



The Human Parechovirus as a rare cause of the encephalitis in neonate

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Background:

In the era of PCR analysis of the cerebrospinal fluid (CSF), the human parechovirus (HPeV) is an increasingly recognized cause of central nervous system (CNS) infections in infants younger than 3 months. HPeV encephalitis is a rare infection in term-born children and mainly affects premature neonates. The symptoms of HPeV infection include fever, rash, irritability, lethargy, seizures, cough, diarrhea and feeding difficulties. HPeV can also cause sepsis and even death. Parechovirus encephalitis in neonates and infants can lead to neurological sequelae or neurodevelopmental delay.

Case presentation:

A seven-day-old neonate (birth at 39 weeks gestation) was admitted to the Department of Neonatal Pathology due to otitis externa. The boy was noted to be reluctant to eat and severely anxious. The neonate presented insufficient weight gain, features of dehydration, erythematous-papular rash on the surface of the trunk and limbs, and a tense abdomen. The fever (38°C) with tachycardia appeared a few hours after the admission. There were two episodes of clonic hemiplegic seizures on the next day of hospitalization. The presence of HPeV was detected in the PCR test of CSF. The MRI of the CNS showed symmetrical, diffuse inflammatory lesions located in the white matter and periventricular. The boy was diagnosed with parechovirus encephalitis and received immunoglobulin treatment. After a month, a follow-up MRI showed the evolution of inflammatory lesions in the brain.

Conclusion:

Parechovirus encephalitis in term-born neonate is an uncommon infection. MRI is the primary modality for imaging inflammatory lesions of the CNS especially in children. Early detection of the HPeV through the combination of the PCR-based assays for CSF and MRI scans allows the diagnosis and early application of appropriate treatment. Children after HPeV encephalitis require long-term follow-up due to possible neurological complications, such as impairment in auditory or visual functions, or gross motor function delay.

Keywords:

encephalitis, neonate, the human parechovirus