Adenovirus Clinical Overview

Colorized transmission electron micrograph of adenovirus.

Adenoviruses are medium-sized (90-100 nm), non-enveloped icosahedral viruses with double-stranded DNA. There are over 50 types that are immunologically distinct that can cause infections in humans. Adenoviruses are relatively resistant to chemical and physical agents and to adverse pH conditions and can live for a long time outside the body.

Adenoviruses most commonly cause respiratory illness. The symptoms can range from the common cold to pneumonia, croup, and bronchitis. Depending on the type, adenoviruses can cause other illnesses such as gastroenteritis, conjunctivitis, cystitis, and less commonly, neurological disease.

Infants and people with weakened immune systems are at high risk for severe complications of adenovirus infection. Also, adenoviruses commonly cause acute respiratory illness in military recruits.

Some people infected with adenoviruses can have ongoing infections in their tonsils, adenoids, and intestines that do not cause symptoms. They can shed the virus for months or years.

Diagnosis

Adenovirus infections can be identified using antigen detection, polymerase chain reaction assay, virus isolation, and serology. Adenovirus typing is usually done by hemagglutination-inhibition and/or neutralization with type-specific antisera or by molecular methods.

Even if a person has adenovirus, it does not necessarily mean that this virus it is causing the particular illness that the person has. A person can shed the virus for months or years and not have symptoms.

Health professionals should

- consider adenoviruses as a possible cause of severe pneumonia cases and outbreaks of pneumonia of unknown etiology
- report unusual clusters of severe respiratory disease caused by adenoviruses to the CDC