Original Article

Dengue Fever

Evaluation of Upper Right Abdominal Pain in Patients of Dengue Fever

1. Haris Alvi 2. Muhammad Rehan 3. Abu Talib

1. Asstt. Prof. of Medicine, 2. Asstt. Prof. of Medicine, 3. Prof. of Medicine, Civil Hospital, Karachi

ABSTRACT

Objective: To Evaluate patients with upper Right abdominal pain in dengue fever.

Study Design: Prospective descriptive study

Place and Duration of the Study: This study was conducted at Mamji Hospital Karachi between August 2012 to October 2014.

Materials and Methods: The patients presented with confirmed dengue fever with upper right abdominal pain. The study was conducted in Mamji Hospital F.B area. The data was gathered and analysed on SPSS version 15.

Results: Total cases were 113.Males were 62 (55%) and 51(45%) were females. The mean age was 27 $\pm$ 9. With the range from 18 to 36 years. Males were slightly more than females. The causes of abdominal pain were acalculus cholicystitis in 57 cases(50%), hepatitis in 17 cases(15%) , pancreatitis in 5 cases(4.4%) and no cause was detected in 34 cases(30%).Total leukocyte count was not high and thrombocytes were low in every case. SGPT was mildly(Less than 100) raised in 71 cases (63%), moderately raise (more than 200) in 27 cases (23%) and severely raised in 12 cases (10.6%) (more than300) and in 03 cases (3%) the SGPT was normal. Ultrasound finding of acute acalculus cholecystitis were enlarged gallbladder with thickened wall in 57 cases (50%) while 9 cases (8%) had gall stones without inflammatory signs. Perihepatic fluid in 35 cases (31%). Swollen pancreas were noted in 5 cases (4.4%). Amylase were raised in 13 cases (11.5%) and serum lipase were raised in 5 cases (4.6%).

Conclusion: The acalculus cholecyctitis is one of the the commonest cause of upper abdominal pain in dengue fever. It is also consider as an early sign of severe infection.

Key Words: Dengue fever, upper abdominal pain, ultrasound abdomen

Citation of article: Alvi H. Rehan M, Talib A. Evaluation of Upper Right Abdominal Pain in Patients of Dengue Fever. Med Forum 2015;26(12):3-6.

INTRODUCTION

Dengue fever[1 2] also known as breakbone fever. It is a tropical disease spread by mosquito ades aegypti and the virus is dengue Skin rash is similar to measles. Symptoms include fever, headache and bodyache. The disease may progress to dengue hemorrhagic fever that manifest as bleeding from different sites.[3] Majority of the infection is milder usually passed unnoticed. The virus has four different types, and one infection gives lifelong immunity to that particular infection and partial to others remaining types. A second infection may be more serious. There is no vaccine available so the prevention of the mosquitos and public protective measures are more appropriate. Now in Pakistan it is also one of the commonest infectious disease.

The dengue fever was milder like upper respiratory tract type fever in 80% of the cases while in the remaining there was a course of the disease and from uncomplicated to complicated even dengue hemorrhagic syndrome to toxic shock syndrome. The incubation period is 4 to 7 days but may prolong to 14 days. The travelers after returning to home develop fever 14 days later then dengue should not be consider. The characteristic symptoms of dengue are sudden-onset fever, headache (typically retro-orbital), muscleache and a rash. The course of infection is divided into three phases: febrile, critical, and recovery. In febrile phase there is high grade fever (103-105 °F), and is associated with backache and headache, Nausea and vomiting may also occur. A rash occurs in 50–80% of cases as flushed skin, as "if you press the area the impression of your hand or fingers was visible (blanches when pressed). The fever was classically biphasic. This phase was last for one week and as the fever subsides patient may complain right upper abdominal pain[4 5 6]. Some time it was during the febile period but mostly after fever subsided. The commonest cause of upper abdominal pain related to disease may be acalculus cholecystitis[7], acute hepatitis[8], pancreatitis and gastritis. This may include in critical phase, the disease proceeds to a critical phase as fever resolves during this period, there is leakage of plasma from the blood vessels, typically lasting one to two days[9]. This may result in fluid accumulation in the chest and abdominal cavity as well as depletion of fluid from the circulation and decreased blood supply to vital organs. At this point there is few petechiae that may proceed to bleeding. There may also be organ dysfunction and severe bleeding, typically from the

Correspondence: Dr. Haris Alvi
Asstt. Prof of Medicine, Civil Hospital,
Dow Medical College, DUHS , Karachi
Contact No.: 03332234706
E-mail: doctorhalvi@gmail.com

gastrointestinal tract[10]. In less than 5 % of the cases because of the less intravascular volume and frank bleeding there will be chances of shock and lead to dengue shock syndrome. Then the last recovery phase it is with resorption of the leaked fluid into the bloodstream. This usually lasts two to three days, sometimes it may continue with severe itching. Some patients may complain fatigue even after weeks of cure of illness.

Dengue may involves others systems of the body. A decreased level of consciousness occurs in 0.5–6% of severe cases, which may be due to brain or liver and it is the result of inflammation by virus or by indirectly as a consequences of the vital organs. Other rare[11] presentation of dengue are transverse myelitis,[11] Guillain-Barré syndrome, acute liver failure[12] heart, skeletal muscles and dengue shock[13].

MATERIALS AND METHODS

This is a prospective descriptive study conducted in Mamji Hospital Karachi a private Hospital. This is a very busy Hospital and covered a large area of Sorab goth, Federal B area, North Karachi and Nazimabad. The average OPD is more than 300 /day of different specialities and 20-30 admission per day. All the patients included were adult and the duration of the study is from Aug 2012 to Oct 2014. The patients included were positive cases of dengue fever and presented with upper abdominal pain during the course of illness or as the first symptoms.

Detailed history and clinical examination were done in every case, and basic biodata were recorded in preset proforma. The symptoms and sign were recorded and laboratories finding were recorded on the day first and on daily basis. The data were analysed on SPSS version 15.

Inclusion Criteria:

1) Patients were adults
2) Resident of Karachi
3) Dengue serology was positive
4) Upper abdominal pain
5) Ultrasound confirm the diagnosis
6) Duration of disease greater than five days.

Exclusion Criteria:

1) Age less than 12
2) Negative Ultrasound finding
3) Negative dengue serology
4) Other etiology like appendicitis, renal stone basal pneumonia and liver abscess.

RESULTS

Total cases were 113.Males were 62 (55%) and 51(45%) were females. The mean age was 27 $\pm$ 9. With the range from 18 to 36 years. Males were slightly more than females. The causes of abdominal pain were acalculus cholicystitis in 57 cases(50%), hepatitis in 17 cases(15%), pancreatitis in 5 cases(4.4%) and no cause was detected in 34 cases(30%).Total leukocyte count was not high and thrombocytes were low in every case. SGPT was mildly(Less than 100) raised in 71 cases (63%), moderately raise (more than 200) in 27 cases (23%) and severely raised in 12 cases(10.6%) (more than300) and in 03 cases (3%) the SGPT was normal. Ultrasound finding of acute acalculus cholecystitis were enlarged gallbladder with thickened wall in 57 cases(50%) while 9 cases (8%) had gall stones without inflammatory signs. Perihepatic fluid in 35 cases (31%). Swollen pancrease were noted in 5 cases (4.4%). Amylase were raised in 13 cases(11.5%) and serum lipase were raised in 5 cases (4.6%).

The platelets and haematocrit were done daily and incremental pattern in haematocrit and decremental pattern in platelets were sign of seriousness. The increasing haematocrit was showing the dehydration status of the patients. The blood pressure and pulse were checked frequently and good hydration was maintained. Hepatosplenomegaly was noted in 17 cases(15%). All the results were shown in different tables as following.

Table No 1: Biodata

Total cases	113
Male	62 (55%)
Female	51 (45%)
Mean age	27$\pm$ 9 YEARS
Range of age	18-36 YEARS
Abdominal pain	113 (100%)
Fever	73 (64.6%)
Nausea	113 (100%)
Vomiting	78 (69%)
Jaundice	34 (30%)
Flushing/bleeding	113 (100%)

Table No. 2: Abdominal Etiology

Acalculus cholicystitis	57(50%)
Hepatitis	17 (15%)
Pancreatitis	05 (4.4%)
No causes detectred	34 (30%)

Table No. 3: Laboratory Finding

Test	Mean	Range
Hemoglobulin	11 g/dl	9-14 g/dl
Hematocrit	44	39-47
Tlc	3100	2700 -5100
Platelets	67000	31000-97000
Total bilirubin	2.7mg/dl	2.1-3.7 mg/dl
Sgpt	163	63-509

Table No. 4: Ultrasound Finding

ultrasound finding	No of cases
hepatosplenomegaly	17 (15%)
acalculus cholicystitis (tickened wall)	57 (50%)
gall stone	09 (8%)
swollen pancreas	05 (4.4%)
perihepatic fluid	35 (31%)

DISCUSSION

Dengue fever also known as breakbone fever. It is a tropical disease spread by mosquito ades aegypti and the virus is dengue Skin rash is similar to measles. Symptoms include fever, headache and bodyache. The disease may progress to dengue hemorrhagic fever that manifest as bleeding from different sites. Majority of the infection is milder usually passed unnoticed. Dengue is the one of the commonest infectious disease in Pakistan.The patients with prolong disease may present differently even if they were afebrile like abdominal pain, nausea and vomiting and extreme weakness[14]. Among the causes of abdominal pain the acalculus cholecystitis, viral hepatitis and acute pancreatitis were the commonest. Whenever a patient with dengue present in OPD with upper abdominal pain the first thing was to had an ultrasound abdomen[15] done that showed gall bladder wall thickness, gall stones, hepatosplenomegaly swollen pancrease and ascites. The pathogenesis was either the direct effect of the virus or the increase permeability caused by the virus so there may be capillary leakage.The upper abdominal symptoms were quite alarming after the fever subsided and they should be managed properly as they are the complications of the disease.The abdominal pain that was not localized to the right upper side may had acute appenditicitis in the differential. The first thing was to hospitalized the patient. The management was not very difficult. It was basically symptomatic stomach rest, hydration and electrolyte balance.

In our study only those patients were included which either present with abdominal pain or developed abdominal pain during the course of illness. Among 113 patients 57 cases were diagnosed as acalculus cholecystitis [16] almost half of the cases, while 17 cases had viral hepatitis and 05 had acute pancreatitis. The raised SGPT level and low platelets were very common in dengue fever the raised SGPT were responsible for the upper gastrointestinal symptoms[17]. But with the course of illness the acalculus cholecystitis was also the main cause of the upper right abdominal pain the ultrasound showed gall bladder wall thickness. In 34 cases no cause was detected so it was difficult to say that they had GERD or gastric erosions or ulcers as upper G.I. endoscsopy was not performed because of low platelets, later patients were managed so the OGD was postponed As the cases were positive for dengue serology but IgM of HAV and HEV were send in those patients in which the SGPT was raised and ultrasound showed increased echogenicity of liver but they all come negative. No patient was alcoholic. Other studies[16] done on same topic the commonest cause was acalculus cholecystitis in dengue fever of upper right abdominal pain. Diarrhoea[18] is also caused by dengue fever so it aggravates the dehydration

In our view the abdominal pain might be the early sign of the dengue shock syndrome and keep a real eye on the rising haematocrit and it will give you an idea that how much patient was dehydrated and if not properly managed[19] patient might gone into shock. As we took good care of the patient in this vulnerable period and no patient was discharged prematurely so there were no further complication were recorded. Therefore in the patients of dengue fever and dengue hemorrhagic fever[20] the upper abdominal pain and persist upper gastrointestinal symptoms will be alarming and should need urgent abdominal ultrasound and proper management.

CONCLUSION

The acalculus cholecyctitis is the commonest cause of upper abdominal pain in dengue fever. It is also consider as an early sign of severe infection.

Conflict of Interest: The study has no conflict of interest to declare by any author.

REFERENCES

1. Haris E, Videa E, Perez L. Clinical, epidemiologic and virologic features of dengue in the 1998 epidemic in Nicaragua. Am J Trop Med Hyg 2000; 63:5-11.
2. World Health Orginaization. Dengue haemorrhagic fever: diagnosis, treatment, prevention and control Geneva: WHO, 2009.
3. Tsai CJ, Kuo CH, Chen PC, Changcheng CS. Upper gastrointestinal bleeding in dengue fever. Am J Gastroenterol 1999;86:33-35.
4. Promphan W, Sopontammark S, Pruekprasert P, kajornwattanakul W, Kongpattanayothin A. Acute abdominal pain in dengue haemorrhagic fever. Gengue Bulletin 2009;33:70-74.
5. Boon-Siang Khor, Jien-Wei Liu, Ing-Kit Lee, Kuender D. Yang. Dengue hemorrhagic fever patients with acute abdomen: Clinical experience of 14 cases. Am J Trop Med Hyg 2006;74:901-904
6. Khanna S, Vij JC, Kumar A, Singal D, Tandon R. Dengue fever is a differential diagnosis in patients with fever and abdominal pain in an epidemic area. Ann Trop Med Parisitol 2004;98:757-760.
7. Goh BX, Tan SG, Case of dengue infection presenting with acute acalculus cholecystitis. J Gastroenterol 2006;21:923-924.
8. Itha S, Kashyap R, Krishnani N, Saraswat VA, Choudhuri G, Aggarwal R. profile of liver involvement in dengue virus infection. Nati Med J Ind 2005;18(3):127-130.
9. Mangold KA, Reynold SL. A review of dengue fever a resurging tropical disease. Pediatr Emerg Care 2013;29(5):665-9.

10. Wiwanitkit V. Dengue harmorrhagic fever presenting as acute abdomen. Sultan Qabos Univ Med J 2012;12(1):129-30
11. Satya SN, Chakrapain M, Akshatha NU. Atypical manifestation of dengue fever, where do we stand today? J Clin Diag Res 2014;8(1):71-73.
12. Ooi ET, Ganesananthan S, Anil R, Kwok FY, Sinniah M. Gastrointestinal manifestation of dengue infection in adults. Med J Malaysia 2008; 63(5):401-5.
13. Rajapakse S. Dengue shock. J Emerg Trauma Shock 2011;4(1):120-127
14. Zhang H, Zhou YP, Pang HU, Zhang XH, Zhou FY, Liu ZH, et al. Predictive symptoms and signs of severe dengue disease for patients with dengue fever a meta analysis Biomed Res Int 2014; 2014;359308.
15. Sudhir S, Sundal G, Saurabh S, Role of ultrasonography in early detection of dengue hemorrhagic fever. Arch Clin Exp Surg 2013; 2(1):38-42
16. Nasim A. Dengue fever presenting as acute acalculus cholecystitis. J Coll Physicians Surg Pak 2009;19(8):531-533.
17. Ramos-Dela Medina A, Ramos-Troche JM, Gonzalaz Medina MF, Anitua Valdovinos Mdel M, Ceron T, Zamudio C, Diaz-vega A. Abdominal & gastrointestinal symptoms of dengue fever. Analysis of a cohort of 8559 patients. Gastroenterol Hepatol 2011;34(4):243-7.
18. Emil CR, Carlos F, Robert K, Guenter JK. Diarrhea caused by primarily non gastrointestinal infections Nature Clinical Practice Gastroenterol & Hepatol 2005;2:216-222.
19. Sananayake AMK, Kosala GW, Ruwan M, Udayak R, Menoji P. Trends of fluid requirement in dengue fever and dengue haemorrhagic fever. A single centre experience in Sri Lanka. BMC Research Notes 2015;8:130.
20. Duane J Gubler, Dengue and dengue haemorrhagic fever. Clin Micribial Rev 1998;11(3):480-496.