

Hand, foot and mouth disease

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BACKGROUND Hand, foot and mouth disease is a common viral illness of infants and children. **OBJECTIVE** This article aims to describe the cause, presentation, management and infectivity of this virus.

DISCUSSION Hand, foot and mouth disease is characterised by fever and vesicles in the mouth and on distal extremities. It is usually caused by coxsackie A virus and less commonly by coxsackie B and enterovirus 71. Hand, foot and mouth disease usually affects children under 10 years of age. Enteroviruses may also cause more serious disease such as meningoencephalitis and myocarditis. Treatment is symptomatic. Children are particularly infectious until the blisters have disappeared. Exclusion from school or childcare is not practical as the virus may be present in the faeces for several weeks.

Hand, foot and mouth disease (HFMD) occurs worldwide sporadically and in epidemics. Incidence is greatest in summer and early autumn. Outbreaks occur frequently among groups of children in childcare centres and schools. It is usually caused by coxsackie A virus (A16), but may be caused less commonly by other group A and group B coxsackie viruses and enterovirus 71 (EV71).¹

Enteroviruses are also known to cause more serious diseases, such as meningoencephalitis and myocarditis. Outbreaks of infection with EV71 have occurred throughout the world and most often manifest as 'hand, foot and mouth disease'. An outbreak occurred in Perth, Western Australia, from February to September 1999. During this epidemic, a small number of children also suffered neurological complications due to EV71.² Other significant outbreaks of EV71 and meningoencephalitis have occurred in Malaysia, Taiwan and Singapore in the past five years. These outbreaks have affected thousands of patients and have had considerable morbidity and mortality.³⁻⁶

Transmission is via direct contact or droplet spread. The incubation period is 3-6 days and children are particularly infectious until the blisters have disappeared. The virus is shed in faeces and saliva for several weeks. Children under 10 years

of age are most commonly affected. Note: This disease is NOT related to foot and mouth disease of animals.

Presentation

Hand, foot and mouth disease is a syndrome characterised by vesicular stomatitis and cutaneous lesions of the distal extremities. The illness usually begins with a prodrome of fever, sore throat and anorexia. One or two days after the fever begins, vesicles appear on the cheeks, gums and sides of the tongue (Figure 1). These begin as small red spots that blister and often become ulcers. The skin rash develops over 1-2 days with papulovesicular lesions occurring in 75% of cases. These appear on the palms, fingers, toes, soles, buttocks (common), genitals and limbs (Figure 2, 3). The lesions may look haemorrhagic and are not itchy. The illness usually lasts 7-10 days.⁷

Diagnosis is usually based on the clinical picture alone. Viral isolation from nasopharyngeal and stool specimens, and polymerase chain reac-



Figure 1. Vesicles on the gum
Photo courtesy of Dr Peter Barnett,
Royal Children's Hospital, Melbourne



Figure 2. Lesions on the hand Photo courtesy of Dr Peter Barnett, Royal Children's Hospital, Melbourne



Figure 3. Lesions on the soles of the feet Photo courtesy of Dr Peter Barnett, Royal Children's Hospital, Melbourne

tion analysis of blood, cerebrospinal fluid, and faeces are possible, but rarely indicated. Infection results in immunity to the specific virus, but a second episode can occur following infection with a different member of the enterovirus group.

Management

Symptomatic treatment only is required. More severe enteroviral infections have been treated with the new antiviral agent, pleconaril, although there are few studies showing a clear improvement in outcome.

Pregnancy

Enterovirus infection can be transmitted to the fetus if infection occurs late in pregnancy. Meningoencephalitis, thrombocytopenia, disseminated intravascular coagulopathy, cardiomyopathy and hepatitis may ensue in the newborn, and

disease appears to be more severe than if it is postnatally acquired.⁸

School or childcare exclusion

Notification is not required.⁹ Exclusion is not practical as the virus may be present in the faeces for several weeks.

Conflict of interest: none declared.

SUMMARY OF IMPORTANT POINTS

- Enteroviral infections, including HFMD are common in children, particularly in summer and autumn.
- Most children have a short lived mild illness.
- Parents and childcare workers should wash hands carefully after handling respiratory discharges, faeces, or after contact with skin lesions.
- Exclusion from school or childcare is not indicated.

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