Vestibular Disorders in Congenital Cytomegalovirus: A Balancing Act

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In a study published in this issue of *Pediatrics*, Pinninti et al[1] report that vestibular, balance, and gaze disorders occur in up to 45% of children born with asymptomatic congenital cytomegalovirus (cCMV) infection. This study was based on the evaluation of 40 children from among the 449 newborns diagnosed with cCMV through the CMV & Hearing Multicenter Screening (CHIMES) study, which screened >100 000 newborns from 7 medical center sites across the United States from 2007 to 2012.[2] The subjects in this study represent a sample from a single CMV & Hearing Multicenter Screening study site.

This study represents the largest cohort identified and systematically tested for vestibular and balance disorders in children with asymptomatic cCMV. Previous smaller studies, which included symptomatic and asymptomatic children with cCMV and hearing loss, reported balance and vestibular problems, paving the way for this study.[3–6] With this study, Pinninti et al[1] are the first to report disorders of gaze in cCMV. The findings are a significant contribution to our knowledge about the sequelae associated with otherwise clinically unrecognized asymptomatic cCMV. Disorders of gaze, balance, and vestibular function may subtly impact the ability of children to perform activities of daily living and influence their reading, academics, and sports performance in school. Early identification of these subtle disorders and use of functional therapies may mitigate the impact they have on the daily lives of these affected children. Future research is needed to evaluate whether all infants with cCMV should receive vestibular testing. Another important consideration is the degree to which there are differences of age, hearing loss status, race, and ethnicity in the risk of vestibular disorders, as suggested in this study. If these findings are confirmed, future work is needed to assess the underlying causes of the disparities.

It is critical to recognize that cCMV is not rare. It is a globally common congenital infection, with 0.4% to 0.6% (range 0.2%–2.2%) of all newborns reported to be infected, and is a leading cause of newborn illness and childhood sequelae including hearing loss; vision loss; speech, language and developmental delays; seizure disorders; and motor disorders such as cerebral palsy. Most (85%–90%) born with cCMV are asymptomatic and thus are usually undiagnosed. However, asymptomatic cCMV may contribute more to the overall public health burden of the disease than symptomatic disease on the basis of the differences in overall incidence.[7] In addition to congenital and later-onset hearing loss and auditory processing disorders,[8–12] clinicians should now consider gaze, vestibular, and balance disorders may occur in children with asymptomatic cCMV.[1]

Much work is going on to evaluate strategies for newborn screening for cCMV and to evaluate treatment strategies for infants detected with cCMV.[13–16] The study by Pinninti et al[1] suggests that gaze, balance, and

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vestibular disorders should be included as key outcomes of clinical research.[17,18] Ultimately, the hope is that early cCMV detection can treat or even prevent the many now recognized outcomes of this common congenital infection.

ABBREVIATION

cCMV: congenital cytomegalovirus

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