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Audiologic Status of Children with Confirmed Cytomegalovirus Infection: a Case Series

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ABSTRACT

Background: Congenital cytomegalovirus (CMV) infection is the most common non-genetic cause of sensorineural hearing loss (SNHL) in children. Only about 10% to 15% of children with congenital CMV are symptomatic, and most are not diagnosed at birth. About 7% to 15% of clinically asymptomatic patients may develop later complications, including SNHL, which is the most common sequela in clinically asymptomatic patients. In this study, hearing status was investigated in children with confirmed CMV infection and neonatal hearing screening (NHS) histories were reviewed to explore hearing loss caused by CMV.

Methods: The medical records of 58 children who were diagnosed with confirmed CMV infection were reviewed for clinical symptoms and signs of CMV infection. Hearing status was evaluated with age-appropriate audiological test batteries.

Results: A total of 58 children (M:F = 32:26 patients; age at study: mean, 5.62 years, range, 1-10 years) were diagnosed serologically with CMV infection (14 patients, 21.1%), or diagnosed via PCR of serum (5, 7.9%) and/or PCR from urine (19, 26.8%). Hearing loss was confirmed in 11 children (19.0%), being bilateral in 6 (54.5%), and unilateral in 5 (45.5%). Note that 7 of 17 ears with hearing loss passed NHS and were diagnosed only after re-evaluation when CMV infection was identified.

Conclusion: Hearing loss is a serious complication of CMV infection in children. Our results highlight the importance of timely audiological evaluation in children with clinically symptomatic CMV infection even if they pass NHS.

Keywords: Hearing Loss; Cytomegalovirus; Newborn Screening

INTRODUCTION

Congenital cytomegalovirus (CMV) infection is the most common intrauterine infection in humans. The average prevalence at birth has been estimated as about 0.7%.^{1,2} CMV infection in utero causes children to be born with or develop many abnormalities, including petechiae, pneumonitis, hepatosplenomegaly, microcephaly, and chorioretinitis.³ In addition, many patients with congenital CMV suffer from neurological deficits, including hearing loss and vision loss, and developmental delays. At birth, only a small portion (10%–15%) of children with congenital CMV are symptomatic, and the majority are asymptomatic. The prevalence

