



衛生防護中心
Centre for Health Protection

Scientific Committee on Enteric Infections and Foodborne Diseases

Strategies for the Prevention and Control of EV71 Infection in Hong Kong

Purpose

This is a second paper on EV71 to be discussed at the Scientific Committee on Enteric Infections and Foodborne diseases to define the strategies for the prevention and control of EV71 infection in Hong Kong. The epidemiology and current surveillance and control measures have been discussed on 18 October 2004 in paper 5/2004.

Rationale and Objectives

2. EV71 is an emerging concern in South East Asia and the Western Pacific. Since 1997, several large regional epidemics of EV71 infection have occurred, the first being reported in Malaysia (Sarawak) in 1997, followed by outbreaks in Taiwan, Australia (Perth), and Singapore etc. While EV71 infection often presents with hand-foot-mouth syndrome, the infection is also associated with neurological complications, typically viral encephalitis. During the major outbreaks of hand-foot-mouth diseases in the neighbouring countries, numerous cases of brainstem encephalitis associated with pulmonary oedema with a high case-fatality rate were also observed.

3. Few countries have developed EV71-specific prevention and control strategies. Hence, we took reference from infectious disease strategies from major health authorities, reviewed the local epidemiology of EV71 infections, assessed the knowledge gaps about the disease, and incorporated Members' views to develop a strategy for Hong Kong.



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4. We consider that the objectives of this strategy should include the following:

- (a) To establish the prevalence of the EV71 infection in local population, especially children;
- (b) To establish and promulgate clinical management guidelines for identifying and managing hand-foot-mouth diseases with major, especially neurological and myocardial complications;
- (c) To develop contingency plans for widespread hand-foot-mouth disease outbreaks or epidemics associated with EV71 infections;
- (d) To enhance awareness especially among the parents, workers and carers of young children regarding hand-foot-mouth diseases as well as the relevant preventive and management measures;
- (e) To monitor EV71 outbreaks in neighbouring regions;
- (f) To encourage applied research on elucidating the pathogenesis and prognostic factors in relation to EV71 infections, as well as the roles of vaccine use against EV71.

Recommended Strategies

5. To this end, we further propose to adopt the following key elements: surveillance and laboratory support; clinical management and infection control in healthcare settings; emergency preparedness; health education and capacity building; and applied research.

Surveillance and laboratory support

6. Experience from Taiwan and Singapore showed that EV71 infections are often associated with widespread hand-foot-mouth disease outbreaks in the community. Hence, it is important to maintain sensitive surveillance of hand-foot-mouth disease for early detection of possible EV71 outbreaks. At present, surveillance of HFMD in Hong Kong is mainly performed through the monitoring of institutional outbreaks as well as the physician-based sentinel surveillance. Laboratory and hospital discharge surveillance provides confirmatory and disease burden data, usually with a time lag of one to several weeks. A new sentinel surveillance system based at childcare centres has been established in 2004 to provide indication on the spread of disease syndromes across these institutions. These systems should be maintained and constantly reviewed especially on the timeliness in detecting hand-foot-mouth disease outbreaks and be enhanced as necessary.

7. Since a wide range of enteroviruses can cause hand-foot-mouth diseases, it is crucial to provide timely laboratory support for the hand-foot-mouth disease surveillance systems. At present, real-time PCR for EV71 is used to support investigation of severe cases such as encephalitis and investigation of institutional outbreaks. As resources allowed, specimens

should be collected as far as possible to monitor the spectrum of causative agents for local hand-foot-mouth diseases.

Clinical management and infection control in healthcare settings

8. Early recognition of severe HFMD especially neurological complications, so as to provide appropriate management is crucial for improved clinical outcome. To this end, clinical and referral guidelines should be developed for primary care physicians to facilitate early recognition of complicated cases and timely referral for hospital treatment. Likewise, clinical protocols including indications for hospital admission should be made readily available to staff of Accident and Emergency Departments (AED). Relevant hospital infection control measures and treatment protocols for complicated cases such as meningoencephalitis and myocarditis should also be updated regularly.

Emergency preparedness

9. Epidemic preparedness plans for HFMD are useful in providing a framework for monitoring of the outbreak situation, instigation of prompt public health actions, and communication with the media, physicians, and preschool centres. We recommend that Hong Kong should develop a locally applicable contingency plan for control of epidemics of neuroinvasive or severe EV71 infections, drawing from the experience of Singapore and Taiwan, for example.

10. Key elements that need to be included are protocols for stepped-up surveillance and case investigation, mobilization of clinical and intensive care facilities, enhanced laboratory support, data management, outbreak control measures, and risk communication. Contingency plans should also be developed in collaboration with the education and social welfare sectors as regards to management of schools and child care centres in case of the occurrence of territory wide hand-foot-mouth diseases associated with EV71 infections.

Health education and capacity building

11. Health education resources on the prevention of HFMD should be regularly updated and disseminated to the management of relevant institutions and facilities such as preschools, swimming pools, and children's playrooms to ensure proper disinfection and cleaning of toys and the environment. Parents should be among the target groups for enhancing awareness.

12. Since outbreaks of HFMD often occur in the kindergarten and child care centre settings, it is important to provide regular training on infection control to staff of these institutions. Staff should also be educated on the signs

and symptoms of HFMD. As circumstances allow, there should be protocols in the institutions for screening of symptomatic children, advising on medical consultation and excluding sick children from schools. There should be adequate isolation facilities in case sick children need to be kept in the institutions for practical reasons. Outbreaks should be promptly reported to the health authority for timely investigation and control. It is desirable for kindergartens or child care centres to designate staff to coordinate and monitor the implementation of infection control measures.

Applied research

13. There are knowledge gaps in relation to the pathogenesis and prognostic factors of EV71 infections including genetic determinants for virulence of EV71. Molecular phylogenetic studies overseas have not yet been able to identify an association between a particular viral genotype and the development of fatal brainstem encephalitis. Seroepidemiological studies should be considered to define the local EV71 prevalence and delineate the risk factors of infection. We encourage the local academic community to contribute to applied research on these areas, as well as the roles of vaccine use against EV71.

Conclusions

14. In summary, we propose the following strategies for the prevention and control of EV71 infection in Hong Kong:

- Surveillance and laboratory support
 - Maintain and enhance surveillance systems for timely detection of outbreaks of hand-foot-mouth diseases associated with EV71 infections
 - Conduct laboratory studies for monitoring the spectrum of causative agents of local hand-foot-mouth diseases
- Clinical management and infection control in healthcare settings
 - Disseminate clinical and referral guidelines for primary care physicians
 - Update and disseminate clinical protocols for AED staff and for ward management of complicated cases
- Emergency preparedness
 - Develop emergency response plans for local community wide hand-foot-mouth disease outbreaks associated with neuro-invasive or severe EV71 infections
 - Develop contingency plans among schools, child care centres, or other institutions or agencies that care for young children for community wide hand-foot-mouth diseases epidemics associated with EV71 infections
- Health education and capacity building

- Update and disseminate guidelines on EV71 prevention to the management of the relevant institutions and leisure facilities
- Conduct training on infection control for staff of preschools
- Encourage the assignment of designated staff to coordinate and monitor implementation of infection control measures at kindergartens and child care centres
- Applied research
 - Encourage research on establishing genetic determinants of virulence, pathogenesis and prognostic factors of EV71
 - Encourage seroepidemiological studies to assess local prevalence and risk factors of EV71 infection especially among children

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