

ORIGINAL ARTICLE

A Clinico Epidemiological Study of Hand Foot and Mouth Disease in a Tertiary Care Hospital of Tribal Area

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Abstract

Background: Hand foot and Mouth Disease (HFMD) is a highly contagious viral infection characterized by a typical maculopapular or vesicular eruptions on the hands and feet and in the oral cavity. It affects predominantly children and/or immune-compromised adults and follows a benign self-limiting course.

Methods: This study is to find the clinico-epidemiological data of HFMD for early diagnosis and treatment. Because it has the potential to reach epidemic levels, general practitioners and pediatricians need to be aware of it. A prospective observational study is conducted from Jan 2018 to Dec 2018. Consecutive cases clinically diagnosed as HFMD, in the Tertiary care hospital in Tribal area. **Results:** We report the clinic-epidemiological study of 60 cases of HFMD, their benign course. Risk factors for HFMD include hygiene, age, gender, and social contacts. All the cases were in the mild form. There were no symptoms and signs of the primary immunodeficiency disorders such as recurrent or atypical microbial infections, and they were not on immunosuppressive medication. **Conclusion:** it can be concluded that hand foot and mouth disease is now commonly seen in children and becoming one of the important childhood diseases. Although in most of the cases it does not have complications however, all the dentists, pediatricians and dermatologists must be aware of the clinical features and possible complications. Appropriate supportive treatment should be ensured to prevent any adverse outcomes.

Keywords: Hand foot and Mouth disease, Coxsackie virus, EV-A71, CV-A16, children, epidemiology

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Introduction

Hand foot and Mouth Disease (HFMD) is a viral infection characterized by maculopapular or vesicular eruptions on hands and feet and in the oral cavity, it is highly contagious. It affects predominantly children and/or immunocompromised adults and follows a benign self-limiting course. Hand, foot and mouth disease (HFMD) has become an endemic childhood disease in East and Southeast Asia^[1]. Typically, the infection is self-limiting and mild with fever, malaise, rashes on the Volar regions of the hands and feet, herpangina and difficulty in eating and drinking more rarely, the infection can lead to complications of the nervous or cardiopulmonary systems. Hand, foot and mouth disease (HFMD) is a widespread pediatric disease caused primarily by human enterovirus 71 (EV-A71) and Coxsackievirus A16 (CV-

A16) and recently coxsackieviruses A6 and A10 have been included. Differences in the course of HFMD have been observed depending on the virus type, age, and immune status^[2]. Most cases occur during the summer and early autumn^[3]. The skin lesions heal spontaneously without scarring. Sometimes herpangina and difficulty eating and drinking more rarely, the infection can lead to complications of the nervous or cardiopulmonary systems. Such cases can result in long-term sequelae such as cognitive and motor disorders^[4, 5] or death, usually from pulmonary edema or brainstem encephalitis.^[6]

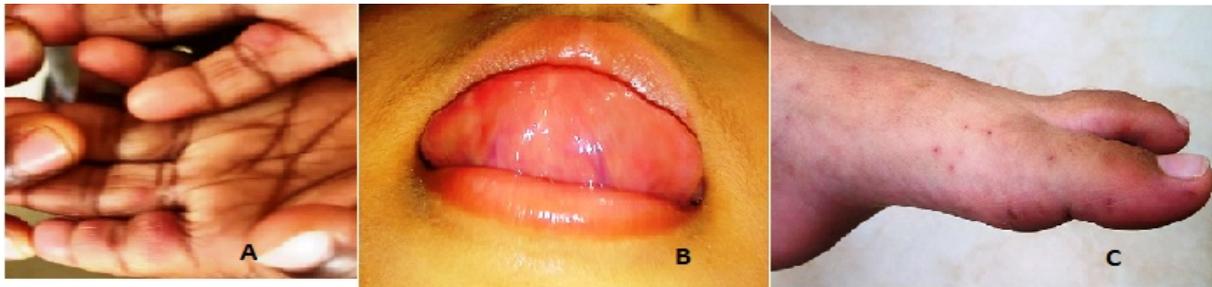
Materials and Methods

A prospective observational study is conducted from Jan 2018 to Dec 2018 in Rajiv Gandhi Institute of Medical Sciences, Adilabad Tertiary Care Hospital in Tribal area. Institutional

Ethical committee permission was obtained for the study. Written consent was obtained from all the patients involved in the study. Consecutive cases clinically diagnosed as HFMD, in the pediatric age group, attending the Dermatology outpatient department (OPD) were taken up. This study is to review the clinico-epidemiological data for HFMD for early diagnosis and treatment. Because it has the potential to reach epidemic levels, general practitioners and pediatricians need to be aware of it. Inclusion Criteria: All clinically diagnosed cases of HFMD children were taken up for the study. Exclusion Criteria: Adult patients with similar symptoms, those not confirmed for HFMD.

A total of 60 cases were observed during an outbreak of HFMD. The youngest child among the cases studied was 1 month old and the oldest being 6 years of age. The infection predominantly affected children younger than 1 year (40%). Male 28(47%) to female 32(53%) ratio was almost 1:1 History of contact with similar cases were found in 8.3% (5) of cases. All 60 cases presented with both enanthema and exanthema either serially or simultaneously, of which 13.3% (8) cases were associated with secondary infection. All the cases were in the mild form. There were no symptoms and signs of the primary immunodeficiency disorders such as recurrent or atypical microbial infections, and they were not on immunosuppressive medication.

Results



A: hand Lesions B: Mouth lesions C: Foot lesions of Hand foot and mouth disease

Figure 1: Bar diagram showing age distribution of patients studied

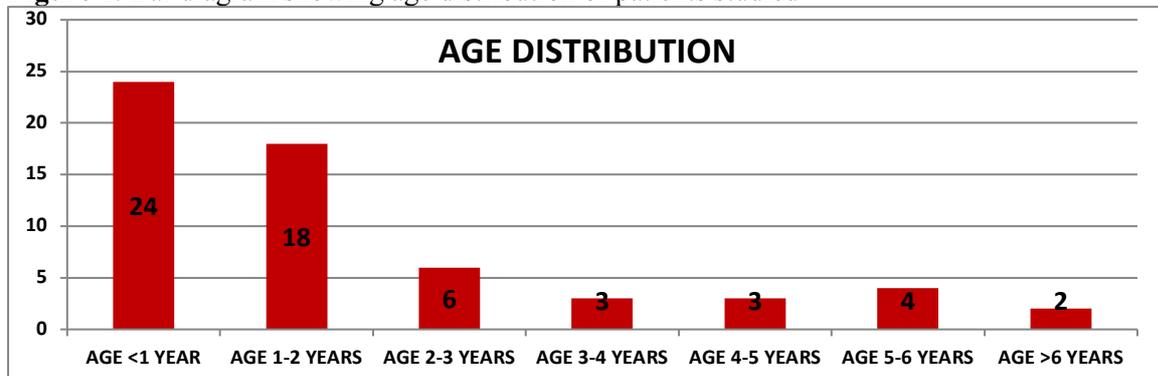


Figure 2: Pie diagram showing sex distribution

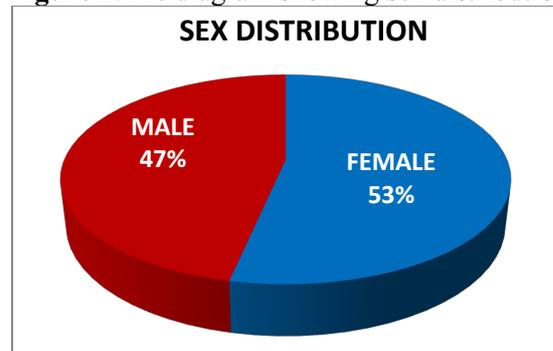
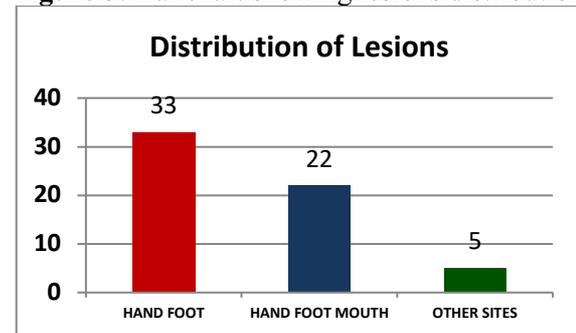


Figure 3: Bar chart showing lesions distribution



In this study, the number of cases in the Hand & foot 33(55%) group than, Hand foot mouth 22(36.7%) group than other sites 5(8.3%). In present study 8(13.3%) cases were associated with secondary infection.

Table 1: Frequency of sites involved

Site Involved	Frequency (N)	Percentage
Hand and foot	33	55.0
Hand, foot and Mouth	22	36.7
Other sites	5	8.3
Total	60	100

Table 2: HFMD associated with secondary infections

Secondary Infections	Frequency (n)	Percentage
Absent	52	86.7
Present	8	13.3
Total	60	100

Table 3: Presence or absence of contacts

Contacts	Frequency (n)	Percentage
Absent	55	91.7
Present	5	8.3
Total	60	100.0

Discussion

HFMD is also called as vesicular stomatitis is caused coxsackie virus. During the epidemics, the virus usually spreads by close contact after an incubation period of 3-6 days. The virus lodges initially in the buccal and ileal mucosa and then spread to the lymph nodes within 24 hours [7]. Viremia is rapid, with spread to the oral mucosa and skin. The appearance of oral lesions is in the form of erythematous macules that evolve in 2-3 mm vesicles on an erythematous base. The usual areas in the oral cavity affected are the palate, buccal mucosa, gingiva, lips, and tongue. The vesicles are rarely observed because they become eroded rapidly. The lesions are painful and drooling of saliva is commonly present and may interfere with mastication and feeding in infants and children. In our study 36% of cases, tongue involvement is reported [8]. After exposure, the incubation period for the virus is 4–6 days. A 1–2 days prodrome of fever, anorexia, and sore throat is followed by the development of 3–6mm diameter elongated, gray, thin-walled vesicles on a red or non-inflamed base. As the name

suggests, red papules and vesicles may erupt on the buttocks, trunk, face, arms, and legs, vesicles rapidly ulcerate to leave sharply margined erosions on a red base on the tongue, buccal mucosa and posterior pharynx. Although cutaneous and mucosal lesions may be completely asymptomatic, pruritus and burning can be severe. In severe cases, there may be cardiorespiratory and neurological involvement other complications include dehydration, meningoencephalitis, myocarditis, pulmonary edema, and death occasionally occurs in children with HFMD [7]. Complications mainly depend on the strain of the organism, age and immune status of the child. Out of all complications, dehydration is the most common. In children, hyperpyrexia and refusal of feeding due to painful erosions have been noted. It has to be treated with plenty of oral fluids, cold sponging, and treatment with antipyretics. In our study of HFMD, we could not find any major complications since this outbreak mostly is caused by the coxsackievirus A16 [9, 10]. It is a benign and most common strain whereas enterovirus 71 is a rare strain commonly associated with severe complications. Hence, early diagnosis and treatment along with monitoring for severe complication are mandatory because clinically we may not know the strain of the virus. Histopathologic findings of the lesions are those of an intraepidermal blister formed by vacuolar and reticular degeneration of keratinocytes similar to other viral blisters. Inclusion bodies and multinucleated giant cells are absent. HFMD is distinguished from herpangina by the distribution of the oral lesions and the presence of skin lesions. It is differentiated from erythema multiforme minor by the skin lesions, which are oval and gray, as opposed to targetoid lesions as in erythema multiforme [11]. HFMD usually requires no treatment except supportive care. Although the coxsackieviruses lack thymidine kinase, Acyclovir has anecdotally been reported to hasten resolution of the eruption in some cases has been reported [12]

Conclusion

Within the limitations of the present study, it can be concluded that hand foot and mouth disease is now commonly seen in children and becoming one of the important childhood

diseases. Although in most of the cases it does not have complications however, all the dentists, pediatricians and dermatologists must be aware of the clinical features and possible complications. Appropriate supportive treatment should be ensured to prevent any adverse outcomes.

Conflict of Interest: None declared

Source of Support: Nil

Ethical Permission: Obtained

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