Research Paper

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A Study of Clinical and Laboratory Profile of Fever with Thrombocytopenia and its Outcome During Hospital Stay

Medical Science

KEYWORDS : fever,thrombocytopenia,malaria,septicemia

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ABSTRACT

Fever with thrombocytopenia is a common condition that is associated with an increased risk of morbidity and mortality.The study was designed to assess the etiology and outcome of fever with thrombocytopenic patients which is of great value in determining the proper investigations and prognosis in those patients.100 cases were included in the study. Detailed examination of various systems was done. Routine investigations was done, Specific and Special investigations(Blood &Urine culture;Widal;Antigen test for malaria;IgM ELISA Leptospira;IgM ELISA Dengue;Bone marrow aspiration/biposy etc.,) were done as and when indicated. From this study it was observed that infections were the commonest cause(98%) and among infections malaria was the common cause(45%) because of seasonal and regional variations. Definitive increase in platelet count was noted after the underlying cause was treated. There were 22% mortality and Septicemia accounted for 77% of mortality in our study followed by malaria 18%, dengue 5%.

INTRODUCTION

Infections like Malaria, Dengue, Leptospirosis, Typhoid, HIV, Miliary TB & septicemia are some of the common causes of fever with thrombocytopenia[1]. Therefore a well organized systemic approach that is carried out with an awareness of causes of fever with thrombocytopenia can shorten the duration of investigations and bring out diagnosis .

Hence, a need for study to know the causes and complications of fever with thrombocytopenia.

AIM OF THE STUDY

- To evaluate clinical and lab profile of fever with thrombocytopenia.
- To identify the cause of fever with thrombocytopenia.
- To assess the clinical complications associated with fever and thrombocytopenia.
- To assess the outcome of patient during hospital stay.

MATERIAL METHODS

This study was done on patients who were admitted to Alluri SithaRamaRaju Academy of Medical Sciences ., ELURU during the period of OCTOBER 2010 to JULY 2012. We prospectively collected a series of 100 pateints of fever with thrombocytopenia.

Inclusion criteria :

The patients of both sexes aged > 14 years. Patients admitted with fever, i.e. A.M temperature of > 37.2°C (>98.9°F) and P.M temperature of > 37.7 . C (>99.9°F), and thrombocytopenia i.e. platelet count of < 1.5 lakhs/µL.

Exclusion criteria :

Patients <14 years are excluded. Patients with fever and no thrombocytopenia are not included. Patients with thrombocytopenia and no fever are not included. Diagnosed cases of Thrombocytopenic purpura on treatment are excluded. Patients with thrombocytopenia already diagnosed to have haematological disorder / malignancy , on treatment with chemotherapy and other immunosuppresants were excluded.

- Diagnosed cases of platelet disorders and dysfunction are excluded.
- Patients on treatment with antiplatelet drugs and other drugs causing thrombocytopenia are excluded.
- Patients with cirrhosis and chronic liver disease are excluded.
- Patients with other comorbidities which exacerbate mortality are not included

STUDY PROCEDURE

Once the patients admitted with fever and those who had thrombocytopenia, a careful detailed history was recorded, general physical examination & systemic examination was done. Detailed examination of various systems was done. Routine investigation was done, Specific and Special investigations(Blood &Urine culture;Widal;Antigen test for malaria;IgM ELISA Leptospira;IgM ELISA Dengue;Bone marrow aspiration/biposy etc.,) were done as and when indicated.

Details of history, general physical examination and laboratory and technical investigation reports were noted down from time to time. Once the specific diagnosis was reached, patients were treated for it specifically and symptomatically (Mechanical ventilations, haemodialysis etc.) For bleeding complications platelet transfusions was done if platelet count was <20,000/ µL

RESULTS AND OBSERVATION

INCIDENCE OF MALE AND FEMALE PATIENTS IN OUR STUDY

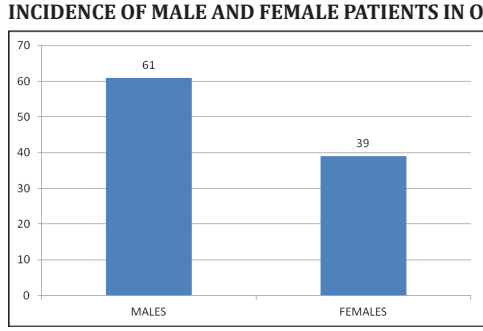


figure 1
NO.OF PATIENTs

DISTRIBUTION OF PLATELET COUNT AT THE TIME OF ADMISSION

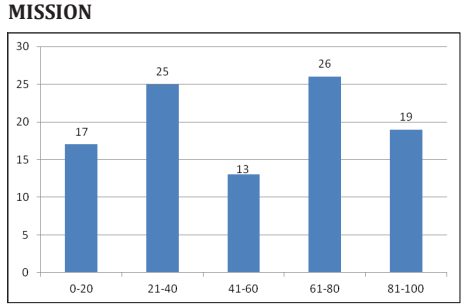


figure 2
NO.OF PATIENTS

PLATELET COUNT IN THOUSANDS
BLEEDING MANIFESTATIONS OF THROMBOCYTOPENIA

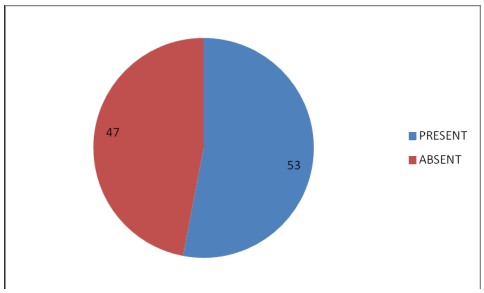


figure 3

INCIDENCE OF VARIOUS CAUSES OF FEVER WITH THROMBOCYTOPENIA

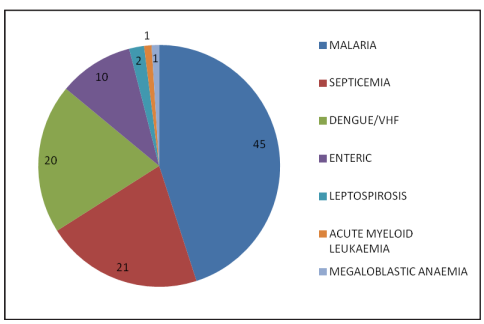


figure 4

CLINICAL OUTCOME OF FEVER WITH THROMBOCYTOPENIA

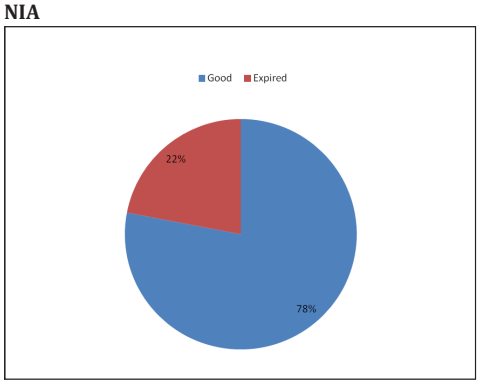


Figure 5

DISEASES THAT CONTRIBUTED TO MORTALITY

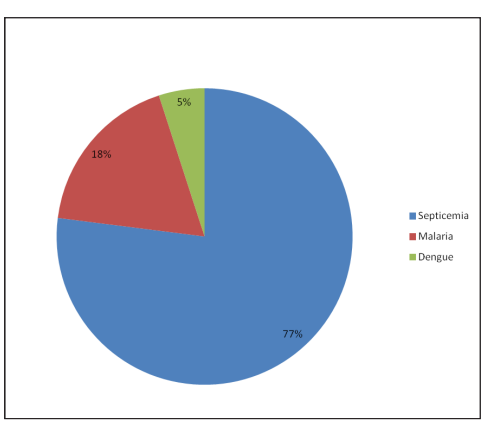


Figure 6

DISTRIBUTION OF PLATELET COUNT IN MORTALITY CASES

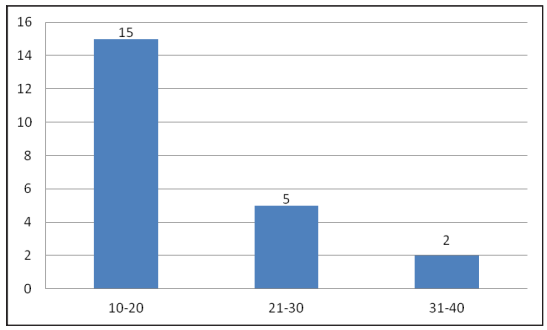


Figure 7

DISCUSSION

For a study of fever with thrombocytopenia,carefull patients selection satisfing the above mentioned criterias, prospective case collection and proper follow up is warranted.In our study distribution of platelet count in the range of 51-100 thousands was seen in 46%. Platelet count in the range of 21-50000 was seen in 37% in our study and Platelet count in the range of 0-20 was seen in 17% in our study. Our study of fever with thrombocytopenia reveals that infections as the commonest cause, among infections malaria was the common cause because of seasonal and regional variations. Definitive increase in platelet count was noted after the underlying cause was treated. Septicemia accounted for 77% of mortality in our study followed by malaria 18%, dengue 5%. Infectious diseases group formed the major portion of patients presenting with fever and thrombocytopenia lacking any specific signs. Malaria, enteric fever, dengue, leptospirosis and other viral infections formed the major chunk of this group.Thrombocytopenia is a common finding in malaria and about 80% of malaria have Platelet count rise rapidly mostly with treatment of malarial infection2, so the need of platelet transfusion in malarial cases only when platelet count <10,000/µL or if any bleeding manifestations are present. Thrombocytopenia was seen in 40-90% of patients infected with plasmodium falciparum in India 3The mechanism of thrombocytopenia in malaria could be due to peripheral destruction and consumption by DIC 4,5

SUMMARY AND CONCLUSION

A prospective study of 100 patients, who had fever with thrombocytopenia was done in our hospital. The inclusion and exclusion criteria were followed according to the criteria's mentioned in the material and methods of the study.

1. The age range of the patient was 18-80 years, with male and female ratio being 61:39.
2. The duration of hospitalisation was 3-21 days,with an average period of hospitalisation being 7 days.
3. A definitive diagnosis was made in all of them.
4. Among the diagnosed cases, MALARIA(45%) formed the largest group**.**
5. In malaria, vivax malaria (47%); falciparum malaria (31%); mixed malaria (22%).
6. Other cases diagnosed were Septicemia (21%), Dengue (20%), Enteric fever (10%) and Leptospirosis (2%),Acute Myeloid Leukaemia (1%),Megaloblastic Anaemia(1%).
7. Common range of platelet count at the time of admission was
   61-80 thousands in 26 cases,
   21-40 thousands in 25 cases;
   81-100 thousands in 19 cases;
   0-20 thousands in 17 cases;
   41-60 thousands in 13 cases.
8. Clinical manifestations of thrombocytopenia was present in 53 cases.
9. Out of 53 cases which had thrombocytopenic manifestations petechiae/purpura was present in 35 cases accounting for 66% and spontaneous bleeding in 18 cases for 34%.
10. In general,78 cases had good recovery and 22 cases had

mortality.

11. In 78 cases who had good recovery 35 were followed up and platelet count were near normal (1.3-1.5 lakhs) at time of discharge.
12. In 22 mortality cases, 17 were due to septicemia – accounting for 77% 4 due to malaria accounting for 18% and 1 due to dengue 5% of total cases.
13. Common range of platelet count in mortality cases was in range of
    10- 20 thousands in 15 cases,
    21-30 thousands in 5 cases,
    31-40 thousands in 2 cases .
14. Platelet count rise rapidly mostly with treatment of malarial infection, so the need of platelet transfusion in malarial cases only when platelet count <10,000/ µL or if any bleeding manifestations are present.
7. Outcome depends upon Severity of infection and Platelet count.
8. Fever with thrombocytopenia consists of occult presentations of common diseases rather than rare disease.
9. Malaria; dengue, typhoid;still present clinically in atypical and occult forms, making diagnosis difficult and prolonged. So high index of clinical suspicion is needed.
10. So they should be investigated with some routine and specific test like rapid spot test; IgM ELISA for dengue, IgM ELISA leptospiral antibodies, Widal test & Blood culture etc. for correct diagnosis.
11. The above clinical study shows that the Laboratory profile & Clinical outcome related to the type of infection & platelet count. However a large study is required for better picture

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