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Session: 248. Congenital Infections - CMV and HSV
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Background. Congenital cytomegalovirus (cCMV) infection is the most common cause of non-genetic sensorineural hearing loss in infancy. Screening of newborns for cCMV infection has been performed utilizing saliva due to ease of collection and high sensitivity. Positive saliva screens for CMV DNA by polymerase chain reaction (PCR) testing has been reported to occur secondary to breast milk feeding without signifying congenital infection. The NICUs of Nationwide Children's Hospital recently began universal saliva screening of all admissions. We report 3 neonates whose saliva CMV screen was positive yet the urine CMV PCR test was negative in order to inform CMV screening strategies.

Methods. Retrospective review of the electronic health records of neonates admitted to the neonatal intensive unit (NICU) at Nationwide Children's Hospital, Columbus, OH who had CMV detected by PCR from saliva specimens but not from urine. Pertinent demographic and clinical data were obtained.

Results. Three female neonates had a positive saliva CMV DNA PCR test but urine CMV PCR was negative. The first infant (gestational age [GA] 34 weeks, birth weight [BW]1790 Grams) was a monochorionic diamionic twin gestation and born vaginally with unknown duration of rupture of membranes (ROM). At 16 days of age, the infant had a positive saliva CMV PCR but a negative urine CMV PCR test. The infant received maternal milk. The twin's CMV PCR tests of saliva and urine were negative. The second infant (GA 38 weeks, BW 2952 grams) was born vaginally after 9 hours of ROM. On the first day of age, the infant had a positive saliva CMV PCR test that was followed by a negative urine CMV PCR on the third day of age. The infant had not been breastfed. The third infant (GA 33 weeks, BW 1762 grams) was born by C-section delivery with ROM at delivery. Saliva CMV PCR screen was positive on the second day of age but urine PCR was negative twice (days 5 and 7). All 3 infants had no signs/symptoms of cCMV infection and passed the newborn hearing screen.

Conclusion. Testing of saliva for CMV DNA by PCR is not always confirmatory for cCMV infection as contamination of saliva specimens with CMV could result from exposure to maternal milk and possibly vaginal secretions. Definitive diagnosis of cCMV infection requires additional confirmatory testing preferably with urine.

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

2335. Newborn Dried Blood Spot for Retrospective Diagnosis of Congenital Cytomegalovirus (CMV) Infection: It's Time for Universal Screening!

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Background. The diagnosis of congenital cytomegalovirus (cCMV) infection requires that CMV be detected in a body fluid before 3 weeks of age. After 3 weeks, a diagnosis of cCMV infection is difficult since one cannot differentiate between prenatal, natal, and postnatal CMV acquisition. Infants who refer on the newborn hearing screen often are diagnosed with hearing loss after 3 weeks of age. Our objective was to describe the use of the newborn dried blood spot (DBS) for detection of CMV DNA in infants who are evaluated for sensorineural hearing loss (SNHL).

Methods. Retrospective review of the electronic health records of infants who were referred to the Neonatal Infectious Disease (NEO-ID) Clinic at Nationwide Children's Hospital, Columbus, OH since 2015 for evaluation of SNHL. Demographic, clinical, laboratory, and radiographic data were reviewed. With maternal informed consent, the newborn DBS was obtained from the Ohio Department of Health for detection of CMV DNA by polymerase chain reaction (PCR) testing as previously described (Boppana et al. *JAMA*, 2010).

Results. Eighteen infants (gestational age [mean ± SD], 38 ± 4 weeks; birth weight, 3,094 ± 705 g) with SNHL were referred by Otolaryngology for evaluation of possible cCMV infection; 17 (94%) had referred on the newborn hearing screen. The 18 infants were first tested for CMV at 151 ± 124 days of age (mean ±SD; range, 21–521 days), and 3 (17%) had a positive CMV DBS. Fourteen (78%) of the 18 infants had a positive serum CMV IgG antibody while 5 (63%) of 8 infants had CMV DNA detected in urine by PCR. Of the 3 infants with a positive CMV DBS, 2 were tested for CMV DNA PCR in urine and both were positive. Of the 3 infants, 1 had a negative serum CMV IgG antibody test at 174 days of age but the urine CMV PCR test was positive. In comparison, of 54 infants with cCMV infection confirmed by a positive urine CMV PCR in the first 3 weeks of age, 37 (68%) had a positive CMV DBS.

Conclusion. DBS testing for CMV DNA by PCR testing identified a small minority of infants with SNHL and thus confirming congenital infection. However, the overall sensitivity of CMV DBS testing in our cohort was 68%, suggesting that some infants with SNHL due to congenital CMV infection are missed.

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

2336. Adherence to Follow-up and CMV Testing in Infants Who Failed Newborn Hearing Screens: Evaluation of New Protocol to Ensure Follow-up and Testing

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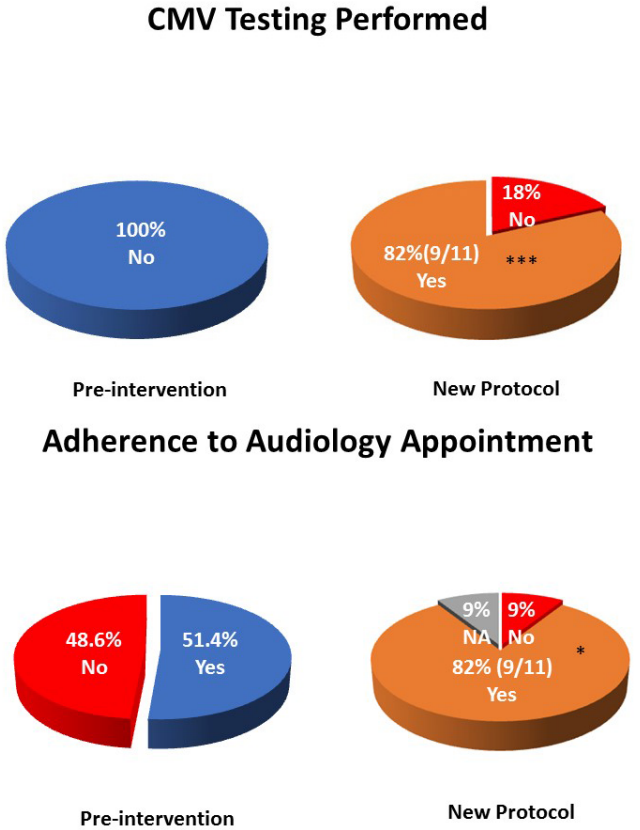
Background. CMV is the most common non-hereditary cause of sensorineural hearing loss (SNHL) in children in the United States. SNHL may be the only presenting symptom in otherwise asymptomatic infants. Several states are making CMV testing mandatory for newborn infants who have a hearing deficit. Testing should be performed before 21 days of life to diagnose congenital CMV infection and provide effective therapy. However, the results of a retrospective 1 year audit of all newborn patients in the nursery of University Hospital of Brooklyn (UHB) who failed their hearing screen found that none were tested for CMV and approximately half failed to follow-up with audiology. Therefor we developed a new protocol to ensure testing and follow-up.

Methods. Under the new protocol, newborns who fail an initial and repeat hearing screen are tested for CMV in urine by culture and the audiology appointment is scheduled before discharge. Patients are tracked by a pediatric infectious disease fellow to ensure adherence to protocol.

Results. The pre-intervention audit conducted from November 1, 2017 to October 31, 2018 found 37/923 (4%) infants failed their hearing screening tests. Although 34/37 (92%) of these children had audiology appointments made before discharge, only 19 (56%) actually attended. Two (11%) children failed an otoacoustic emissions hearing test. One infant also went on to fail an auditory brainstem response test; both were lost to follow-up. None of these infants was tested for CMV. The new protocol was initiated November 1, 2018, 11/372 (3%) infants failed initial and repeat hearing screening tests. All 11 (100%) of these children had audiology appointments made before discharge, of which 9 (82%) attended. 2 (18%) of these children failed the otoacoustic emissions hearing test at that visit, 1 infant was lost to follow-up; 9 infants who failed hearing test were tested for CMV; 1 (9%) was positive.

Conclusion. Although it has only been in place for 5 months, the new protocol has increased adherence to audiology appointments. CMV testing has increased from 0% to 82% and 1 patient has tested positive for congenital CMV infection. The ongoing success of this protocol could facilitate timely and appropriate treatment of CMV with valgancyclovir.



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2337. Health Outcomes in Congenital Cytomegalovirus, a Systematized and Unbiased Approach in the Electronic Medical Record Era

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