Parechovirus and Neonates -A Rising Concern

Objectives

- Review the emerging evidence about parechovirus (PeV-A) as a leading cause of central nervous system infections in infants
- Summarize the most common presenting signs, symptoms, and laboratory findings as observed in recent studies
- Discuss the importance of the studies and cases presented in identifying key patterns of PeV-A infection in neonates including seasonality, sample sites, and factors implicated in virus shedding, modes of transmission, and outcomes
- Describe the MRI neuroimaging findings and patterns that are characteristic features of parechovirus encephalitis in neonates and young infants

Content Outline

1. Recent Study Evidence Related to Human Parechovirus Infections in Neonates and Young Infants
   - 1.1 Year-round, routine testing of young febrile infants using multiple body site specimens with objectives of describing seasonal changes, increasing diagnostic yield, and better defining clinical manifestations
   - 1.2 Prospective study of infants less than 90 days old hospitalized for sepsis evaluation (with LP) with goal of evaluating maternal shedding of PeV-A or EV, assaying maternal PeV-A3 neutralizing antibodies, and identifying clinical and laboratory features of PeV-A or EV CNS infection in infants
   - 1.3 Presentation of case series of neuroimaging findings in parechovirus encephalitis with highlighting of the magnetic resonance imaging (MRI) brain injury patterns characteristic in neonates and young infants
   - 1.4 CDC Morbidity and Mortality Weekly Report featuring a cluster of parechovirus central nervous system infections in young infants in Tennessee, 2022

Reading Material Resources

Module WB2519: Parechovirus and Neonates – A Rising Concern is based on the resources listed below. A copy of each resource is included with the module.

Year-Round, Routine Testing of Multiple Body Site Specimens for Human Parechovirus in Young Febrile Infants, Souverbielle CT et al., *The Journal of Pediatrics*, 229 (2021), 216-222

Maternal parechovirus A (PeV-A) shedding, serostatus, and the risk of central nervous system PeV-A infections in infants, Klatte JM et al., *Journal of Clinical Virology*, 142 (2021), 1-6

Neuroimaging Findings in Parechovirus Encephalitis: A Case Series of Pediatric Patients, Tierradentro-Garcia LO et al., *Pediatric Neurology*, 130 (2022), 41-45

Cluster of Parechovirus Central Nervous System Infections in Young Infants-Tennessee, 2022, Tao L et al., US Department of Health and Human Services/Centers for Disease Control and Prevention, *Morbidity and Mortality Weekly Report*, July 29, 2022, (Vol. 71, No. 30), 977-978