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CLINICAL AND ETIOLOGICAL PROFILE OF FEVER WITH THROMBOCYTOPENIA

Internal Medicine

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ABSTRACT

Background: Fever with thrombocytopenia is the thrombocytopenia associated with febrile illness which is commonly caused by infections such as Dengue, Malaria, Septicimia and in some cases undifferentiated fever. **Materials and Methods:** A cross sectional epidemiology study was conducted among 100 patients aged more than 14 years with fever with thrombocytopenia admitted in the medical wards in our hospital from January 2022 to September 2022. Detailed clinical examination and routine investigations were done. Specific investigations like NS1 Ag for Dengue, IgM ELISA Dengue, antigen test for Malaria, Widal test, Complete urine examination, USG Abdomen were done. The data are presented as percentages and numbers. Rates and ratios are computed. **Results:** Infection was the commonest cause of thrombocytopenia and Dengue was the commonest cause of infection followed by Malaria, Septicemia and other undifferentiated fevers. Clinical presentation include 24 % of patients had symptoms of abdominal distension and pain, 15 % of patients presented with vomiting's along with fever. 15% of patients had bleeding manifestations of which malena was common and seen 10% of patients. Spontaneous bleeding was noted when platelet counts were less than 20,000. 35% of patients had minimal to mild ascites on Ultrasonography, 15% had mild pleural effusion, 10% had splenomegaly and 6% had GB wall edema. **Conclusion:** Fever with thrombocytopenia is an important clinical condition commonly caused by infections, particularly Dengue, Malaria and Septicemia. Significant number of patients had abdominal distension, abdominal pain, bleeding manifestations. On treating the specific cause drastic improvement in platelet count was noted.

KEYWORDS

Dengue, Malaria, Septicemia, Undifferentiated fever, Platelet count

INTRODUCTION:

Fever is an elevation of body temperature that exceeds the normal daily variation and occurs in conjunction with an increase in the hypothalamic set point (e.g., from 37°C to 39°C). A temperature of >37.7°C (>99.9°F), which represents the 99th percentile for healthy individuals, defines a fever (1). Thrombocytopenia is defined as platelet count less than 150,000 /µl. This is due to decreased production, increased destruction (immunogenic and non-immunogenic) and increased sequestration in spleen (2).

Thrombocytopenia results from four processes: deficient Platelet production, accelerated platelet destruction, abnormal distribution and artefactual thrombocytopenia.

There is no absolute limit below which thrombocytopenia can lead to spontaneous bleeding. If the patient is hemostatically stable, platelet count more than 30000 will not lead to spontaneous bleeding. Bleeding may occur at higher platelet count if associated with severe anaemia, sepsis, fever etc.Septicemia, infections like malaria, dengue, leptospirosis, Typhoid, Rickettsia, human immunodeficiency virus (HIV) and miliary tuberculosis are some of the common causes of fever with thrombocytopenia.

Aim:
To know the etiology and clinical profile of fever with thrombocytopenia

Objectives:
1. To know the underlying etiology of febrile thrombocytopenia
2. To understand the relationship between platelet count and bleeding manifestations
3. To know the various presentations, common clinical signs and complications in cases admitted to our hospital.

Study design: This study was a cross sectional epidemiological study

Study Place:
Government Medical college and Government general hospital Kadapa.

Study duration: This study was conducted over a period of 9 months from January 2022 to September 2022 after the approval of Institutional ethical committee.

Study Population: 100 patients who were admitted to medical wards with fever with thrombocytopenia were enrolled for the study after ommitting exclusion criteria.

Inclusion Criteria:
- Age more than 14 years.
- Fever less than 15 days duration.
- Fever more than 100F at least once a day.
- Platelet count less than 1, 50,000/µl.

Exclusion criteria:
- Known patients of Primary thrombocytopenia.
- Drug induced thrombocytopenia.
- Diagnosed cases of thrombocytopenic purpura on treatment.
- Patients with thrombocytopenia already diagnosed to have hematological disorder/malignancy on treatment with chemotherapy and other Immunosuppressant.

METHODS:

100 patients who were admitted to medical wards of our hospital with febrile thrombocytopenia were selected, briefed about the purpose of study, informed consent taken. History regarding various presenting complaints and bleeding manifestations were noted. Necessary investigations such as CBC, Dengue NS1 Ag, IgM ELISA Dengue, Malarial Ag test, USG abdomen, Complete Urine Examination, Chest X-ray were done and results were noted.

Statistical analysis:
The data collected was verified for completeness before entering the Microsoft excel spread sheet. The validation of the data was checked at regular intervals. The quantitative data was expressed in frequency and percentage

RESULTS:

Out of 100 cases of fever with thrombocytopenia, 58 were males and 42 were females. In this study 48%of the patients were in the range of 50,000 – 1,00,000, followed by 31, 13% and 8% of the patients in the range of 20,000 - 50,000; 10000 - 20,000 and > 1,50,000 respectively. Out of 100 cases, a definitive diagnosis could be made in 70 cases. Among them dengue was the major cause accounting for 40% of the total cases. Second major cause was unexplained causes in 30% followed by malaria in 15% of cases, Septicemia in 10% of cases, both Malaria and Dengue in 5% of cases (Fig 1).

Clinical manifestations include 24 % of patients had symptoms of

abdominal distension and pain, 15 % of patients presented with vomithings along with fever. Bleeding tendencies are more commonly seen in patients with platelet count less than 20,000 (Figure). Out of 15 patients, 10% had Malena, 2% had Hematemesis, 1% had bleeding gums, 1% cases had Menorrhagia, 1%cases had hematuria. 35% of patients had minimal to mild ascites on Ultrasonography, 15% had mild pleural effusion, 10% had splenomegaly and 6% had GB wall edema. Patients having Spontaneous bleeding and having platelet count <10,000 were transfused platelets. Supportive treatment including IV fluids, analgesics, and proton pump inhibitors were given to all patients having requirement of these.

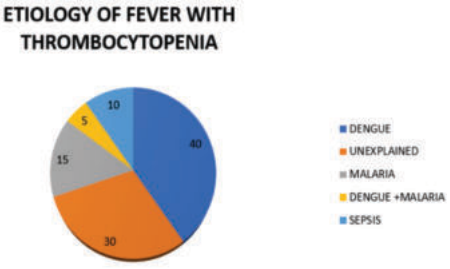

Fig:-1) Etiology of Fever With Thrombocytopenia

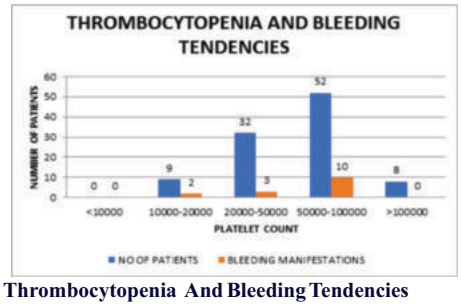

Fig:-2) Thrombocytopenia And Bleeding Tendencies

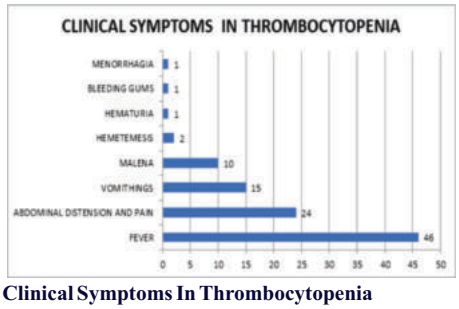

Fig:-3) Clinical Symptoms In Thrombocytopenia

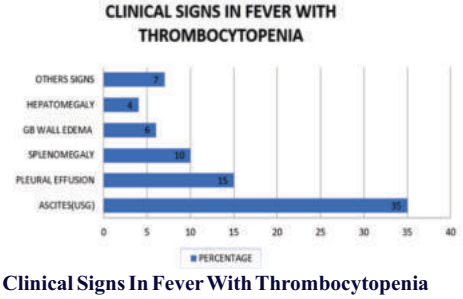

Fig:4) Clinical Signs In Fever With Thrombocytopenia

Table:-1) Comparision of Tables of Fever With Thrombocytopenia

DIAGNOSIS	NAIR STUDY(%)	SRINIVAS STUDY (%)	PRTIHVIR AJ STUDY(%)	PRESENT STUDY
DENGUE	14	14	15	40
MALARIA	9	41	54	15
SEPTICEMIA	27	19	4	10
ENTERIC FEVER	15	24	6	0
OTHERS	18	2	21	30

DISCUSSION:

In this study infection was the established diagnosis in 70% of the cases. Dengue (40%) was the commonest cause of fever with thrombocytopenia. In a study by Srinivas et al(3) infections were also the most common cause but here malaria (41%) was the most common cause of fever with thrombocytopenia followed by enteric Fever (24%), septicemia (19%), dengue (14%).

In another study by Prithviraj Patil et al(4) malaria (54%) remained the most common cause followed by dengue (15%), other causes (21%), enteric Fever (6%), septicemia (4%) (Table4). This may be due to seasonal and geographical variation. Incidence and Prevalence of various infections vary seasonally and geographically. Some infectious diseases occur cyclically. A study conducted during epidemic of a disease shows high incidence of the same. Therefore, duration and time period of study conducted also affect the study results. Available resources also affect the diagnosis of a disease.In most of the studies infections represented the most important cause of fever with thrombocytopenia with a relative frequency ranging from 68% -100%. However, in a study by Nair PS, Jain A, Khanduri U, Kumar V(5) (2003) at St. Stephen's hospital, New Delhi, for period of one and half years, a total of 109 cases (76 male, 33 female patients) were studied with the same criteria as in our study. Septicemia with 29 cases was the leading cause of fever associated with thrombocytopenia. Second common cause was enteric fever followed by dengue and malaria with 16, 15 and 10 cases respectively.

In our study 95% of patients showed increase in platelet counts at the time of discharge.

CONCLUSION:

Febrile thrombocytopenia is the most common cause for admission to the hospital which requires extensive evaluation and prompt management. Dengue infection(40%) was commonest followed by Undifferentiated fever(30%), Malaria (15%) forms the third commonest cause in our study and spontaneous bleeding manifestations were common when Platelet count were less than 20,000

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