

Congenital CMV Screening: Should We Take a Universal or Targeted Approach?

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It is well-known that congenital CMV infection can result in a sensorineural hearing loss, and that the earlier we can detect that loss the better. Yet CMV screening is challenging not only because of screening accuracy but in interpreting the results. So what approach should we take to detect a significant CMV infection in newborns? Perhaps testing children who fail their newborn hearing screen would at least limit the number of children tested for this viral infection and help us get treatment

for this hearing loss started sooner than later. To help determine the effectiveness of this strategy, Fowler et al. ([10.1542/peds.2016-2128](#)) looked at infants born at 7 US medical centers to determine if a targeted approach to only testing those infants who fail their screen worked best. The investigators for this study screened all infants born over a 5-year period for both hearing impairment and congenital CMV. In this study, 7% of the CMV positive infants failed their newborn hearing screen compared to .9% of the CMV negative babies, but only 2/3 of the CMV positive babies who failed their test went on to have sensorineural hearing loss. In addition, 3.6% of CMV positive babies passed their hearing screen and yet went on to have sensorineural hearing loss detected outside the newborn screen months later. Finally to make matters murkier, the newborn hearing screen identified only 57% of all of the CMV sensorineural hearing loss subsequently confirmed. Thus the Fowler study while able to identify the majority of infants who fail their hearing screen with sensorineural loss due to CMV still left at least 40% with hearing loss undetected in the newborn period using targeted screening. In part, this is because CMV infection can lead to a later-onset hearing loss.

If this study looking at targeted screening gets you thinking about how best to identify CMV sensorineural hearing loss as soon as possible, the study by Diener et al. ([10.1542/peds.2016-0789](#)) looking at results in Utah where CMV screening is mandated for failing a newborn screen is also worth your attention. In this study, infants who failed the newborn screen were followed for 24 months and although CMV screening was

mandated, it was received by 62% of infants with 14 of 234 infants who failed the test being found to be CMV positive within the first three weeks of life and 6 of these CMV+ infants progressing onward with a sensorineural hearing loss. 77% of the infants who failed did go on to have a follow-up hearing evaluation within 90 days of birth suggesting that even if you recommended or even mandated targeted screening, monitoring patients so they get that follow-up screening is easier said than done.

So both studies raise more questions than answers as to when is the best time to detect CMV hearing loss and in whom? To make sense of both studies and provide a nice perspective on this controversial area, Drs. Scott Grosse and Sheila Dollard from the Centers for Disease Control and Prevention and Dr. David Kimberlin from the University of Alabama offer a terrific commentary that really frames these two studies and helps us better understand universal, targeted, or still to be named other strategies for enabling CMV+ babies affected by sensorineural hearing loss to be helped as soon as this disorder can be detected. All three articles have an earful of information to impart, so read them all to be up to date on this important area of newborn screening.

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