Original Research Article

Significance of abdominal manifestations in dengue fever

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ABSTRACT

Background: Dengue Fever is an Infectious condition caused by flavo virus. It is an epidemic since 4 years and its prevalence is increased in the recent years in India. The increase in India is due to rapid urbanization, population growth, increased international travel and global warming. But dengue fever is now being reported from rural backgrounds due to poor sanitation and stagnant water sources.
Methods: This is an institutional cross sectional study in which we took patients presenting with fever and various other complaints related to viral fevers for 9months from 2016 June to March 2017 at Rajiv Gandhi Institute of Medical Sciences, Ongole. In this study we included patients who are NS1 Ag positive and dengue ELISA positive only. We excluded whose NS1 Ag test positive but their dengue IgM ELISA report is negative.
Results: In this study we have included 94 patients of all age groups who are diagnosed with dengue fever. Next in the list are nausea/vomiting (43.6%) and diarrhea (40.4%) respectively. We highlighted this in conclusion to consider abdominal manifestations association while evaluating pyrexia patients.
Conclusions: As usually fluid management and regular monitoring is the main role in the management of dengue cases than platelet or blood transfusions and antibiotics. We concluded that there is significant association between abdominal manifestations and dengue fever. So abdominal manifestations should be considered while evaluating pyrexia patients to rule out dengue association in those patients and prognosis of dengue fever.

Keywords: Abdominal manifestations, Diarrhea, Dengue fever, Gall bladder wall thickening

INTRODUCTION

Dengue is the most common arthropod-borne viral illness in humans. Dengue is a fast emerging pandemic viral disease in many parts of the world especially in tropical and subtropical countries. In recent days there has been an alarming increase in the incidence of dengue fever and has emerged as a serious international public health threat with almost half of the world's population at risk for infection. Worldwide dengue infection is a major health problem including India. As per WHO incidence has increased 30-fold between 1960 to 2010. And current estimates shows 50-100 million dengue infections in the world everywhere. Year-round transmission of dengue viruses 1-4 occurs between latitudes of 25°N and 25°S, but seasonal forays of the viruses into the United States and Europe have been documented.[1]

The disease is also endemic in many parts of India, especially the metropolitan cities and towns. Outbreaks are now reported quite frequently from different parts of the country like rural areas of Haryana, Maharashtra, Andhra Pradesh and Karnataka. At present, information on adult dengue infections in South Asia is quite limited. Very few studies have been conducted in this part of our country and hence this study was undertaken to study the

clinical picture, laboratory profile and outcome of dengue fever in and around Ongole.

But Dengue is now being reported from rural backgrounds also Dengue virus is an Arbo virus of genus Flavi virus. It has four serotypes. Infection with any one among four serotypes gives permanent immunity to that type and partial and temporary Immunity for other types also. All four viruses have *A. aegypti* as their principal vector. A person can be infected by any of the four serotypes during a break out.[2]

Dengue is classified as uncomplicated and severe by WHO in 2009. However, the 1997 WHO classification is widely used i.e. DF, DHF, and DSS.[3] The most clinically important flavi viruses that cause the fever and myalgia are dengue viruses 1-4. Dengue fever may be presented with sudden onset of high fever, headache, myalgia which is most common presentations like any other viral fever. But extensive body pains, weakness, nausea, vomiting, sore throat, altered taste sensation, a centrifugal macula papular rash, retro-orbital pain, is other manifestations.[4]

Some persons develop bleeding, hematuria, rashes, itching which is termed dengue hemorrhagic fever (DHF). Recently it is seen that clinical profile of dengue is slightly changed from those in previous years, which is very crucial to know the expanded clinical profile of dengue for early detection and thus better outcome. Whereas in our tertiary care centre we noticed so many patients are presenting with Rt hypochondrial pain, diarrhoea, asictic fluid and gall bladder wall thickening n U/S abdomen screening. This study highlights the importance of other signs and symptoms in early diagnosis and the better management of dengue cases in our hospital.[5]

METHODS

A cross-sectional hospital-based study was conducted at Rajiv Gandhi institute of Medical Sciences, Ongole in The Department of General Medicine from June 2016 to March 2017 for duration of 9 months. We have taken ethical clearance from the committee at Ongole and also Informed consent taken from each patient.

Among these 94 patients 47 are Male and 47 are Female patients. We have collected detailed history and General Physical and systemic Examination findings and noted in the form of a case sheet.

Investigations

- Complete blood picture: RBS, FBS, PPBS
- Peripheral smear for malaria: LFT and RFT
- ECG: U/S abdomen and pelvis
- Urine routine examination: chest x ray P.A. view
- Blood grouping and typing: serum electrolytes.

RESULTS

We did this study for duration of 9 months between June2016 to March 2017. In this study there are a total of 94 patients. The males are 47 (50%) and females are also 47 (50%) in number and male and female are equal in sex ratio. Among these 84 (89.36%) major are from rural areas and only 10 (10.63%) are from urban back ground. Among all age groups 21-40 age group are 50 (53.2%) in number which is maximum. An 84 (89.36%) patients in this study are from rural background and coastal areas where sanitation facilities are poor, open defecation is prevalent in these rural areas and stagnant water in small canals for the sake of cultivation are the breeding grounds for mosquitoes.

These factors lead to increase in Mosquito population but due to wide public awareness made by the government and media, patients immediately consulted the nearby medical facilities and we are able to detect dengue at early stages and treat them accordingly. But few cases are referred at later stage which were complicated and took longer time to recover completely. There were 81 (86.17%) cases of dengue fever,10 (10.63%) of dengue hemorrhagic fever, and 3 (3.19%) cases of dengue shock syndrome which is similar to WHO dengue and dengue hemorrhagic fever, Fact sheet No.117 (5). The present study signifies that majority of the cases 50 (53.19%) were in the age group of 21 to 40 which is similar to maximum of other studies. Our study demonstrates 10.63% cases of DHF which is lower when compared to studies from BHU Varanasi (18.05%), Lucknow (30%), Pakistan (19.4%) (Table 1).

Table 1: Age, sex, demographic distribution.

Age group	Male	Female	Rural	Urban
<14	5	9	11	3
14-20	8	9	15	2
21-40	28	22	45	5
41-60	6	6	12	0
>60	0	1	1	0

On presentation thrombocytopenia is seen in almost all cases but low platelet counts <40,000 are 42 (44.6%) and <20,000 are 16 (17%) in number where as the least platelet count we noticed is that is 6000 on presentation. Around 28 pts. (29.7%) are with leucopenia. We did one whole blood transfusion for 1 patient and only 1 platelet transfusion for 1 DSS patient. In spite of transfusion and maximum measures for his recovery he is expired on Day 2. Raised serum bilirubin levels are seen in 5 (5.3%) and elevated liver enzymes (SGOT and SGPT) are seen in 29 (30.8%) patients and renal function is altered only in one MODS patient. whereas Rashmi KS et al, reported 72.77% cases platelet count lesser than 40,000 were reported in 44.6% cases lesser than Rajesh et al, (69.51%) minimum platelet count seen is 6000/cumm. Raised HCT is noted in 29.7% cases which is more than Rajesh et al,

(20.77%0) Anuradha M et al, (30%)is lesser than J Singh et al, (67.59%). Altered a liver function tests are reported in 30.8% cases lesser than Singh et al, (58.33%) but increased total bilirubin levels is seen in 5.3% (Table 2).

Table 2: Investigation results.

Investigation	No. of pts (percentage)
Leucopenia	28 (29.7)
Platelets <1,00,000	84 (89.36)
<40,000	42 (44.6)
<20,000	16 (17)
HCT	28 (29.7)
Serum bilirubin	5 (5.3)
Liver function tests	29 (30.8)
Renal function tests	1 (1)

Table 3: Clinical features and its prevalence.

Clinical Feature	No. of Pts (percentage)
Fever	90 (95.7)
Myalgia	80 (85.1)
Pain abdomen	44 (46.8)
Nausea/vomiting	43 (45.7)
Ascites	41 (43.6)
Diarrhoea	38 (40.4)
Hepatomegaly	30 (31.9)
Splenomagaly	26 (27.6)
Head ache	25 (26.6)
Breathlessness	12 (12.7)
Skin rashes	7 (7.4)
Itching	6 (6.3)
Retro orbital Pain	3 (3.1)
Conjunctival suffusion	2 (2.1)
Bleeding	1 (1.06)

In this study fever (95.7%) and myalgia (85.1%) are the presenting complaints in most of the cases. These symptoms are common in most of the viral fevers. But we noticed abdominal discomfort in the form of Rt hypochondrial pain (46.8 %) is the next leading complaint among the remaining complaints. We have evaluated that all these RT hypochondria pain patients are evaluated with either with gall bladder wall sludge or thickening of tram or honey comb pattern, calculi on U/S abdomen and pelvis. The next prominent observation is minimal ascites (45.7%) followed by c/o nausea, vomiting (43.6%).

Even diarrhoea (40.4%) also seen in significant number of patients. Headache is 26.6% which is slightly more than Munde et al, (25%) which is lower in comparison with 90%. Jitendra et al, and in Japan by Itoda et al, (78.7%), 86% in north east study and in Udipi (47.6%), few patients are seen with also breathlessness (12.7) either may be due to fluid overload or may be capillary leak also noticed. Bleeding in the form of hematuria is seen in 1 (1.06 %) patient. Macular papular reddish

rashes are seen in 7 (7.4%) and itching is seen in 6 (6.3%) patients. Retro bulbar pain and conjunctival suffusion also seen in few patients. Mortality is 1 (1.06%) and patient is presented with MODS and DSS. He is expired in 1 day of presentation and he is diagnosed as newly dx DM and in ARF. But no other study has seen higher involvement of Pain abdomen is 46.8% pts but not on par with other studies by Chhina RS et al, and Mandal et al. Diarrhea is also seen in 40.4% is similar to other studies (Table 3).

DISCUSSION

The study population consists of all age groups from 4 yrs. to 65 yrs. We enrolled all fever patients with similar features of dengue fever at stage 1. Then we did NS1 Ag test for all enrolled patients and then we did dengue confirmatory IgM test by ELISA method. then we included only the ns1 ag test and IgM ELISA positive patients in this study. We excluded all those NS1 positive and ELISA negative patients. A total of 94 patients are participated in this study.[6] Mittal et al, laboratory reports showed 26% of leucopenia which is lesser than 90% in ageep (71%) 43.83% in Maharashtra, (30%) 29.73% in Eastern India. An (36.11%) and more than Metal H et al, (19.2%) (4.1%). Thrombocytopenia is seen in 100% pts like other studies. Platelet counts less than 1 lakh were reported in 89.36% cases 89.35%).[7]

Mandal SK et al, study shows myalgia in 85.1% cases which is higher than Udipi (64.6%), JItendra 62.03%), North East (60%) Munde et al, (50%) and lesser than Mandal SK (90.7%) et al. Nausea/vomiting was present in 41 (43.6%) cases which is similar to Varanasi and significantly more than a study at Bangalore and lower when compared to Pakistan (57.8%) North East India (54%). Headache is 26.6% which is slightly more than Munde et al, (25%) which are lower in comparison with 90%.[8]

Rahim M A et al, rashes are seen in 7.4% cases which is very much lower in comparison with other studies by Rahim M A et al, (78.5%) in Bangladesh, 26% by Karoli R et al and 19.9% by Jitendra et al. The only bleeding manifestation in the study is hematuria which is not seen in other studies like from Udipi, Bangalore, where petechial and epistaxis is more common. Retro orbital pain is classic feature in dengue is seen in 3.1% cases only similar to jitendra et al study. One patient who expired is in DSS. He expired in 1 day of admission and he is evaluated to be newly dx DM and in ARF with MODS. Mortality is 1.06% as similar with other part of South Asia Region.[9] A study by Premji J (58%) et al, with all variants of gallbladder wall thickening and inflammation, altered LFT is seen 30.8%.[10]

CONCLUSION

Dengue fever prevalence is increasing not only in urban areas but also in rural areas and due to poor sanitation,

open defecation and stagnant water canals meant for the agriculture. Early diagnosis, regular monitoring, counseling about thrombocytopenia and negligible role of Platelet and blood transfusion plays a big role and its complications to patient's attendants in achieving best outputs. So, patients along with fever and myalgia we highlight the importance of Rt hypochondrial pain (abdominal discomfort) associated with nausea, vomiting (even may not with fever), diarrhea, ascites also should consider for early diagnosis and advised to do U/S abdomen for screening and evaluation of prognosis of dengue Fever and its management. We tried paracetamol, tramadol for Rt hypochondrial Pain but it was only partial and temporary recovery only. It took more than 5-7 days in 25 (56%) patients but it took even 15 days in 2 (4.5%) patients for complete recovery of pain. We noticed its self-healing so assurance to be given to patient and attendants about Rt hypochondrial pain and its self healing nature is the mandatory step in its management.

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