



WEEKLY EPIDEMIOLOGICAL REPORT

A publication of the Epidemiological Unit,

Ministry of Healthcare & Nutrition

231, de Saram Place, Colombo 01000, Sri Lanka

Tele: (+94-011) 2695112, Fax: (+94,011) 2696583, E-Mail: epidunit@slt.net.lk

Epidemiologist: (+94-011) 2681548, E-mail: chepid@slt.net.lk

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HAND-FOOT-and-MOUTH DISEASE: FACT SHEET

Paediatricians from Lady Ridgeway Children's Hospital (LRH) have reported an increase in the number of Hand-foot-and-mouth disease cases during March 2007. In fact, the non-pruritic vesicular lesions have been seen on the buttocks of the affected children (sometimes called 'Hand-foot-mouth-butt disease') An epidemiological investigation has been launched by the Epidemiology Unit into the matter. Hand-foot-and-mouth disease is currently not a notifiable disease in Sri Lanka. This article describes the epidemiology of the disease.

Hand-foot-and-mouth disease (HFMD) is mainly an illness of infants and children. It is caused by a group of enteroviruses. It is different to hoof-and-mouth disease in cattle, sheep and swine mainly due to the causative agent.

Infectious Agent

Several different viruses act as causative agent for Hand-foot-and-mouth disease. The main aetiological agent is Coxsackie Group A type 16. Coxsackievirus is a subgroup of the enteroviruses and is a member of the family Picornaviridae. Coxsackievirus A types 4, 5, 9 and 10 are also known to cause Hand-foot-and-mouth disease occasionally. Enterovirus 71 and Coxsackie

virus types 2 and 5 have also been implicated in cases as well as outbreaks of Hand-foot-and-mouth disease.

Reservoir

Humans are the only known reservoir for Coxsackie virus.

Occurrence

The disease occurs worldwide both sporadically and in epidemics. It is seen mainly among children under 10 years of age. However, adult cases are not unusual and young adults also are affected.

In Sri Lanka, the most recent period with relatively higher incidence was in 2005 when 75 cases were reported for the year. Outbreaks have been reported from Singapore, Malaysia and Taiwan recently.

Mode of Transmission

Hand-foot-and-mouth disease is moderately contagious. The disease spreads through direct contact with aerosol droplets, nasal discharge, throat secretions, faeces and vesicular fluids of infected persons. It can also spread through indirect contact with articles contaminated by secretions of infected patients. Reliable evidence of spread via pets, insects, water and food are not available.

Incubation Period

Incubation period of Hand-foot-and-mouth disease usually ranges from 3-5 days.

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Period of Communicability

An infected person is most contagious during the first week or the acute phase of the illness. However this period of communicability may be longer, since the virus persists in stools for several weeks.

Immunity

Infection results in immunity for the specific virus that caused the infection, but a second infection is possible from a different strain of the virus of the same enterovirus family.

Clinical Features

Hand-foot-and-mouth disease is an acute self-limiting disease characterised by fever, diffuse oral lesions and a vesicular skin rash. The disease begins with a mild fever, loss of appetite, malaise and frequently a sore throat. One or two days after the onset of fever, small red spots occur in the mouth, which develop into blisters and then they often become ulcers. These lesions are usually found on the buccal surface of the cheeks, gums and sides of the tongue.

Simultaneously, a non-pruritic vesicular rash develops over a day or two. This rash occurs mainly on the palms, fingers and soles of the feet. Occasionally, lesions may appear on the back of the elbows, front of the knees and on the buttocks. This may be the reason for the nomenclature 'Hand-foot-mouth-butt disease'. The papulovesicular lesions may persist from 7 to 10 days. A person with Hand-foot-and-mouth disease may have only the rash or only the mouth ulcers. The illness is typically mild and it usually resolves in 7-10 days.

Complications

Complications are rare. They include aseptic meningitis, encephalitis, paralytic disease and viral myocarditis. The danger symptoms and signs are neck pain, drowsiness, vomiting, persistently high fever and difficulty in

breathing and signs of dehydration. Deaths from Hand-foot-and-mouth disease have been reported. Fifty deaths were reported from Malaysia in 1997 and 78 from Taiwan in 1998. The victims were mainly young children.

Diagnosis

The diagnosis is mainly clinical based on the appearance of the vesicular rash on the hands, feet and mouth in a child with a mild febrile illness. However oral lesions should be differentiated from stomatitis caused by herpes simplex virus, which are deeper, larger and more painful ulcerative lesions and commonly located in the anterior part of the mouth.

Laboratory Diagnosis

Specific laboratory tests are available to confirm the diagnosis. Stools are the most important specimen for virus isolation, as the virus content in stools is high and the period of viral excretion is long. Other specimens such as CSF and swabs from oral ulcers or vesicular skin lesions sent in appropriate transport medium (Hank's virus transport medium) can also be used for virus isolation.

Treatment

There is no specific treatment for Hand-foot-and-mouth disease. Symptomatic treatment is given to provide relief from fever and pain from mouth ulcers. Salt water mouth rinses (half-teaspoon of salt to one glass of warm water) may be soothing if the child is able to rinse without swallowing. Although swallowing may be painful, the child should be encouraged to take adequate quantities of fluids to avoid dehydration.

Methods of Control

(1) General Preventive Measures

Person to person contact should be restricted if possible and ventilation should be improved. Hand washing and other general personal hygienic measures should be promoted.

(2) Control of Infected Persons and Contacts

Infected children should be kept away from childcare centres, schools and other crowded public places during the first few days of the illness. Nose and throat discharges of infected persons should be disinfected. Careful attention should be paid to prompt hand washing especially after diaper changes and when handling discharges, faeces and soiled articles. Quarantine is not recommended. Specific immunization against the disease is not available.

Hand-Foot-and-Mouth Disease

- Is caused by one of several types of viruses.
- Anyone can get Hand-foot-and-mouth disease, but mainly children under 10 years are affected.
- Usually spreads through person-to-person contact.
- The symptoms are similar to a common cold with oral ulcers and a rash.
- There is no specific treatment other than symptomatic relief measures.

Table 1: Vaccine-preventable diseases & AFP

3rd - 9th March 2007 (10th Week)

Disease	No. of Cases by Province								Number of cases during current week in 2007	Number of cases during same week in 2006	Total number of cases to date in 2007	Total number of cases to date in 2006	Difference between the number of cases to date between 2007 & 2006
	W	C	S	NE	NW	NC	U	Sab					
Acute Flaccid Paralysis	01 GM=1	00	00	00	01 KR=1	00	00	00	02	06	16	36	-55.5%
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00.0%
Measles	00	01 NE=1	00	00	00	00	00	00	01	00	10	04	150.0%
Tetanus	00	00	00	00	00	00	00	00	00	01	09	11	-18.2%
Whooping Cough	01 GM=1	00	01 MT=1	00	00	00	00	00	02	01	10	14	-28.6%
Tuberculosis	57	00	06	17	22	25	00	97	224	309	1899	1998	-4.9%

Table 2: Diseases under Special Surveillance

3rd - 9th March 2007 (10th Week)

Disease	No. of Cases by Province								Number of cases during current week in 2007	Number of cases during same week in 2006	Total number of cases to date in 2007	Total number of cases to date in 2006	Difference between the number of cases to date between 2007 & 2006
	W	C	S	NE	NW	NC	U	Sab					
DF/DHF*	35	08	04	05	07	03	01	12	75	85	1333	2221	-40.0%
Encephalitis	02 GM=2	01 KD=1	00	01 BT=1	00	00	00	01 KG=1	05	01	55	23	+139.1%
Human Rabies	00	00	00	00	00	00	00	01 RP=1	01	01	18	16	+12.5%

Table 3: Newly introduced Notifiable Diseases

3rd - 9th March 2007 (10th Week)

Disease	No. of Cases by Province								Number of cases during current week in 2007	Total number of cases to date in 2007
	W	C	S	NE	NW	NC	U	Sab		
Chickenpox	20	10	11	12	06	02	02	11	74	554
Meningitis	00	02 MT=2	00	00	00	00	03 BD=3	02 KG=2	07	46
Mumps	06 CB=2 GM=2 KL=2	00	00	01 TR=1	03 KR=3	00	04 BD=4	05 KG=5	19	134

*DF / DHF refers to Dengue Fever / Dengue Haemorrhagic Fever.
 NA= Not Available.
Sources:
Weekly Return of Communicable Diseases:
 Diphtheria, Measles, Tetanus, Whooping Cough, Human Rabies, Dengue Haemorrhagic Fever, Japanese Encephalitis, Chickenpox, Meningitis, Mumps.
Special Surveillance:
 Acute Flaccid Paralysis.
National Control Program for Tuberculosis and Chest Diseases:
 Tuberculosis.
 Details by districts are given in Table 5.

Provinces: W=Western, C=Central, S=Southern, NE=North & East, NC=North Central, NW=North Western, U=Uva, Sab=Sabaragamuwa.
DPDHS Divisions: CB=Colombo, GM=Gampaha, KL=Kalutara, KD=Kandy, ML=Matale, NE=Nuwara Eliya, GL=Galle, HB=Hambantota, MT=Matara, JF=Jaffna, KN=Killinochchi, MN=Mannar, VA=Vavuniya, MU=Mullaitivu, BT=Batticaloa, AM=Ampara, TR=Trincomalee, KM=Kalmunai, KR=Kurunegala, PU=Puttalam, AP=Anuradhapura, PO=Polonnaruwa, BD=Badulla, MO=Moneragala, RP=Ratnapura, KG=Kegalle.

Table 4: Laboratory Surveillance of Dengue Fever

3rd - 9th March 2007 (10th Week)

Samples	Number tested	Number positive *	Serotypes				
			D ₁	D ₂	D ₃	D ₄	Negative
Number for current week	05	00	00	00	00	00	00
Total number to date in 2007	201	09	00	02	02	00	04

Source: Genetech Molecular Diagnostics & School of Gene Technology, Colombo.

* Not all positives are subjected to serotyping.

Table 5: Selected notifiable diseases reported by Medical Officers of Health
3rd - 9th March 2007 (10th Week)

DPDHS Division	Dengue Fever / DHF*		Dysentery		Encephalitis		Enteric Fever		Food Poisoning		Leptospirosis		Typhus Fever		Viral Hepatitis		Returns Received Timely**
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	
Colombo	19	402	04	38	00	03	00	20	13	20	00	25	00	01	01	10	93
Gampaha	08	146	05	45	02	07	27	42	01	02	09	32	00	06	01	29	93
Kalutara	08	99	05	61	00	01	03	14	00	10	03	23	00	01	04	22	91
Kandy	07	171	00	41	01	02	01	17	02	04	01	26	01	19	13	73	82
Matale	01	48	02	47	00	03	00	04	03	03	00	13	00	02	05	41	100
Nuwara Eliya	00	17	05	37	00	00	03	24	24	366	00	05	00	15	06	63	86
Galle	02	41	03	25	00	04	00	04	00	03	00	15	00	12	00	06	81
Hambantota	00	15	00	12	00	00	00	06	00	01	00	13	00	14	00	05	100
Matara	02	41	00	53	00	02	00	12	00	01	06	36	10	76	02	06	100
Jaffna	00	04	00	23	00	02	00	150	00	00	00	00	00	67	00	05	00
Kilinochchi	00	00	00	00	00	00	00	02	00	00	00	00	02	02	00	02	50
Mannar	00	07	00	11	00	00	05	29	00	00	00	00	00	00	01	04	75
Vavuniya	00	10	00	11	00	00	01	08	01	06	00	02	00	00	00	03	75
Mullaitivu	00	00	00	04	00	02	00	08	00	00	00	00	00	00	00	00	40
Batticaloa	00	04	00	38	01	03	00	09	00	02	00	00	00	00	00	92	73
Ampara	00	01	02	22	00	00	00	03	00	00	00	00	00	00	02	07	29
Trincomalee	05	23	01	19	00	01	01	09	00	17	00	01	00	00	01	08	100
Kurunegala	06	101	02	57	00	00	01	15	00	04	00	09	01	22	00	07	83
Puttalam	01	58	00	20	00	09	01	15	00	00	00	04	00	00	01	26	89
Anuradhapura	02	14	01	23	00	05	00	12	00	01	00	09	01	11	03	17	84
Polonnaruwa	01	19	01	40	00	02	00	03	00	00	00	11	00	00	00	03	100
Badulla	01	11	04	89	00	00	03	20	00	08	01	15	02	23	02	53	100
Monaragala	00	05	02	48	00	00	00	10	00	00	00	14	00	14	00	05	100
Ratnapura	04	40	02	108	00	07	01	19	00	05	00	16	00	05	00	20	31
Kegalle	08	55	06	34	01	02	01	09	00	00	04	24	00	07	03	14	82
Kalmunai	00	01	03	26	00	00	00	05	00	00	00	00	00	00	06	57	67
SRI LANKA	75	1333	48	932	05	55	48	469	44	453	24	293	17	297	51	578	80

Source: Weekly Returns of Communicable Diseases (WRCD).

*Dengue Fever / DHF refers to Dengue Fever / Dengue Haemorrhagic Fever.

**Timely refers to returns received on or before 17 Mar. 2007. Total number of reporting units = 290. Number of reporting units data provided for the current week: 232.

A = Cases reported during the current week. B = Cumulative cases for the year.

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ON STATE SERVICE

Dr. M. R. N. ABEYSINGHE
EPIDEMIOLOGIST
EPIDEMIOLOGICAL UNIT
231, DE SARAM PLACE
COLOMBO 10