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Original Research Article

Study the current scenario of hand foot mouth disease an Indian prospective

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ABSTRACT

Background: The hand-foot-mouth disease (HFMD) is an acute communicable disease, mostly affecting children under 5 years of age and caused by human enterovirus 71 (EV-A71) and coxsackievirus A16 (CV-A16). The usual incubation period is 3 to 7 days. Early symptoms are likely to be fever often followed by a sore throat followed by loss of appetite and general malaise. Aim and objectives was to study the trend of hand foot and mouth disease in a private hospital in Uttarakhand over 5 successive years.
Methods: This cross-sectional study was carried among 297 cases of HFMD newborn screened at pediatrics department of Sahota Super-specialty hospital, Kashipur, Uttarakhand during year 2015 to 2019 after ethical clearance of institutional ethical committee. Diagnosis is coded with ICD-10. SPSS version 20 was used to calculate frequencies and percentiles.
Results: Almost 29 cases of HMFD were picked in 2015, 32 cases in 2016, 43 cases in 2017, 81 cases in 2018, 112 in 2019. Fever observed in 86% cases. Neurological complications were observed in 9 (3%) cases, pneumonitis in 14 (4.7%) cases, cardiomyopathy observed in 3 (<1%) case. One death was reported.
Conclusions: It is vital to screen patients with HFMD for these abnormal clinical presentations, allowing timely initiation of appropriate interventions to reduce the mortality. Increased awareness about vaccination in a developing nation like India and vaccination program at the grass root levels have eradicated certain lethal diseases.

Keywords: Complication, Coxsackievirus infection, Fever, Foot and mouth disease, Hand, Rash

INTRODUCTION

The hand–foot–mouth disease (HFMD) is an acute communicable disease, mostly affecting children under 5 years of age and caused by human enterovirus 71 (EV-A71) and coxsackievirus A16 (CV-A16).[1,2] The usual incubation period is 3 to 7 days. Early symptoms are likely to be fever often followed by a sore throat followed by loss of appetite and general malaise. Between 1 and 2 days after the onset of fever, painful sores appear in the mouth or throat. A rash also seen on the hands, feet, mouth, tongue, inside of the cheeks and also the buttocks, knees and elbow. Oral lesions appear as vesicles, which rapidly ulcerate producing multiple small superficial ulcers with erythematous halos. The ulcers are usually seen on the tongue, palate, buccal mucosa, gums and lips. Oral ulcers cause discomfort, making oral feeding difficult.[3,4] Experimental studies have indicated that although this disease is self-limiting and the clinical symptoms are mild, such as rashes or mucosal herpes, severe complications, such as meningitis or encephalitis, occasionally occur. These can result in death, particularly

among young children under 5 years of age.[5] Asian countries, including India, Singapore and South Korea, have also reported cases of HFMD.[6-9] Present study was conducted with the objective to study the trend of hand foot and mouth disease in a private hospital in Uttarakhand over 5 successive years.

METHODS

This cross-sectional study was carried among 297 cases of HFMD newborn screened at pediatrics department of Sahota Super-specialty hospital, Kashipur, Uttarakhand during year 2015 to 2019 after ethical clearance of institutional ethical committee. Inclusion criteria for participants was under 10 years of age, close contacts, elderly in household and exclusion criteria was whose parents were not willing to participate in the study. Diagnosis is coded with ICD-10. Statistical analysis was done with the SPSS version 20 and frequencies and percentiles were calculated.

RESULTS

Almost 29 cases of HMFD were picked in 2015, 32 cases in 2016, 43 cases in 2017, 81 cases in 2018, 112 in 2019.

Table 1: Signs and symptoms among study participants (N= 297).

Variable		Number (%)
Fever		256 (86%)
Age	Age <1 year	89 (29%)
	Age 1 year to 5 years	171 (57%
	Age 5-10 years	30 (10%)
Adults		7 (2%)
Vomiting		153 (51%)
Rash- in mouth		290 (97%)
Rash over hands		286 (96%)
Rash over soles		276 (92%)
Rash over buttocks		203 (68%)
Rash over elbows		213 (71%)
Rash over knees		219 (73%
Rash over lips		134 (45%)
Anorexia		189 (63%)
Diarrhoea		93 (31%)
Cough		34 (11%)
Neurological (seizures)		9 (3%)
Itching		85 (29%)
Pneumonitis		14 (5%)
Cardiac		4 (1%)
Death		1 (0.3%)
Infant (sibling) contact in family		39 (13%)
Adolescent contact in family		17 (6%)
Adult contact in family		7 (2.5%)
Admission in ward		39 (13%)
Admission in ICU		31 (10%)

Table 1 shows that fever observed in 86% cases. Around 29%, 57% and 10% cases were belonged to age <1 year, Age 1 year to 5 years and Age 5-10 years respectively. Vomiting, Rash- in mouth, Rash over hands, Rash over soles, Rash over buttocks, Rash over elbows, Rash over knees, Rash over lips, anorexia, diarrhoea, cough, Neurological (seizures), itching and pneumonitis observed in 153 (51%), 290 (97%), 286 (96%), 276 (92%), 203 (68%), 213 (71%), 219 (73%), 134 (45%), 189 (63%), 93 (31%), 34 (11%), 9 (3%), 85 (29%) and 14 (5%) respectively.

DISCUSSION

HFMD affects children, in particular children less than 5 years old, resulting in serious complications including pneumonia and even death. As currently no effective vaccine is available, seeking risk factors and improving prevention strategies are crucial for children health.[10-12]

Out of total 297 children 86% of children had fever as presenting complaint. Rashes were seen from 45%-97% children and were mainstay in diagnosis of the disease. The rash typically was seen on palms, soles, buttocks, lips, hard palate, anterior pillar of tonsils, elbows, knees. But only 45% had rash over lips. Almost all kids with rash in the mouth had painful sensation. Anorexia as a main complaint was seen 189 (63%) babies. Loose motions and cough were seen in almost one third of the sample. Itching on the body was registered in 29 percent.

Study done in Malaysia, Taiwan, China and India observed mean age of cases of HFND was 1.5 years, <5 years, <5 years and 3.4 years respectively.[13]

Complications like dehydration, meningoencephalitis, myocarditis, pulmonary edema, and death occasionally occurs in children with HFMD.[14] Viral meningitis causes fever, headache, stiff neck or back pain. Some patients may need to be hospitalized for a short time. Complications from the virus infections that cause HFMD are not common, but if they do occur, medical care should be given.[4]

CONCLUSION

Fever was the most common symptoms followed by vomiting, anorexia, diarrhoea, itching, cough. Most common complication observed was pneumonitis. Most common site for rashes was mouth, hands, soles. It is vital to screen patients with HFMD for these abnormal clinical presentations, allowing timely initiation of appropriate interventions to reduce the mortality. Increased awareness about vaccination in a developing nation like India and vaccination program at the grass root levels have eradicated certain lethal diseases. At the same time viral disorders previously unreported in Indian population are now being diagnosed more often. Thus, pediatric dentist or a general dental practitioner needs to

be aware of such disease for timely diagnosis and prompt treatment.

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Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Zhao J, Jiang F, Zhong L, Sun J, Ding J. Age patterns and transmission characteristics of hand, foot and mouth disease in China. BMC Infect Dis. 2016 Dec 1;16(1):691.
2. Zhang Y, Xu WB. Molecular epidemiology of enteroviruses associated with hand, foot, and mouth disease in the mainland of China. Biomed Environmen Sci: BES. 2013;26:875-6.
3. Sterling JC. Virus infections. In: Burns DA, Breathnach SM, Cox N, Griffiths C. editors(S). Rook Textbook of Dermatology. 7th ed. Oxford: Blackwell Scientic Publication Ltd, 2004.
4. Rao PK, Veena KM, Jagadishchandra H, Bhat SS, Shetty SR. Hand, Foot and Mouth Disease: Changing Indian Scenario. Int J Clin Pediatr Dent. 2012;5(3):220-2.
5. Aswathyraj S, Arunkumar G, Alidjinou EK, Hober D. Hand, foot and mouth disease (HFMD): emerging epidemiology and the need for a vaccine strategy. Medical microbiology and Immunology. 2016 Oct 1;205(5):397-407.
6. Palani S, Nagarajan M, Biswas AK, Reesu R, Paluru V. Hand, foot and mouth disease in the Andaman Islands, India. Indian Pediatr. 2018;55(5):408-10.
7. Chen Y, Badaruddin H, Lee VJ, Cutter J, Cook AR. The effect of school closure on hand, foot, and mouth disease transmission in Singapore: a modeling approach. Am J Tropic Med Hygiene. 2018 Dec 5;99(6):1625-32.
8. Kim B, Moon S, Bae GR, Lee H, Pai H, Oh SH. Factors associated with severe neurologic complications in patients with either hand-foot-mouth disease or herpangina: a nationwide observational study in South Korea, 2009-2014. PloS One. 2018;13(8).
9. Gu S, Li D, Lu B, Huang R, Xu G. Associations between ambient air pollution and daily incidence of pediatric hand, foot and mouth disease in Ningbo, 2014–2016: a distributed lag nonlinear model. Epidemiol Infect. 2020;148:1-9.
10. Huang R, Bian G, He T, Chen L, Xu G. Effects of meteorological parameters and PM10 on the incidence of hand, foot, and mouth disease in children in China. Int J Environmen Res Public Health. 2016 May;13(5):481.
11. Du Z, Lawrence WR, Zhang W, Zhang D, Yu S, Hao Y. Interactions between climate factors and air pollution on daily HFMD cases: A time series study in Guangdong, China. Sci Total Environmen. 2019 Mar 15;656:1358-64.
12. Gu J, Liang L, Song H, Kong Y, Ma R, Hou Y, et al. A method for hand-foot-mouth disease prediction using GeoDetector and LStM model in Guangxi, china. Scientific Reports. 2019 Nov 29;9(1):1-0.
13. Sarma N. Hand, foot, and mouth disease: Current scenario and Indian perspective. Indian J Dermatol Venereol Leprol. 2013;79:165-75.
14. Thomas J. Hand foot and mouth disease-an overview. J Ind Soc Teledermatol. 2009;3(4):1-5.

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