Parechovirus infections in infants

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1 Severe parechovirus infections are mostly caused by genotype PeV-A3

Outbreaks of PeV-A3 typically follow a biennial pattern.[1,2] In July 2022, the United States Centers for Disease Control and Prevention issued a health advisory to alert clinicians of reports of PeV-A3 cases in multiple states.[2] A similar outbreak was observed in parts of Canada, including Montréal. As with enteroviruses, parechoviruses circulate primarily during summer and fall.[2,3]

2 Infants younger than 3 months are at greatest risk of severe disease[3]

Transmission occurs through contact with respiratory secretions or via the fecal–oral route; congenital acquisition has not been established.[3] Clinical manifestations range from mild gastrointestinal and respiratory symptoms, to sepsis-like presentations and meningoencephalitis. Infants with central nervous system (CNS) infection present with fever, rash, irritability and, frequently, seizures.[1] Supportive care is the mainstay of treatment of parechovirus infections.[1]

3 Normal cerebrospinal fluid (CSF) parameters do not exclude CNS infection

The absence of pleocytosis, regardless of disease stage, is typical of parechovirus CNS infection. Polymerase chain reaction (PCR) testing of CSF should be performed in infants younger than 3 months with compatible symptoms, regardless of CSF parameters; PCR testing of blood samples can inform the diagnosis of parechovirus with sepsis-like presentations.[3] Clinicians should monitor the patient's complete blood count, coagulation profile and alanine aminotransferase level for complications such as hemophagocytic lymphohistiocytosis and hepatitis.[3] The C-reactive protein level is usually normal or mildly elevated.[1]

4 Infection of the CNS is associated with cerebral white matter diffusion abnormalities on magnetic resonance imaging (MRI)[3]

Because the correlation between MRI findings and neurodevelopmental outcomes remains unclear,[4] no specific guidance informs which infants should receive an MRI, although it should be considered for patients with severe neurologic manifestations such as seizures.[3]

5 In infants with CNS infection, long-term neurodevelopmental follow-up is advisable[4]

A recent systematic review showed increased identification of neurologic sequelae (27%) and neurodevelopmental delay (9%) with follow-up to preschool or school age. Neurodevelopmental follow-up should be considered for early detection and intervention.[4]

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