
VIRAL MENINGITIS caused by enterovirus species

Frequently Asked Questions

1. What is enteroviral meningitis?

Meningitis is an inflammation of the meninges (the tissue that covers the spinal cord and brain). Viral meningitis is the most common type of meningitis (other causes are bacteria and fungi). The most common causes of viral meningitis are non-polio enteroviruses (called 'enteroviruses' or 'coxsackie viruses' or 'echoviruses'). There are other causes of viral meningitis, such as the herpes viruses (herpes simplex & varicella-zoster), measles, mumps, lymphocytic chorio-meningitis virus and arboviruses (e.g. West Nile virus). Enteroviral meningitis is usually less severe than bacterial meningitis and the other viral causes of meningitis. Very young children and immune compromised individuals may present with severe illness.

2. Who can get enteroviral meningitis?

All ages are at risk. However, the risk of getting the disease is higher in individuals who are immune compromised and children less than 5 years old.

3. Where does enteroviral meningitis occur in South Africa?

Enteroviral meningitis occurs across the world. In South Africa, as in other countries, seasonal peaks occur especially in warmer months. There are limited data about the serotypes of enterovirus that occur in South Africa. A well-characterized outbreak occurred from October 2010-February 2011 in the Tshwane area, caused predominantly by echovirus 4. Prior to this, documented outbreaks of aseptic meningitis have occurred in 1981 (Cape Town), 1964, and in the 1950s (described in the South African Medical Journal).

4. How is enteroviral meningitis transmitted?

The non-polio enteroviruses that cause meningitis are transmitted faecal-orally. The enteroviruses live in the human gastro-intestinal tract, and are shed in the faeces. Enteroviruses are very stable in the environment and can live outside human body for days. Viral contamination of hands and surfaces occurs through contact with faeces. Infection occurs when viral particles are ingested, or come into contact with mucous membranes. Some enteroviruses can be transmitted through droplet spread from respiratory secretions. Infection with enteroviruses is common but only few individuals who are infected develop viral meningitis. The risk of transmitting viral meningitis from one person to another through close contact is minimal.

5. What are the signs and symptoms of enteroviral meningitis?

Common symptoms of enteroviral meningitis in children include fever, poor eating, irritability, lethargy (lack of energy) and sleepiness. Adults may present with fever, stiff neck, headache, dislike of bright lights (photophobia), lethargy, sleepiness, and lack of appetite, nausea and vomiting. Diarrhoea and abdominal pain is an alternative, and more common presentation of enterovirus infection. Muscle pains and joint aches, sore throat and rash have also been reported. Very rarely, enteroviral meningitis has been associated with acute flaccid paralysis.

6. How is enteroviral meningitis diagnosed?

Diagnosis is made at the lab by testing specimens from a sick individual. Specimens can include cerebrospinal fluid (CSF), nasopharyngeal swabs, rectal swabs and stool. Blood can also be tested. Enteroviral meningitis usually presents with a predominance of lymphocytes in the CSF, unlike a bacterial meningitis where the neutrophil cell count is usually high. Protein levels may be slightly high. Bacterial culture will be negative. A PCR assay for enterovirus can be done, and will be positive in most cases. The same PCR test can be done on oropharyngeal swabs, stool or blood.

7. How is enteroviral meningitis treated?

There is no specific treatment for enteroviral meningitis. In most cases, complete recovery can occur within 7 to 10 days. Supportive treatment to relieve symptoms such as giving analgesics for headache is recommended. Antibiotics have no effect on enteroviral meningitis.

8. How can enteroviral meningitis be prevented?

In general good hygiene practices including hand washing after using the toilet, changing nappies or visiting sick people, and disinfection of surfaces will reduce the chances of getting an enteroviral infection. Covering your cough or sneeze, and washing hands thereafter is also helpful.

9. Where can I find more information?

For further information regarding diagnosis and laboratory testing, please contact your local NICD laboratory. For investigation of clusters of cases of meningitis, please call the NICD outbreak hotline 082-883-9920, or email outbreak@nicd.ac.za