FREQUENCY OF MUCO CUTANEOUS MANIFESTATIONS IN DENGUE FEVER PATIENTS

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ABSTRACT

Objective: To observe the spectrum of muco cutaneous features in patients of dengue fever.

Patients and methods: The study was carried out from Sep; 2017 till Nov; 2017. Three hundred three cases of dengue fever were enrolled from inpatient departments of Hayatabad Medical Complex, Peshawar. Patients fulfilling the inclusion criteria were subjected to history, physical examination and relevant investigations. Data was recorded on a pro forma and analyzed.

Results: Out of 303 patients with dengue fever, 67 % were males and 33 % were females. Majority of the patients were in the age range of 21 to 40 years. Muco cutaneous manifestations were present in 68% of patients. Out of these 38% patients had cutaneous manifestations while 28% patients had mucosal involvement. Commonest cutaneous manifestation was macular erythema seen in 39% patients while oral erosion was the commonest mucosal feature seen in 49% of patients. Ecchymosis was seen in 3% patients.

Conclusion: Mucocutaneous manifestations are a common feature of dengue fever.

Key words: Muco cutaneous manifestations, dengue fever.

INTRODUCTION

The dengue virus is member of the genus Flavivirus of the family Flaviviridae. It is an arthropode-borne virus that includes four serotypes (DEN-1, DEN-2, DEN-3 & DEN-4).[1] According to World Health Organization (WHO) dangue fever is a major global public health challenge in the tropical and subtropical countries.[2] The incidence of dengue is on a rise due to increased population growth rate, urbanization, global warming, inefficient mosquito control, air travel, and inadequate health care facilities.[2,3] Dengue fever affects more than 100 countries. More than 400 million infections occur per year and mortality rate of 5–20% in some areas.[4] Dengue fever is endemic in America, Africa, Asia and Australia. In Pakistan first epidemic of dengue fever occurred in Karachi in 2005. During this epidemic 500 cases were reported & 13 deaths occurred. 2nd epidemic occurred in Lahore in 2011. During this epidemic 20,000 confirmed cases were reported along with 300 deaths. 9000 confirmed cases and 33 deaths were reported in 3rd epidemic that occurred in Swat in 2013. The most recent epidemic occurred in Peshawar in 2017 in which 24,900 confirmed cases were reported & 70 deaths occurred.[5]

There are variable clinical presentations of Dengue virus infection rangeing from asymptomatic illness to severe illness of dengue hemorrhagic fever/ dengue shock syndrome (DHF/DSS).[6] Muco cutaneous manifestations of dengue fever are also variable. Oral mucosal involvement is seen in around 30% of patients. Oral manifestations are more frequently associated with dengue hemorrhagic fever (DHF) than with dengue fever (DF).[7] Due to varied clinical presentation accurate diagnosis of DF is difficult and laboratory confirmation is needed. The condition is usually self-limiting and currently no antiviral therapy is available. Supportive care with analgesics, hydration, fluid replacement and bed rest forms the mainstay of management.[8]

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OBEJECTIVE

The objective of this study was to elucidate muco cutaneous manifestations of dengue fever.

METHODOLOGY

This cross-sectional descriptive study was carried out in Hayatabad Medical Complex Peshawar from September 2017 to November 2017. Ethical approval was taken from hospital ethical committee. Non probability consecutive sampling technique was used for data collection. Informed consent was taken from all those confirmed cases of dengue fever who were admitted in various medical units and other units that were specified for admission of these patients. Data was collected through a specially designed proforma. Informed consent was obtained from respective parents/guardians if age of the patients was less than 15 years. Confidentiality of information was assured. All patients irrespective of age and sex with diagnosis of dengue fever and confirmed by dengue NS1 or serology were enrolled for the study. Critically ill patients were excluded from the study on ethical grounds. Unwilling

patients, those patients who did not give consent or left before confirmation of diagnosis were excluded from the study. Patients using drugs other than paracetamol or I/V fluids were also excluded from the study. Similarly patients with history of acute or chronic skin disease and other co morbid conditions were also excluded from the study. Dengue virus rapid diagnostic tests were set as confirmatory criteria & immunoglobulins i.e. IgM & IgG levels, dengue NS 1 antigen & platelet counts were recorded. Data was analyzed using SPSS-21. Descriptive statistics were used to describe the distribution of the demographic data. Results were analyzed and reproduced as frequencies, standard deviations.

RESULTS

A total of 303 patients were enrolled for this study. Out of these 203 (67%) were male and 100 (33%) were females. Male to female ratio was 2:1 (Fig 1). Majority of the patients 145 (48%) were in the age range of 21-40 years (Fig 2). Patients of other age groups are also shown in Fig 2.

All of the enrolled patients were suffering from classic dengue fever. Out of 303 patients, 207 (68%) patients had muco cutaneous manifestations (Fig 3).

Exanthem was seen in 79 (38%) patients while enanthem was seen in 57 (28%) patients Fig 3. Erosion of hard palate was the commonest enanthem that was seen in 49% of patients. Macular erythema was the commonest exanthema seen in 39% of patients (Table 1).

Table 1: Type of exanthema

Type of exanthema	n (%) 144 (100%)
Facial flushing	29 (20)
Macular erythema	56 (39)
Maculopapular rash	27 (19)
Patechiae	29 (20)
Ecchymosis	3 (2)

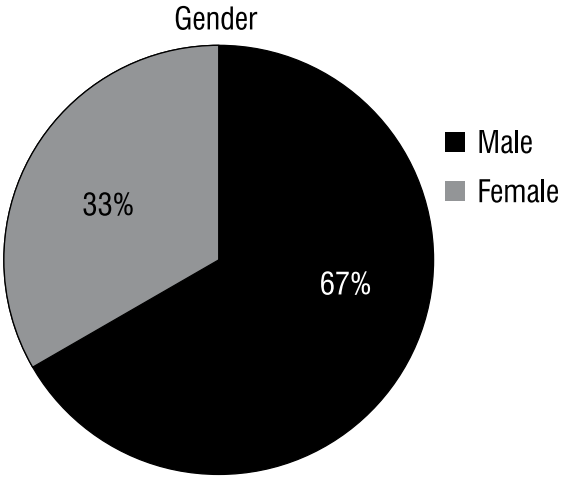

Figure 1: Demographic data—gender of patients

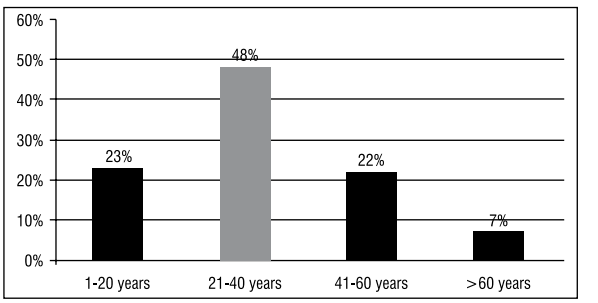

Figure 2: Demographic data—age range

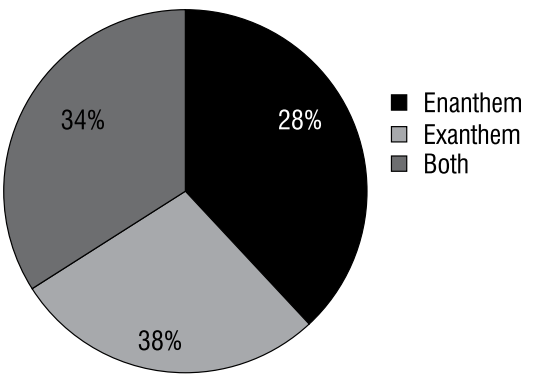

Fig 3: Type of rash

Table 2: Comparison with other srudies

		Present Study	Nadia et al JHL, 20121[5]	Thomas EA India, 2007[7]
Gender	Males	67%	67%	Not given
	Females	33%	33%	Not given
Enanthem		49%	40.6%	30%
Exanthem	Facial erythema	42%	65%	47%
	Macular rash	8%	28%	Not given
	Maculopapular rash	18%	31%	10%
	Petechiae	9%	20%	13%
	Ecchymosis	1%	13%	27%

DISCUSSION

Dangue fever is a public health problem of tropical and subtropical countries. Its incidence is on a rise globally.[9] The reasons for this upsurge could be climate change, urbanization, overcrowding and unsafe water disposal. Fever, head ache, facial flushing, muscle & bone pains, nausea and vomiting are its striking features.[10,11]

A total of 303 patients were enrolled for this study, majority of whom were male patients (Fig 1). Earlier studies also reported male predominance among enrolled patients. Reason for this could be that males are mostly responsible for earning livelihood and staying out door for this purpose. Some people spend their nights outside their homes and prefer sleeping outdoors rather than staying indoors. So males are exposed to mosquito bites more than females.

Majority of the patients were 21 to 40 years old (Fig 2). Saleem reported similar trend among his enrolled patients.[12] The reason could again be the responsibilities of patients from this age group as they are entrusted with the job of earning livelihood and living away from home and doing outdoor work.

100% of enrolled patients were suffering from classic dengue fever and none were labeled as dengue hemorrhagic fever and dengue shock syndrome. The reason could be that this was the first epidemic in Peshawar and all patients enrolled in this study belonged to Peshawar. Since first attack of this disease does not have serious complications therefore first attack of this disease either goes unnoticed or presents with classic dengue fever that subsides without major complications. However subsequent attacks are more severe and patients can present with dengue hemorrhagic fever (DHF) or dengue shock syndrome (DSS).[13,14] Hence if another epidemic of dengue occurs in Peshawar then cases of DHF or DSS might be more than this present epidemic. Therefore every measure has to be adopted to eradicate mosquito and larva of this disease so that further transmission could be stopped.

A high percentage of patients showed exanthem as compared to enanthem (Fig 3). This finding is in concordance to earlier observation by Nadia et al and Thomas EA. This has been reported in earlier other literatures as well even to the extent that facial flushing or macular erythema could be the earliest presentation of this disease.

More than 50% of dengue fever patients present with different types of immunologically mediated skin rash.[13] This rash has no relationship with platelet count. Macular erythema was the predominant reported exanthema in our patients (Table 1). This finding is in concordance with earlier local study by Nadia et al who reported that macular erythema was the commonest enanthem.[15] However Thoma EA from India reported that maculopapular rash was the commonest exanthema.[7] The reason could be their study design because they did not exclude patient who used drugs other than paracetamol and intravenous fluids. There is possibility that other drugs might be responsible for maculopapular rash and hence comparatively more patients presenting with this type of exanthema. Since 100% of our patients were having classic dengue fever therefore ecchymsis was seen in only 3% of our patients. This finding is almost similar to Saleem who reprted ecchymosis in 4% of the patients.[7]

Mucosal involvement is reported to occur in 15% to 30% of dengue viral infections.[9] Twenty eight percent of our patients had mucosal involvement out of which oral mucosal erosions were seen in 49% patients (Fig 3). Nadia et al reported almost similar findings. They stated that 43.5% of their patients had oral mucosal erosions.

CONCLUSION

A variety of muco cutaneous features were observed in patients suffering from dengue fever. The commonest mucosal manifestion was erosion of oral mucosa while macular erythema was the commonest cutaneous feature. In our country the frequency of dengue fever outbreaks has increased. Early recognition of muco cutaneous features of this disease are important as dengue fever may progress to the life threatening dengue hemorrhagic fever or dengue shock syndrome.

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