Poster 2124

Active surveillance for Congenital Cytomegalovirus infections as part of institutional protocol for newborns with failed hearing screening

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BACKGROUND

- Congenital cytomegalovirus (CMV) is the leading infectious cause of sensorineural hearing loss in newborns.
- Universal screening for congenital CMV is not recommended in the United States.
- It is important to establish effective strategies for early detection of newborns with congenital CMV, as most of them are asymptomatic at birth.

OBJECTIVES

- To provide evidence whether CMV testing in newborns who fail hearing screening is useful.
- To evaluate if early treatment of congenital CMV can prevent progression of hearing loss in newborns who fail hearing screen and are CMV positive.

METHODS

- As per institutional protocol at Louisiana State University Health Sciences Center in Shreveport, every newborn who fails auditory brainstem response (ABR) hearing screen is referred to Audiology and is evaluated with CMV polymerase chain reaction (PCR) from urine samples to rule out congenital CMV before they are discharged home.
- We intended to evaluate the proportion of newborns failing hearing screening during a two-year period that are positive for CMV by urine PCR and that are referred to Pediatric Infectious Diseases for congenital CMV treatment.

RESULTS

- From January 1st, 2020, to August 31st, 2022, 4,490 newborns had ABR based hearing screening at birth, with 161 (3%) failing on two attempts.
- Subsequently, 109 of them (68% of total) passed repeat testing at Audiology clinic, while 36 did not show up for their appointments and 16 failed repeat evaluation.
- Out of the 89 infants that passed repeat hearing test and were tested for CMV, one had positive urine CMV PCR but had no other signs of symptomatic congenital CMV.
- Among the 16 newborns who failed repeat hearing test in Audiology clinic, 3 (19%) had positive urine CMV PCR results, 9 were negative and 4 infants did not have test done (Figure 1).

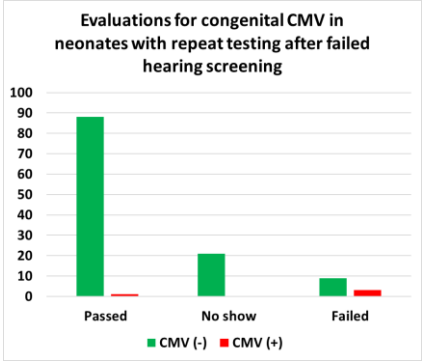

Figure 1. Evaluations with urine CMV PCR in newborns with repeat hearing screening showed that all but one of the 89 newborns that passed were negative; and out of the 16 infants that failed repeat testing, 3 had positive CMV PCR results.

RESULTS

- The 3 infants who tested positive for CMV showed additional clinical features like being born small for gestational age (SGA); they also presented with microcephaly, thrombocytopenia and skin rash.
- They all showed severe to profound sensorineural hearing loss and are being followed by Otorhinolaryngology.
- They are receiving oral valganciclovir for congenital CMV with a plan to receive treatment for 6 months.

CONCLUSION

- Our institutional protocol recommends sending urine samples for CMV PCR in every baby that fails newborn hearing screen, and this has helped us identify neonates with congenital CMV infections in the setting of severe to profound sensorineural hearing loss.
- Our future goals involve evaluating if early treatment of congenital CMV for 6 months can prevent progression of hearing loss and help achieving improved audiological outcomes at 2 years of age.

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