

Health Advisory

Recommendations for Adenovirus Testing and Reporting of Children with Acute Hepatitis of Unknown Etiology

April 26, 2022

The Centers for Disease Control and Prevention (CDC) recently issued a [Health Advisory](#) to notify clinicians and public health authorities of a cluster of children identified with hepatitis and adenovirus infection. In November 2021, clinicians at a large children's hospital in Alabama notified CDC of five otherwise healthy, pediatric patients with significant liver injury, including three with acute liver failure, who also tested positive for adenovirus. Case-finding efforts at this hospital identified four additional pediatric patients with hepatitis and adenovirus infection for a total of nine patients admitted from October 2021 through February 2022; all five that were sequenced had adenovirus type 41 infection identified. Two patients required liver transplant; no patients died. A possible association between pediatric hepatitis and adenovirus infection is currently under investigation. The United Kingdom also reported cases of pediatric hepatitis in children who tested negative for hepatitis A, B, C, D, and E earlier this month, including some with adenovirus infection.

SUMMARY POINTS

- CDC is currently investigating a possible association between pediatric hepatitis and adenovirus.
- Philadelphia-area clinicians who have or are providing care to cases of pediatric hepatitis with unknown etiology since October 1, 2021, should:
 - Test specimens for adenovirus.
 - Report cases to PDPH at (215) 685-6741.

Hepatitis is inflammation of the liver that can be caused by viral infections, alcohol use, toxins, medications, and certain other medical conditions. Signs and symptoms of hepatitis include fever, fatigue, loss of appetite, nausea, vomiting, abdominal pain, dark urine, light-colored stools, joint pain, and jaundice. Treatment of hepatitis depends on the underlying etiology.

Adenoviruses are double-stranded DNA viruses that spread by close personal contact, respiratory droplets, and fomites. There are more than 50 types of immunologically distinct adenoviruses that can cause infections in humans. Adenoviruses most commonly cause respiratory illness but depending on the adenovirus type they can cause other illnesses such as gastroenteritis, conjunctivitis, cystitis, and, less commonly, neurological disease. There is no specific treatment for adenovirus infections. Seasonal updates on adenovirus activity in Philadelphia are available at: <https://hip.phila.gov/data-reports-statistics/otherrespiratoryviruses/>.

Adenovirus type 41 commonly causes pediatric acute gastroenteritis, which typically presents as diarrhea, vomiting, and fever; it can often be accompanied by respiratory symptoms. While there have been case reports of hepatitis in immunocompromised children with adenovirus type 41 infection, adenovirus type 41 is not known to be a cause of hepatitis in otherwise healthy children.

Recommendations and Reporting

Philadelphia-area clinicians who have provided medical care or are currently providing medical care to patients <10 years of age with elevated aspartate aminotransferase (AST) or alanine aminotransferase (ALT) (>500 U/L) and an unknown etiology for their hepatitis since October 1, 2021 should:

- Collect specimens (respiratory specimens, stool or rectal swabs, or blood) and test for adenovirus using nucleic acid amplification testing. Whole blood specimens may be more sensitive than plasma. Freeze residual or additional specimens from patients currently receiving medical care for further testing.
- Report patients who meet the above criteria to the Philadelphia Department of Public Health (PDPH) during business hours at (215) 685-6741. PDPH can assist providers with initial adenovirus testing if needed and coordination of additional testing with CDC.

Adapted from [CDCHAN-00462](#).