

A Study of Fever with Thrombocytopenia Cases in a Tertiary Centre

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ABSTRACT

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Objective: This study attempts to determine the common etiologies of fever with thrombocytopenia in adult patients admitted under the department of Medicine in a tertiary care centre. To note varying manifestations of dengue fever besides other than conventional presentations of classical dengue.

Materials and Methods: In a retrospective clinical study of patients admitted to Jubilee Mission Medical College & Research Institute last season (June, July and August'12), case files of 94 patients with fever (Temp > 99 degree F) with platelet count < 1,50,000 were analyzed for its various clinical presentation, serology, complications, and requirement of platelet transfusion.

Conclusions: In our study the most common causes of fever with thrombocytopenia was Dengue fever, followed by non-specific viral fever, leptospirosis. In majority of patients thrombo-cytopenia was transient and asymptomatic. Among infections, dengue/non-specific viral fever is the commonest cause of fever with thrombo-cytopenia without organ involvement. Patients usually recover with supportive treatment.

Keywords: Fever, Thrombocytopenia, Dengue fever

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INTRODUCTION

Thrombocytopenia is characterized by bleeding manifestations from small vessels. This bleeding can manifest as petechiae over skin, hemorrhage from mucosa of gastrointestinal or genitourinary tract and intracranial hemorrhage as dangerous consequence in thrombocytopenic patient.

BACKGROUND

The etiologies of thrombocytopenia are diverse. Various studies on thrombocytopenia done in the past have related to specific etiologies.

AIM

This study attempts to determine the common etiologies of fever with thrombocytopenia in adult patients admitted under the department of Medicine in a tertiary care centre. To note varying manifestations of dengue fever besides other than conventional presentations of classical dengue.

MATERIALS AND METHODS

In a retrospective clinical study of patients admitted to Jubilee Mission Medical College & Research Institute last season (June, July and August'12), case files of 94 patients with fever (Temp > 99 degree F) with platelet count < 1,50,000 were analyzed for its various clinical presentation, serology, complications, and requirement of platelet transfusion.

The exclusion criteria included the presence of systemic disorders which may influence the platelet count and patients without documentation regarding the presence of constitutional symptoms suggestive of viral illness.

ANALYSIS OF THE STUDY

1. Out of 94 patients, majority were below the age of 50 yrs. The youngest patient was of 15 yrs. There were only 11 cases above 50 yrs. Average age was 34 yrs
2. Males outnumbered females. Male female ratio 79:15 (about 5.2:1)

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3. Incidence of various causes of fever with Thrombocytopenia in our study.

Disease category	No. of patients	Percentage
Dengue	43	45.7%
Non-specific viral fever	36	38.3%
Leptospirosis	7	7.4%
Malaria	6	6.4%
IMN	1	1.1%
Enteric fever	1	1.1%

4. All patients presented with fever, average duration of fever is 4.5 days.
5. Along with fever, 17 patients had bleeding diathesis like rash. In these 8 patients with Dengue fever, 6 patients with non-specific viral fever and 2 patients with leptospirosis & 1 patient with Malaria (*Plasmodium vivax*)
6. Myalgia in 25 cases (14 patients with Dengue fever, 8 patients with non-specific viral fever, 2 patients with leptospirosis & 1 patient with Infectious mononucleosis). One patient with dengue had fatigability without pallor along with myalgia
7. Headache (non-specific) was presented in 26 patients, (11 patients with Dengue fever, 12 patients with non-specific viral fever, 2 patients with malaria & 1 patient with Infectious mononucleosis)
8. Arthralgia was present in 2 cases of Dengue fever, 1 patient with non-specific viral fever.
9. Gastrointestinal symptoms like:-
 - Vomiting was present in 40 cases (out of these 19 patients were with dengue fever, 15 patients were non-specific viral fever).
 - Loose stools were present in 10 cases (5 patients each with Dengue fever & non-specific viral fever).
 - Abdominal pain was present in 9 cases (5 patients with non-specific viral fever, 3 patients with Dengue fever & 1 patient with enteric fever) &
 - Jaundice was present in 14 cases (7 patients with Dengue fever, 3 patients with non-specific viral fever, 3 patients with leptospirosis & 1 patient with malaria).
10. Respiratory symptoms like – cough was present in eight cases, 1 patient with leptospirosis had ARDS
11. Altered sensorium was one of the presentations in 4 patients with Dengue fever & 1 patient with non-

specific viral fever.

12. Co-morbid conditions were present in few cases. In non-specific viral fever group; 1 patient had ARF, 2 patients had COPD and 1 patient had Bronchial asthma. In patients with leptospirosis; 1 patient had CLD, 1 patient had CRF.
 - HTN was present in 6 patients with non-specific viral fever, 1 patient in each of Dengue fever & leptospirosis.
 - Diabetes mellitus was present in 3 patients with Dengue fever, 4 patients with non-specific viral fever, 1 patient with enteric fever.
 - 3 patients with non-specific viral fever & 1 patient with Dengue fever had past history of CAD.
 - Co-morbid conditions did not have any effect on course of the disease.
13. In general examination:
 - Seven patients had pallor (4 patients with Dengue fever, 2 patients with non-specific viral fever & 1 patient with leptospirosis)
 - Fourteen patients had icterus (7 patients with Dengue fever, 3 patients with non-specific viral fever, 3 patients with leptospirosis & 1 patient with malaria)
 - Two patients had lymphadenopathy: one patient each with Dengue fever & infectious mononucleosis.
 - Three patients had pedal edema (2 patients with Dengue fever, 1 patient with non-specific viral fever)
14. Hypotension was seen in 13 patients with Dengue fever, 6 patients with non-specific viral fever, 1 patient with each leptospirosis & malaria.
15. High BP at the time of admission without past h/o HTN was noted in 2 patients with Dengue fever, 3 patients with non-specific viral fever
16. Average temperature at the time of admission was 99.5 degree F. High grade fever ≥ 101 degree F at the time of admission was seen in 6 patients with Dengue fever, 7 patients with non-specific viral fever, 3 (out of total 6) patients with malaria, 2 patients with leptospirosis
17. Hepatomegaly was present in 22 patients (10 patients were with Dengue fever, 9 patients with non-specific viral fever, 1 patient each with malaria, leptospirosis & infectious mononucleosis)

18. Splenomegaly was present in 18 patients (8 patients were with Dengue fever, 6 patients with non-specific viral fever, 3 patients with malaria and 1 patient with infectious mononucleosis)
19. Gall bladder wall edema was present in 7 patients with Dengue fever & 2 patients with non-specific viral fever
20. Ascites with pleural effusion suggestive of serositis was present in 12 cases (7 patients with Dengue fever, 3 patients with leptospirosis & 2 patients with non-specific viral fever).
21. Pleural effusion alone was present in 1 patient with infectious mononucleosis
22. Forty four patient had total count <10000 cells/cu.mm. (In this 33 patients had cell count <5000). The average TC is 7506 cells/cu.mm. The lowest TC is 1550 cells/cu.mm noted in a patient with Dengue fever, the patient recovered with supportive treatment.
23. Common range of platelet count at the time of admission was 100-150 thousands in 50 cases, 81-100 thousands in 11 cases, 61-80,000 in 12 cases, 41-60 thousands in 8 cases, 21-40 thousands in 13 cases and one patient has platelet count 10,000.
24. Serum bilirubin was elevated in 14 patients (7 patients with Dengue fever, 3 patients with non-specific viral fever, 3 patients with leptospirosis & 1 patient with malaria).
25. Liver enzymes were elevated in 40 cases. (25 patients with Dengue fever, 10 patients with non-specific viral fever, 3 patients with leptospirosis & 2 patients with malaria). Average elevation of SGPT was 108 & SGOT was 134.
 - Moderate elevation noted in 2 Dengue patients who had fulminant hepatocellular failure also
26. Serum amylase & lipase elevated in 2 patients with Dengue fever
27. Dengue IgM was positive in 43 patients (out of these 10 patients had Dengue antigen positive), patients had non-specific viral fever, 7 patients showed IgM ELISHA leptospirosis positive, 6 patients had malaria parasite positive (2 were plasmodium vivax). One patient had WIDAL positive & one patient had Paul-Bunnell was positive.
28. Only two patients received platelet transfusion (4 bags each). All other patients were managed with supportive treatment. Only one patient with Dengue

IgM positive developed Dengue hemorrhagic fever. All other patients recovered without any complications.

29. There was no mortality reported in our study.

30. Average hospital stay was six days.

31. During discharge and follow up of all patients in our study platelet count showed increasing trends and were near normal (around 1.5 lakhs/cu.mm.)

DISCUSSION

Thrombocytopenia is defined as platelet count <1, 50,000/cu.mm. This is due to either decreased production, increased destruction (immunogenic and non immunogenic), increased sequestration in spleen.

Infection is the commonest cause of fever with thrombocytopenia. Among infection, Dengue fever was the commonest cause followed by Leptospirosis. Other causes include Malaria, Typhoid, other Viral fevers, IMN, Septicemia.

Mechanisms of thrombocytopenia in infections are: (1) Bone marrow suppression, (2) Capillary adherence as in Leptospirosis, (3) Immune mediated, (4) DIC, Disseminated intravascular coagulation as in sepsis, (5) Hypersplenism, (6) Combination of mechanisms.

Platelet count of >1 lakh, are usually asymptomatic and bleeding time remains normal

Platelet count of 50,000–1, 00,000 cause mild prolongation of the bleeding time, bleeding occurs only after severe trauma

Platelet count of <50,000 have easy bruising, manifested by skin purpura after minor trauma

Platelet count of <20,000 have spontaneous bleeding from mucus membrane; they usually have petechiae, and may have spontaneous intracranial or internal bleeding.

Platelet transfusions are indicated when platelet count is <20,000.

Treating the underlying condition will result in drastic improvement of platelet count and its complications.

In our study one patient had platelet count of 10,000, but did not have spontaneous bleeding.

Dengue infection in humans causes a spectrum of illness ranging from inapparent to severe and fatal

Dengue hemorrhagic disease.

Other than the conventional presentation of Dengue fever: non-specific viral fever, classical Dengue fever, Dengue hemorrhagic fever, Dengue shock syndrome, our study revealed: atypical presentation like fulminant hepatocellular failure in 2 patients, acute pancreatitis in 2 patients, acalculous cholecystitis seen in 4 out of 7 patients with gall bladder wall edema, serositis (B/L pleural effusion, ascites) without cytopenia in 7 patients.

Dengue fever patients were treated with paracetamol for fever, intravenous saline in cases of hypotension, capillary leak and anticipated capillary leak syndrome. Platelet transfusion was given in needed cases (platelet count < 50,000 with bleeding tendency or platelet count < 20,000 without bleeding tendency).

CONCLUSION

Fever with thrombocytopenia is one of the most challenging problems in the field of medicine. In our study the most common causes of fever with thrombocytopenia was Dengue fever, followed by non-specific viral fever, leptospirosis. In majority of patients thrombo-cytopenia was transient and asymptomatic. Among infections, dengue/non-specific viral fever is the commonest cause of fever with thrombo-cytopenia without organ involvement. Patients usually recover with supportive treatment.

END NOTE

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