

Enterovirus outbreak in Asia

Source: World Health Organization, Centers for Disease Control, United States of America and the Department of Health, Government of Hong Kong Special Administrative Region.

Current situation

Taiwan

To 3 July 1998, 56 infants and young children had died of severe complications during the outbreak of hand, foot, and mouth disease (HFMD) which began in April in Taiwan, Republic of China. A total of 626 cases have been hospitalised with serious complications including viral meningitis or encephalitis. Ninety per cent of those who died and 86% of hospitalised cases were under 6 years of age. Enteroviruses have been isolated from children with HFMD, meningitis or encephalitis, and fatal disease. In particular, enterovirus 71 (EV71) has been identified most frequently but it has not yet been confirmed as the cause of the HFMD outbreak or the deaths. The Taiwan Department of Health has formed a special task force which includes experts from the Centers for Disease Control, United States of America to investigate the outbreak and control its spread.

The greatest risk of death is for Taiwanese children younger than 3 years old. The death rate for this group since the outbreak began in April 1998 has been approximately 1 per 10,000. The risk of death among older Taiwanese children is substantially lower, and no adults have been reported to have died with this clinical syndrome. Risk also seems to differ by geographic region; most of the fatal cases have occurred in central and northern Taiwan. No deaths have been reported among children or adults from other countries visiting or living in Taiwan or in contacts of persons coming from Taiwan.

The World Health Organization recommends that contact between those infected and other children should be limited as much as possible. Infected children must be kept away from school and other public places and should be kept home until all symptoms and signs of HFMD have completely resolved. A high level of hygiene in all schools, pre-schools, hospitals and public places is essential. Children with early signs of complications should be admitted to hospital as soon as possible.

Singapore

A Singaporean boy aged two and a half years died on 25 June following HFMD complicated by encephalitis. The boy had no recent travel history to Taiwan. Laboratory tests for enteroviruses are being carried out. No enterovirus 71 infection has been detected in Singapore this year.

Hong Kong

No cases of the severe form of enterovirus 71 (EV-71) have been confirmed since the Department of Health, Hong Kong introduced a surveillance system in mid-June to monitor HFMD. To 21 July 1998, 19 cases of EV-71 had been confirmed and 11 were suspected pending laboratory confirmation. All patients have recovered and been discharged.

Hand, Foot and Mouth Disease

Hand, foot and mouth disease is a common childhood illness that occurs worldwide, both as individual cases and in outbreaks. It is usually a mild illness characterised by fever, sores in the mouth, and a rash with blisters. The illness usually begins with a mild fever and malaise or fussiness in infants. One or two days after the fever begins, sores develop in the mouth. The skin rash develops over one to two days, with flat or raised red spots, some with blisters. The rash is usually located on the palms of the hands and soles of the feet. It may also appear on the buttocks. A person with HFMD may have only the rash or mouth ulcers.

The most common cause of HFMD is infection with coxsackievirus A16 (CA16), a member of the enterovirus group of viruses. There are usually no complications of HFMD caused by CA16 infection, although viral meningitis may occasionally occur. A second, less common cause of HFMD is infection with EV71. In addition to HFMD, EV71 may also cause viral meningitis, encephalitis, or a poliomyelitis-like paralysis. EV71 meningitis or encephalitis may occasionally be fatal.

Hand, foot and mouth disease is moderately contagious. The enteroviruses that cause HFMD are not spread by airborne transmission or contaminated food or water. Infection is spread from person to person by direct contact with nose and throat secretions or the stool of infected persons. A person is most contagious during the first week of the illness. The usual period from infection to onset of symptoms is 3 to 7 days.

Currently, no specific treatment is available for CA16, EV71, or other enterovirus infections. Treatment of mild cases of HFMD is symptomatic, given to provide relief from fever, aches, or pain from mouth ulcers. Children with meningitis or encephalitis are usually hospitalised.

Link to previous outbreaks

In 1997 more than 600 children were admitted to hospital and 30 died following an outbreak of HFMD in Sarawak, Malaysia.^{1,2} The complications and mortality associated with the HFMD outbreak were severe and unusual. Several viruses were identified, most commonly EV71 and adenovirus. From July to September 1997 three deaths were recorded in young children associated with HFMD in Osaka City, Japan. EV71 was isolated from a stool specimen from one of these cases.

The clinical and epidemiological features of the current outbreak in Taiwan and the previous outbreaks in Malaysia and Japan are similar, suggesting that the same aetiological agent (or agents) is involved. Each of these outbreaks has been associated with the isolation of EV71 suggesting that this is the causative agent. The association between EV71 and HFMD is well established and severe clinical manifestations and deaths have been documented

in the past. However, conclusive evidence that EV71 is the causative agent is not yet available.

Editorial note

Reports of EV71 are received in Australia from time to time and several outbreaks have been reported. In 1986 an outbreak amongst infants and young children occurred in southeastern Australia.³ A large number of cases of HFMD were reported in the community whilst severe disease including central nervous system involvement was also a feature in some cases. The Virus and Serology Laboratory Reporting Scheme, LabVISE collects data from sentinel laboratories on enteroviruses including EV71. No reports of this virus have been made to LabVISE since

1995 when 34 reports were received, mostly in the winter months.

The outbreak in Taiwan now appears to be easing. Investigations are continuing to definitively identify the causative agent. Whilst there is some risk that travellers to Taiwan may be exposed to and possibly infected by the agent of this disease this is very small. Travellers should observe the advice given by the World Health Organization and avoid contact with infected children.

1. Overseas Briefs. *Comm Dis Intell.* 1997;21:188.
2. Overseas Briefs. *Comm Dis Intell.* 1997;21:204.
3. Gilbert G, Dickson K, Waters M et al. Outbreak of enterovirus 71 infection in Victoria, Australia, with a high incidence of neurologic involvement. *Paediatr Infect Dis J.* 1998;7:484-488.

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