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CIRCULAR TO PARENTS

PREVENTION OF HAND, FOOT AND MOUTH DISEASE (HFMD)

Dear Parents,

1. Hand, foot and mouth disease (HFMD) is a common infectious disease caused by a group of enteroviruses. It occus most often in children, but can also occur in adolescents and occasionally in adults.

2. A health advisory on prevention and control of HFMD has been formulated by the Armed Forces Medical Services and a copy of the same is annexed.

3. You are requested to ensure all the preventive measures mentioned in the annexed guidelines for prevention and spread of the disease.

4. The children diagnosed with the HFMD may require 07 days of home isolation with medical advice of doctor.

Regards,

(Amita Gupta)
Principal

HAND, FOOT AND MOUTH DISEASE

1. **Introduction**. Hand, foot and mouth disease (HFMD) is a common infectious disease caused by a group of enteroviruses, including Coxsackievirus A16 (CA16) and Enterovirus 71 (EV71). It occurs most often in children, but can also occur in adolescents and occasionally in adults. **In most cases, the disease is mild and self limiting**; however, more severe symptoms such as meningitis, encephalitis and polio-like paralysis may occur.

It is often confused with foot-and-mouth (also called hoof-and-mouth) disease, a disease of cattle, sheep and swine; however, the two diseases are not related they are caused by different viruses. Humans do not get the animal disease, and animals do not get the human disease.

2. **Epidemiology**.

(a) Agent. The major etiological agents that cause HFMD are the human enteroviruses species A (HEV-A), particularly **Coxsackievirus A16** (CA16) and **Enterovirus 71 (EV71)**. These belong to the genus Enterovirus within the family Picornaviridae. While all these viruses can cause mild disease in children, EV71 has been associated with neurological disease and mortality.

(b) Transmission. Infection is spread from person to person by **direct contact** with infectious virus which is found in the nose and throat secretions, saliva, blister fluid, and stool of infected persons. The virus is most often spread by persons with unwashed, virus contaminated hands and by contact with virus contaminated surfaces. HFMD is not transmitted to/ transmitted from pets or other animals.

(c) Infectivity. It is moderately contagious. **Infected persons are most contagious during the first week of the illness**. They can still pass the infection to other people even though he/ she appears well. Some persons who are infected and excreting the virus, including most adults, may have no symptoms. **The disease typically occurs in small epidemics in nursery schools or kindergartens, usually during the summer and autumn months**.

(d) Incubation period is normally **3-7 days**.

(e) Age group. HFMD occurs **mainly in children under 10 years of age**, but it can occur in adults too. Everyone is at risk of acquiring infection with viruses that cause HFMD, but not everyone who gets infected becomes ill. Infants, children and adolescents are more likely to be susceptible to infection and illness from these viruses because they are less likely to be immune to them than adults. Many adults have developed protective antibodies due to previous exposures to the viruses. Infection results in immunity to the specific virus, but a second episode of HFMD may occur following infection with a different member of the enterovirus group.

3. **Diagnosis**. HFMD is one of the many infections that result in mouth sores. However, health care providers can usually tell the difference between HFMD and other causes of mouth sores by considering the patient's age, the symptoms reported by the patient or parent, and the appearance of the rash and/ or sores. Samples from the throat or stool may be sent to a laboratory to test for the virus involved in causing the illness.

4. **Clinical features**. In most instances, the acute enteroviral infection is a benign, self-limiting illness. HFMD is characterized by fever, sores in the mouth, and a skin rash. It begins with mild fever, poor appetite, malaise, and often a sore throat. One or two days after the fever begins, painful sores develop in the mouth. They begin as small red spots that blister and then often become ulcers. The sores are usually located on the tongue, gums, and inside of the cheeks. The **chief symptoms** are:

(a) Fever

(b) Sore throat

(c) Ulcers in the throat, mouth and tongue

(d) Headache

(e) Rash with vesicles (small blisters, 3-7 mm) on hands, feet and diaper area. The vesicles are typically on the palmar side of the hands, the sole side of the feet and are very characteristic in appearance. The skin rash develops over 1 to 2 days, with flat or raised red spots and sometimes with blisters. The skin rash does not itch and is usually on the palms of the hands and soles of the feet. It may also appear on the buttocks or genitalia. A person with HFMD may have only the rash or only the mouth sores. The skin lesions heal spontaneously without scarring.

(f) Loss of appetite

Severe cases are defined as having at least two of the following clinical manifestations:

(a) Continuous high fever.

(b) Weakness, vomiting, irritability, etc.

(c) Abnormal White Blood Cell count (WBC).

(d) High blood glucose level.

(e) Poor blood circulation of limbs.

5. **Differential diagnosis**. The differential diagnoses for HFMD include herpetic gingivo stomatitis, aphthous stomatitis, scabies infestation, chickenpox (varicella), measles and rubella.

6. **Management**. Clinical management of HFMD is largely supportive in nature and there are no specific antivirals. Fluid intake should be emphasized to prevent dehydration.

In most cases, HFMD is a self-limiting illness, with the majority of children recovering spontaneously with symptomatic treatment. Only a small proportion of children with HFMD develop neurological involvement, which may further progress to potentially fatal cardiopulmonary failure.

Since children at risk of severe systemic complications often present with subtle clinical features during the early phase of the illness, yet later deteriorate very rapidly with a fulminant disease course. Thus, early recognition and timely intervention is the key to reducing acute morbidity and mortality associated with severe presentation of this clinical syndrome.

7. **Prevention and Control Measures**. Preventive measures include:

(a) Wash hands often with soap and water, especially after changing diapers, using the toilet and before serving or eating food.

(b) Covering the mouth and nose when coughing or sneezing.

(c) Children should be kept away from crowded public places (such as schools, preschools, play groups, markets and public transport) if they show signs of infection.

(d) Cleaning dirty surfaces and soiled items, including toys, first with soap and water and then disinfecting them by cleansing with a solution of chlorine bleach (made by adding 1 tablespoon of bleach to 4 cups of water; larger quantities can be made by adding ¼ cup of bleach to 1 gallon [16 cups] of water).

(e) Avoiding close contact (kissing, hugging, sharing eating utensils and cups, etc.) with persons with HFMD.

8. **Vaccination**. No vaccine is available to protect against HFMD.

9. **Complications**. Hand, foot and mouth disease is usually not serious. Nearly all get better in 7 - 10 days with no or minimal medical treatment. Complications from HFMD are rare and include are dehydration, fingernail/ toenail loss, viral (aseptic) meningitis, encephalitis or paralysis.

10. **Advice for parents**. Parents are advised to consult a doctor early if their child has symptoms of HFMD. They should also be alert to any change in their child's normal behaviour, e.g. irritation and sleepiness. If they refuse to eat or drink, have persistent vomiting or drowsiness, parents should take their child immediately to healthcare facility.