

Clinico-social Profile of Dengue Patients Admitted in a Tertiary Care Hospital in Southern Maharashtra, India

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Abstract

Background- Dengue is a positive-strand RNA virus of the Flaviviridae family with 4 distinct serotypes transmitted to humans by several species of the Aedes mosquito. **Objective-** To study the Clinico-social profile of Dengue patients admitted in a tertiary care hospital in Southern Maharashtra, India. **Methodology-** This was a hospital based descriptive observational study undertaken in inpatient wards of Medicine and Paediatrics at the tertiary care hospital from January 2018 to December 2018 where all the confirmed cases of dengue patients were included which were 90. **Result-** Of these 90 cases, (58.70%) were males and (41.30%) were females. High proportion of dengue cases were in 31 to 45 years (42%) followed by cases in the 46 to 60 years (31%). Seasonal variation showed that maximum cases occurred in Post-monsoon (51%) and Monsoon (42%) season and maximum cases (75%) belonged to classical dengue fever while (25%) belonged to Dengue haemorrhagic fever. The most common symptoms were headache (74%), abdominal pain (61%), vomiting (55%), arthralgia/myalgia (48%), retro-orbital pain (47%) and hepatomegaly (38%). **Conclusion-** There should be community involvement in prevention of Dengue by the use of personnel protective measures or source reduction by emptying the man made containers etc. for eliminating vector-breeding sites especially during the monsoon season.

Keywords- Clinico-social profile; Dengue; Tertiary care hospital.

Introduction

Dengue viruses are arboviruses capable of infecting humans, and causing disease. Dengue fever is a self-limiting disease and represents the majority of cases of dengue infection. Dengue fever (DF) and its severe forms - dengue haemorrhagic fever (DHF) and dengue shock syndrome (DSS) - have become major international public health concerns¹. The global epidemiology of dengue fever/dengue hemorrhagic fever (DF/DHF)

is changing fast². Worldwide, annually about 500,000 people with DHF require hospitalization. Approximately 90 per cent of them are children aged less than five years, and about 2.5 per cent of those affected die. Dengue is endemic in 35 states/UTs. During 2017, about 157,996 cases were reported with 253 deaths. The case fatality rate was 0.16 per cent¹.

Dengue virus is a positive-strand RNA virus of the Flaviviridae family with 4 distinct serotypes (DV1-4), and is transmitted to humans by several species of the Aedes mosquito³. The presence of muscle and joint pains gives an alternative name to the dengue fever as 'break bone fever'⁴. Subsequent infection with different serotypes increases the severity of this fatal infection⁵.

In this study we have studied the clinico-social profiles of the confirmed dengue cases reported to tertiary care hospital.

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Aim and objective- To study the Clinico-social profile of dengue patients admitted in a tertiary care hospital in Southern Maharashtra, India.

Material and Methods

This was a hospital based descriptive observational study undertaken in inpatient wards of the department of Medicine and Peadiatrics at the tertiary care hospital. The study period was from January 2018 to December 2018 i.e. total period of one year.

Study Sample :

In our study, all the confirmed cases of dengue patients admitted in the inpatient wards of the department of Medicine and Peadiatrics of the tertiary care hospital were included which were 90.

Data collection: After explaining the purpose of study and obtaining verbal informed consent from

the patients, all patients were interviewed with the help of preformed structured questionnaire and clinical examination was done. Patients were classified as dengue fever, dengue hemorrhagic fever I-IV or dengue shock syndrome according to WHO guidelines⁶.

Records of all patients were studied and data regarding their clinicosocial profile was analyzed. Data was entered in Microsoft excel sheet and it was analyzed with Epi info software. Statistical analysis was done by using simple proportions and percentages. Throughout the study anonymity of all patients was maintained and privacy as well as confidentiality of the data was assured.

Results

The present hospital based observational descriptive study was carried out among 90 confirmed cases of dengue who were admitted in the inpatient wards of the Department of Medicine and peadiatrics during the study period.

Table 1: Sex and Age wise distribution of cases

Age (in years)	Male	Female	Total	Percentage %
0-15	06	05	11	13
16-30	05	03	08	09
31-45	21	17	38	42
46-60	17	11	28	31
≥ 61	03	02	05	05
Total	52	38	90	100

Table 1 shows Sex and Age wise distribution of cases. Out of total 90 cases, (58.70%) were males and (41.30%) were females. The proportion of male cases was higher than females. High proportion of dengue cases were in 31 to 45 years (42%) followed by cases in the 46 to 60 years (31%).

Table No. 2: Distribution of study subjects according to demographic characteristics-

Religion	Number (n=90)	Percentage
Hindu	38	42
Muslim	30	33
Buddha	20	23
Christian	02	02
Socioeconomic class		
Class II	10	11
Class III	26	29
Class IV	37	41
Class V	17	19
Occupation		
Professional	01	1.11
Managerial	02	2.22
Clerical and skilled	05	5.55
Semiskilled	36	40
Unskilled	26	28.88
Unemployed	20	22.24
Type of family		
Nuclear	21	23
Joint	28	32
Three generation	41	45
Education		
Illiterate	13	15
Primary education	07	07.72
Secondary education	18	20.08
SSC	28	31
HSC	11	12
Graduate	12	13.09
Post graduate	01	1.11

Table 2 shows distribution of cases according to demographic data. Religion wise distribution shows that maximum number of individuals were Hindu by religion i.e. 42%. Muslim individuals were 33%, Buddhist individuals were 23% and Christian were 2%.

Distribution of cases according to socioeconomic status shows that the maximum numbers of study subjects were from socioeconomic class IV i.e. 41% and minimum numbers of study subjects were from socioeconomic class II i.e. 11%.

Distribution of study subjects according to occupation shows that maximum individuals are having semi-skilled occupation i.e. 40% and minimum individuals were having professional occupation i.e. 1.11%. Among 90 study subjects, 22.24% were unemployed individuals and 28.88% were unskilled individuals.

Distribution of study subjects according to type of family shows that maximum numbers of individuals were from three generation family i.e. 45% followed by joint family 32% and nuclear family 23%.

Distribution of study subjects according to education shows that most of the Dengue patients were educated up to SSC i.e. 31 % followed by patients with secondary education up to i.e. 20.08% while 15% were illiterate.

Table 3: Distribution of cases according to seasonal variation of Dengue.

Season	Number	Percentage %
Winter (December-February)	04	05
Summer/Pre-monsoon(March-May)	02	02.22
Monsoon (June-September)	38	42
Post-monsoon(October-November)	46	51
Total	90	100

Distribution of cases according to seasonal variation of Dengue in table 3 shows that maximum cases occurred in Post-monsoon (51%) and Monsoon (42%) season compared to the Winter (5%) and Summer (2.2%) season.

Table 4: Distribution of cases according to Classification of Dengue.

Classification of Dengue	No.	Percentage %
Dengue Fever[DF]	67	75
Dengue Haemorrhagic Fever[DHF] I	10	11
Dengue Haemorrhagic Fever[DHF] II	08	09
Dengue Haemorrhagic Fever[DHF] III	3	03
Dengue Haemorrhagic Fever[DHF] IV	2	02
Total	90	100

Table 4 shows Distribution of cases according to WHO Classification of Dengue where Dengue Haemorrhagic Fever(DHF)III and IV were considered as Dengue shock syndrome. It shows maximum number of cases (75%) belonged to classical dengue fever while (25%) belonged to Dengue haemorrhagic fever.

Table 5: Distribution of cases according to symptoms of Dengue.

Symptoms of Dengue	No.	Percentage %
Headache	67	74
Abdominal pain	55	61
Vomitting	50	55
Arthralgia/ Myalgia	43	48
Retro- orbital pain	42	47
Rash	21	24
Hepatomegaly	35	38
Cutaneous hypersensitivity	13	14
Haemorrhagic manifestations	14	15
Signs of plasma leakage	27	30
Signs of circulatory failure	04	05
Signs of shock	02	02.22

Table 5 shows that the most common symptoms of Dengue were headache (74%), abdominal pain (61%), vomiting (55%), arthralgia/myalgia(48%), retro-orbital pain(47%) and hepatomegaly(38%). Whereas some cases had signs of plasma leakage (30%), rash(24%), and cutaneous hypersensitivity (14%). Haemorrhagic manifestations were present in (15%) cases in which epistaxis was the most common symptom. While (5%) had signs of circulator failure and (2.22%) suffered from profound shock.

Discussion

In the present study ,a total of 90 confirmed dengue cases were reported at the hospital during the study

period from January 2018 to December 2018. Of these 90 cases, (58.70%) were males and (41.30%) were females as seen in study done by Atul Garg et al³.

Another study done by Kumar et al ⁷also showed higher prevalence of dengue infection among males than females. The male-to-female ratio was 2:1. The age group of 31-45 years was highly affected with dengue in our study and these finding are consistent with other Indian studies like Gupta et al ⁸ and Kumar et al ⁷who have reported 15 to 45 years as the most affected age group.

Contrary to this, in a study done by Shah et al⁹, it was seen that children are the most frequent victim of

dengue.

Distribution of study subjects in table no.2 shows that maximum number of individuals were Hindu by religion i.e. 42% belonging to socioeconomic class IV i.e. 41%, 15% were illiterate and among 90 study subjects, 22.24% were unemployed individuals and 28.88% were unskilled individuals belonging to three generation family i.e. 45%.

Distribution of cases according to seasonal variation of Dengue in table 3 shows that maximum cases occurred in Post-monsoon (51%) and Monsoon (42%) season compared to the Winter (5%) and Summer (2.2%) season. The correlation between occurrence of dengue and monsoon season is also evident in a study done by Atul Garg et al³ in which seasonal trend showed that there were no positive cases from January to July every year; the infection started spreading in August, peaked in October and slowly tapered by December. Study done by Ekta Gupta et al also gave similar findings showing increased dengue virus activity in post monsoon period September to November with peak in the second and third week of October⁸.

Table 4 shows Distribution of cases according to WHO Classification of Dengue where Dengue Haemorrhagic Fever(DHF) III and IV were considered as Dengue shock syndrome. It shows maximum number of cases (75%) belonged to classical dengue fever while (25%) belonged to Dengue haemorrhagic fever. The study findings are parallel to a study done by Jimmy Antony et al⁵ in which out of 341 cases, 333 (97.65%) were due to classical dengue fever and remaining 8 cases (2.34%) were due to dengue hemorrhagic fever.

Table 5 shows that the most common symptoms of Dengue were headache (74%), abdominal pain (61%), vomiting (55%), arthralgia/myalgia(48%), retro-orbital pain(47%) and hepatomegaly(38%). Whereas some cases had signs of plasma leakage (30%), rash(24%), and cutaneous hypersensitivity (14%). Haemorrhagic manifestations were present in (15%) cases in which epistaxis was the most common symptom. While (5%) had signs of circulator failure and (2.22%) suffered from profound shock. The study findings are similar to a study done by Ritu Karoli et al¹⁰ in which most common symptoms were headache (105, 76%), abdominal pain (87, 63%), vomiting (80,

58%), rash (36, 26%), and cutaneous hypersensitivity (22, 16%) and Haemorrhagic manifestations in 55(40%) of the cases.

Limitations of the study-

As it was a hospital based study, the study findings can not be generalised to the whole population.

Conclusion

Poverty, illiteracy and ignorance about mosquito borne diseases are the main hurdles of prevention of dengue. As there is no proper vaccine, the main preventive measure is through integrated vector management. There should be community involvement in prevention of Dengue by the use of personnel protective measures or source reduction by emptying the man made containers etc for eliminating vector-breeding sites especially during the monsoon season. Whereas early diagnosis and timely treatment of Dengue cases plays a vital role in secondary prevention.

Ethical approval: The study was approved by the Institutional Ethics Committee.

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Conflict of Interest - All authors declare that there are no conflicts of interest in this study.

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