

# CMV-Related Hearing Loss Tx May Expand

BY M. ALEXANDER OTTO

SEATTLE — If an infant fails a hearing test, think cytomegalovirus infection, advised Dr. Kathleen Sie.

Congenital cytomegalovirus (CMV) infection is now known to be the leading nongenetic cause of deafness in children, said Dr. Sie, clinical director of the Seattle Children's Hospital's childhood communication center.

In infants with nongenetic hearing loss—at least 25% of cases—she recommended doing cytomegalovirus (CMV) screening by shell vial urine culture if the infant is within the first 6 weeks of life.

Past that, the diagnosis must be made by polymerase chain reaction (PCR) testing of the neonatal blood spot.

If the infant is positive for CMV, treatment with valganciclovir, an oral antiviral agent, might halt or even reverse hearing loss, Dr. Sie said at a conference sponsored by the North Pacific Pediatric Society.

Although not the standard of practice now, she said screening and treatment for pediatric CMV-related hearing loss will become increasingly common over the next 10 years. CMV will become the treatable cause of hearing loss in children because of promising results from small, early studies and because of the availability of valganciclovir, the active metabolite of ganciclovir, the drug used in those early studies.

In a small, randomized clinical trial published in 2003, the hearing of 25 infants born with symptomatic CMV infections and treated with ganciclovir did not deteriorate by 6 months; hearing deteriorated in 41% (7 of 17) of untreated infants.

At or beyond age 1 year, hearing deteriorated in 21% (5 of 24) of ganciclovir-treated patients, compared with 68% (13 of 19) of controls (J. Pediatr. 2003;143:16-25).

The study did not lead to widespread use of ganciclovir for CMV hearing loss, however, because the results came only after the drug was given for 6 weeks through a central line, and because 63% of those treated developed grade 3 or 4 neutropenia.

Drug administration drawbacks, at least, will be avoided with the oral agent valganciclovir, she said.

An ongoing National Institutes of Health-funded study could shed light on the use of the drug; a 6-week course of valganciclovir is being tested against a 6-month course for CMV-related hearing loss and developmental delays.

About 1% of newborns are born with congenital CMV infections in Washington state, Dr. Sie noted. Nationwide, National Institutes of Health estimates range from 0.5% to 1.5%.

Between 22% and 65% will have hearing loss if they are born with CMV symptoms; the percentage is 6%-23%, if the infants are born asymptomatic (J. Clin. Virol. 2006;35:226-31).

CMV hearing loss can be either uni-

lateral or bilateral, and vary in the severity and frequencies affected, Dr. Sie said. It is unclear how the virus damages hearing, but CMV has been detected in the perilymphatic spaces of the inner ear and the spiral ganglion, the location of the nerve endings in the inner ear.

The reason shell vial urine cultures can be done at or before 6 weeks of age is that an infected newborn will likely be

shedding virus. Later, a neonatal blood spot PCR must be done to rule out post-natal infection, which is not thought to carry the same risk of hearing loss.

Although infants with hearing loss are not yet typically screened and treated for CMV, when they are, treatment is usually initiated only when the infection is caught by 6 months of age, Dr. Sie said. That misses later-onset CMV hearing loss.

Dr. Sie said she expects that in coming years, treatment will be initiated even if the diagnosis comes later.

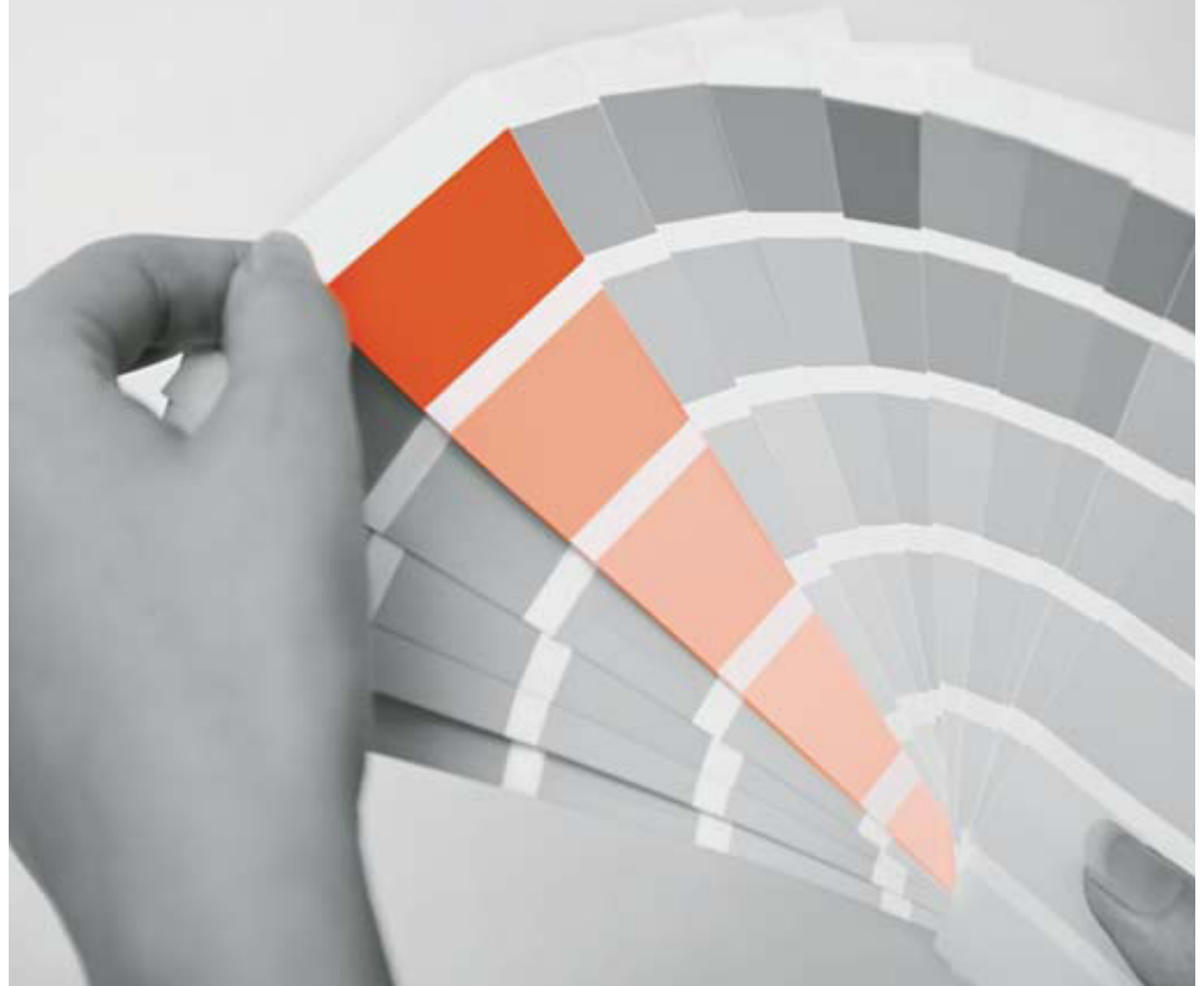
"We do know that [CMV-related] damage can continue for the first few years of life.

"So it's reasonable to think the window for treatment might extend beyond 6 months," she said. ■

*Disclosures: None was reported.*

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\*Centers for Disease Control and Prevention. <sup>†</sup>*Haemophilus influenzae* type b.

Reference: 1. Centers for Disease Control and Prevention. Hib Vaccine—Q&A for Providers about the Hib Vaccination Schedule. <http://www.cdc.gov/vaccines/vpd-vac/hib/faqs-hcp.htm>. Accessed February 19, 2010.

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