

Erythema infectiosum (human parvovirus infection or slapped cheek disease)

Victorian statutory requirement

Notification and school exclusion are not required.

Infectious agent

The causative agent is human parvovirus B19.

Identification

Clinical features

Asymptomatic infection with human parvovirus B19 is common.

In children it causes a mild illness with little or no fever but a striking redness of the cheeks, hence the alternative name of 'slapped cheek disease'. There may also be a lacy pink rash on the trunk and limbs that fades within a week, but which may recur over several weeks on exposure to heat or sunlight. Headache, itch or common cold-type symptoms may also occur. In adults the rash is often absent or atypical. They may have cold-type symptoms and sometimes painful or swollen joints lasting two or three days.

Parvovirus affects the development of red blood cells. As a result several groups of people are at increased risk of developing complications:

- infection in the first half of pregnancy can cause foetal anaemia with hydrops foetalis. Foetal death occurs in less than ten per cent of these cases
- persons with haemolytic anaemia may develop transient aplastic crises, often in the absence of a rash
- immunosuppressed persons may develop severe chronic anaemia.

Method of diagnosis

Diagnosis can be suspected on clinical grounds, particularly during outbreaks. However, confirmation depends on demonstrating the presence of specific IgM antibodies or seroconversion to specific IgG antibodies. Comparison of the current antibody status against pre-natal screening serology for parvovirus is often useful in pregnancy.

Specific IgM antibody titres decline two to three months after infection while IgG levels, which appear two weeks after infection, can persist indefinitely.

Nucleic acid (PCR) testing and electron microscopy can also be used to confirm foetal infection.

Incubation period

The incubation period varies from four to twenty days.

Public health significance & occurrence

Human parvovirus infection occurs worldwide and is a common childhood disease. Outbreaks occur during winter and spring with epidemics occurring every three to four years.

Up to 50% of susceptible household contacts and 10–60% of child care or school contacts may be infected during outbreaks.

Reservoir

Humans.

Mode of transmission

The virus is transmitted by contact with infected respiratory secretions. It may be spread vertically from mother to foetus and rarely by transfusion of blood products.

Period of communicability

Children with erythema infectiosum are most infectious before the onset of the rash and are probably not infectious after the rash appears.

Patients with an aplastic crisis are infectious for a week after the onset of symptoms.

Immunosuppressed persons with chronic anaemia due to infection may excrete virus for years.

Susceptibility & resistance

Infection generally confers immunity. Serological surveys suggest 5–15% of preschool children and 50–60% of all adults are immune.

Control measures

Preventive measures

There is no vaccine available.

All people who are non-immune to parvovirus, immunosuppressed, have chronic haemolytic disorders, or who are pregnant are at increased risk of complications.

These people should be advised of the risk that parvovirus infection may pose to them. They should avoid close contact with children or adults in settings where parvovirus infection may occur such as schools, child care centres and health care facilities.

Strict hand washing and separate eating utensils are also advised for these people.

Control of case

There is no specific treatment required for uncomplicated infection.

Specialist advice should be sought if a patient with immunodeficiency or a blood disorder contracts parvovirus infection.

Control of contacts

Intrauterine infection may rarely result in foetal hydrops or death if infection occurs within the first 20 weeks of pregnancy. Medical advice should be sought for pregnant women who have been in close contact with a case of parvovirus infection. Specific antibody testing should be performed to determine the woman's immune status to parvovirus.

Control of environment

Not applicable.

Special settings

Patients and health care workers with acute parvovirus infection should not have contact with high risk hospitalised patients such as pregnant women, the immunosuppressed and those with a chronic haemolytic anaemia.

Outbreak measures

General public health measures include:

- advising high risk persons of relevant outbreaks
- advising patients and contacts to observe strict hand washing after coughing, sneezing and before eating.

Source: <http://www.health.vic.gov.au/ideas/bluebook/erythema>