for CMV following clinical suspicion of a congenital infection.

Methods. In November 2013, the "Programme québécois de dépistage de la surdité chez les nouveau-nés" (PQDSN), a provincially mandated hearing screening program, was implemented at Centre Hospitalier Universitaire Sainte-Justine, a tertiary maternal-child health center in Montreal, Quebec, along with CMV screening for all infants who failed their hearing test (excluding patients in the neonatal intensive care unit). Concurrently, beginning in April 2013, all infants of HIV-infected women were screened for cCMV infection within 48 hours of birth. The birth prevalence of cCMV infection in these targeted populations was compared with the prevalence among newborns tested for a clinical suspicion of cCMV.

Results. Out of 11 734 newborns screened for hearing through the PQDSN program between April 2014 and March 2018, 536 failed their initial hearing screen and 4 of these newborns tested positive for cCMV infection (0.75%). Out of a total of 130 HIV-exposed newborns born during this period, 116 were screened for cCMV and 3 (2.6%) confirmed positive. An additional 455 newborns were identified by the attending pediatrician as having a risk factor for any congenital infection; of these, 22 (5.3%) tested positive for cCMV. Using these combined methods, a total of 0.24% of newborns enrolled in the PQDSN program tested positive for cCMV infection.

Conclusion. The overall birth prevalence of cCMV was 0.75% among infants who failed their hearing screen, 2.6% among HIV exposed newborns, and 5.3% among infants with a clinical suspicion of a congenital infection. In the absence of a universal screening program for newborns, these results reinforce the importance of maintaining a high index of clinical suspicion for cCMV infection.

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

116. Role of Maternal Antibodies in Protection Against Postnatal Cytomegalovirus Acquisition

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Background. Congenital cytomegalovirus (CMV) is the leading infectious cause of birth defects in the United States. Development of an effective CMV vaccine is a public health priority. However, CMV vaccine development is limited by a poor understanding of the immune correlates of protection, including the role of CMV-specific IgG. Defining the role of passively acquired maternal IgG in the protection of half of the CMV-exposed, breastfeeding infants against postnatal CMV acquisition may inform CMV vaccine design

Methods. We analyzed CMV-specific humoral responses in 29 CMV-seropositive Ugandan mother–infant pairs. Seventeen mothers were HIV co-infected. Infants were followed weekly for postnatal CMV acquisition using saliva PCR. Twelve infants acquired CMV and 17 infants did not acquire CMV in the first 6 months of life. We compared CMV-specific IgG responses at delivery of mothers whose infants acquired CMV to mothers whose infants did not acquire CMV by 6 months of life and in the infants at 6 weeks of life. We also compared CMV-specific responses in mothers at delivery and infants at 6 weeks of life based on maternal HIV status.

Results. We found similar CMV-specific total IgG and IgG3 binding, avidity index, neutralization, antibody-dependent cellular phagocytosis, and antibody-dependent cellular cytotoxicity responses in mothers whose infants did or did not acquire CMV by 6 months of life. Moreover, similar CMV-specific IgG binding and neutralization responses were also found between infants who did or did not acquire CMV by 6 months of life. Finally, CMV-specific IgG responses were similar in HIV-infected and uninfected mothers at delivery and in infants at 6 weeks of life regardless of perinatal HIV exposure.

Conclusion. CMV-binding and functional IgG responses do not appear to impact infant susceptibility to postnatal CMV acquisition in the first 6 months of life, and therefore other viral or immunologic factors contribute to the inefficiency of this mode of CMV transmission. Thus, to provide sterilizing protection against mucosal CMV acquisition, an antibody-based CMV vaccine would likely have to induce higher magnitude or qualitatively different responses than that of natural infection.

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

117. Effect of Nasopharyngeal Pneumococcal Carriage on RSV and hMPV Illness Severity in Infants in Nepal

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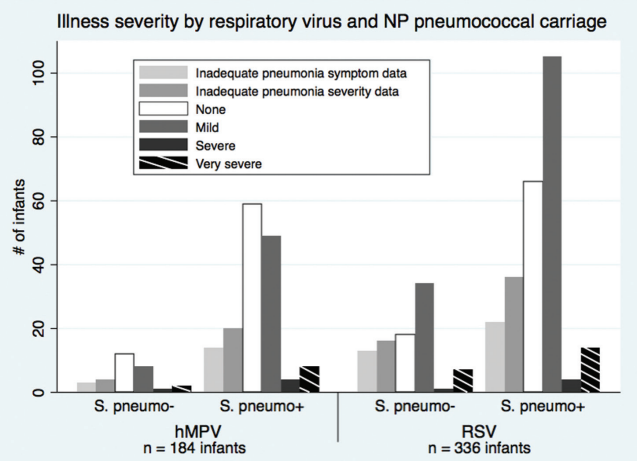
Background. Pneumococcal pneumonia after a preceding respiratory viral illness is associated with morbidity and mortality in infants. Our study sought to determine how pneumococcal carriage impacted illness severity due to respiratory syncytial virus (RSV) or human metapneumovirus (hMPV) in infants 0–6 months in a low resource setting in South Asia without pneumococcal vaccination. Previous studies in this population found an overall 79.4% prevalence of pneumococcal carriage in ages 1–36 months with higher rates of carriage among healthy controls when compared with those with respiratory illness.

Methods. Infants were enrolled at the time of birth in a maternal influenza immunization trial conducted in rural Nepal from 2011 to 2014. Weekly household-based active surveillance was performed from birth to 6 months to assess for infant respiratory illness, defined as fever, cough, difficulty breathing, wheeze, or otorrhea. Midnasal swabs were collected and tested by PCR for RSV, hMPV, and streptococcus pneumoniae with inclusion of first illness episode in the surveillance period. Disease severity was defined using the World Health Organization Integrated Management of Childhood Illness criteria.

Results. Altogether, 247 (73.5%) of 336 infants with RSV and 154 (83.7%) of 184 infants with hMPV had *S. pneumoniae* detected. Mean age at RSV illness with concurrent pneumococcal carriage was 97.0 days (91.3–102.6) versus 72.8 days (63.3–82.4) for infants without carriage ($P < 0.001$). Mean age at hMPV illness with concurrent pneumococcal carriage was 101.3 days (93.9–108.7) versus 77.2 days (56.5–98.0) for infants without carriage ($P = 0.01$). Frequency of reported lower respiratory tract infection did not differ with or without carriage (RSV: 64.4% vs. 65.2% respectively; $P = 0.89$, hMPV: 52.6% vs. 50.0% $P = 0.79$). *S. pneumoniae* PCR cycle threshold value did not differ by duration or severity of RSV or hMPV illness episode.

Conclusion. High rates of pneumococcal carriage were observed with RSV and hMPV illness episodes in a birth cohort of infants in rural Nepal. The majority of infants with RSV or hMPV illness had pneumococcus detected at the time of first observed illness. However, no increase in RSV or hMPV illness severity or duration was seen with pneumococcal carriage.

Figure 1.
RSV and hMPV disease severity, as defined by World Health Organization Integrated Management of Childhood Illness pneumonia criteria, by nasopharyngeal pneumococcal carriage status in a population of infants 0-6 months, Nepal 2011-2014. Inadequate pneumonia symptom data refers to lack of clinical data to determine if symptoms met WHO criteria, while inadequate pneumonia severity data refers to infants meeting WHO criteria with lack of clinical data to determine severity.



Disclosures. **H. Y. Chu**, sanofi pasteur: Grant Investigator, Grant recipient. Novavax: Grant Investigator, Grant to co-investigator's institution.

118. Nasopharyngeal (NP) Bacterial Detection in Infants With Respiratory Syncytial Virus (RSV) Infection: Impact on Clinical Outcomes

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