

MONONUCLEOSIS, INFECTIOUS

(Glandular Fever, Gammaherpesviral Mononucleosis, EBV Mononucleosis)

REPORTING INFORMATION

Not a reportable disease in Ohio. This section presented for information purposes only.

AGENT

Epstein-Barr Virus (EBV), human (gamma) herpesvirus 4.

CASE DEFINITION

None.

SIGNS AND SYMPTOMS

Infectious mononucleosis is typically manifested by fever, sore throat with exudative pharyngitis, lymphadenopathy, hepatosplenomegaly, and atypical lymphocytosis. Rash may occur, particularly in persons treated with ampicillin as well as other penicillins. Liver involvement and jaundice may also occur. Central nervous system complications include aseptic meningitis, encephalitis and Guillain-Barré Syndrome. Hematologic complications can include splenic rupture, thrombocytopenia, hemolytic anemia, agranulocytosis, and hemophagocytic lymphohistiocytosis. Rarely, orchitis, pneumonia and cardiac involvement occur. Infants and young children are frequently asymptomatic. A chronic mononucleosis-like illness has been described but in several studies has not been shown to be related specifically to EBV. Fatigue lasting weeks to a few months may follow less than ten percent of cases of classic infectious mononucleosis. It is important to note that symptoms related to infectious mononucleosis caused by EBV infection seldom last for more than 4 months. When such an illness lasts more than 6 months, it is frequently called chronic EBV infection. However, valid laboratory evidence for continued active EBV infection is seldom found in these patients. The illness should be investigated further to determine if it meets the criteria for chronic fatigue syndrome, or CFS. This process includes ruling out other causes of chronic illness or fatigue.

DIAGNOSIS

The clinical diagnosis of infectious mononucleosis is suggested on the symptoms of fever, sore throat, swollen lymph glands, and the age of the patient. Laboratory tests are usually needed for confirmation.

EBV can be isolated from oropharyngeal secretions, but this procedure is rarely available in routine diagnostic labs. Viral isolation does not indicate acute infection.

Serologic testing for nonspecific heterophile antibody, including the Paul-Bunnell test and slide agglutination reaction, is most commonly available. These tests are often negative in infants and children <4 years of age, but will identify approximately 85% of classic infectious mononucleosis cases in older children and adults during the second week of illness. Virus-specific serology is valuable for studying patients with heterophile-negative infectious mononucleosis. Testing for cytomegalovirus (CMV) and other viral agents is also indicated. CMV is the most common cause of heterophile-negative infectious mononucleosis in most populations.

Diagnostic virology laboratories can do specific serologic antibody tests for EBV. The most commonly run test is antibody against the viral capsid antigen (VCA). IgG antibody against VCA (anti-VCA IgG) is found in high titers soon after infection occurs and persists for life; therefore, testing of acute and convalescent sera for anti-VCA may not be useful for

determining the presence of an active infection. Testing for IgM anti-VCA and the absence of antibodies to Epstein-Barr nuclear antigen (EBNA) is useful for identifying active and recent infections. The serum antibody against EBNA can be identified only weeks to months after onset of infection; therefore, its presence excludes the possibility of recent infection.

SERUM EBV ANTIBODIES IN EBV INFECTION

Infection	VCA IgG	VCA IgM	EA(D)	EBNA
None previous	Negative	Negative	Negative	Negative
Acute	Positive	Positive	Pos/Neg	Negative
Recent	Positive	Pos/Neg	Pos/Neg	Pos/Neg
Past	Positive	Negative	Pos/Neg	Positive

EPIDEMIOLOGY

Source

Humans are the sole reservoirs.

Occurrence

Worldwide, not seasonal in incidence. Infection is generally acquired early in life, especially in lower socioeconomic groups, where intrafamilial transmission is common. In the United States, up to 95% of adults between the ages of 35 and 40 years of age have been affected. Endemic in group settings where adolescents or young adults are in close contact, such as in high school and college students, and the military. About 50% of those infected develop clinical infectious mononucleosis, others are mostly asymptomatic.

Mode of Transmission

Person-to-person. Intimate contact with saliva (found in the mouth) of an infected person. Young children may be infected by saliva on the hands of caretakers, on toys or by sharing eating and drinking utensils contaminated by infected saliva. Blood transfusion has occasionally been implicated in transmission, though uncommon. Transmission of this virus through the air or blood does not normally occur.

Period of Communicability

Virus can be excreted for many months following infection. Asymptomatic carriage is common. The period of communicability is therefore indeterminate.

Incubation Period

Estimated to be 4-6 weeks.

PUBLIC HEALTH MANAGEMENT

Case

Treatment

Supportive. No antiviral drugs or vaccines are available. Although therapy with short-course corticosteroids may have a beneficial effect on acute symptoms, because of potential side-effects, their use should be considered only for patients with marked tonsillar inflammation with impending airway obstruction, massive splenomegaly,

myocarditis, hemolytic anemia, or HLH. Patients suspected of having infectious mononucleosis should not be given ampicillin or amoxicillin, as they are likely to cause non-allergic morbilliform rashes in patients with mononucleosis. Contact sports should be avoided to reduce the risk of splenic rupture.

Isolation

Infected persons may return to classes or work when they feel well enough to do so. In the hospital setting, no isolation precautions are recommended; use standard precautions.

Contacts

Persons who have had exposure to infectious secretions of a case patient should be instructed to seek medical care if symptoms develop.

Prevention and Control

Good personal hygiene, including handwashing and avoidance of contact with salivary contamination from infected individuals, are protective measures to be implemented in the home or community setting. Avoid drinking beverages from a common container, in order to minimize contact with saliva. Persons with recent history of EBV infection or an infectious mononucleosis-like illness should not donate blood for at least six months following the onset of illness. There is no vaccine available.

What is infectious mononucleosis?

Infectious mononucleosis is a viral disease that affects certain blood cells. It is caused by the Epstein-Barr virus (EBV), which is a member of the herpesvirus family. Most cases occur sporadically. Outbreaks are rare.

Who gets infectious mononucleosis?

While most people are exposed to the Epstein-Barr virus sometime in their lives, very few go on to develop the symptoms of infectious mononucleosis. In developed countries such as the United States, the age of first exposure is often delayed until older childhood and young adult age when symptoms are more likely to result. For this reason, it is recognized more often in high school and college students.

How is infectious mononucleosis spread?

The virus is spread by person-to-person contact, via saliva (on hands or toys or by kissing). In rare instances, the virus has been transmitted by blood transfusion.

What are the symptoms of infectious mononucleosis?

Symptoms include fever, sore throat, swollen glands and fatigue. Sometimes the liver and spleen are affected. Duration is from one to several weeks. The disease is very rarely fatal.

How soon do symptoms appear?

Symptoms appear from 4-6 weeks after exposure.

When and for how long is a person able to spread infectious mononucleosis?

The virus is shed in the throat during the illness and for up to a year after infection. After the initial infection, the virus tends to become dormant for a prolonged period and can later reactivate and be shed from the throat again.

What is the treatment for infectious mononucleosis?

No treatment other than rest is needed in the vast majority of cases.

What can a person do to minimize the spread of infectious mononucleosis?

Avoid activities involving the transfer of body fluids (commonly saliva) with someone who is currently or recently infected with the disease. At present, there is no vaccine available to prevent infectious mononucleosis.