A STUDY OF CLINICAL AND LABORATORY PROFILE OF FEVER WITH THROMBOCYTOPENIA

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ABSTRACT:
Background: Infection is a common cause of thrombocytopenia. Detection of thrombocytopenia associated with fever helps to narrow differential diagnosis and management of fever. It also helps to know the various complications of thrombocytopenia and its management and outcome of the patient.
Methods: 100 patients aged > 12 years with fever and thrombocytopenia seen between July 2020 to November 2021 were included for this study.
Results: Infection was the commonest cause of thrombocytopenia and dengue was the commonest infection. Bleeding manifestations were seen in 12 % of patients. Petechiae/purpura as the commonest bleeding manifestation followed by gum bleeding. Good recovery was noted in 92% while 8% had mortality. 50% of patients with platelet count below 20,000 does not needed platelet transfusion.
Conclusions: Infections, particularly dengue was the commonest cause of fever with thrombocytopenia. In majority of patients, thrombocytopenia was transient and asymptomatic but in significant number of cases there were bleeding manifestations.
Spontaneous bleeding was noted in platelet count of < 20,000/mm3 in majority of patients, petechiae /purpura was seen in platelet count in range of 20,000-40,000/mm3. On treating the specific cause drastic improvement in platelet count was noted during discharge and further follow-up.

Key Words: Fever, Thrombocytopenia, Dengue, Bleeding.

INTRODUCTION::.

A number of types of fever were known as early as 460 BC to 370 BC when Hippocrates was practicing medicine including that due to malaria (tertian or every 2 days and quartan or every 3 days).It also became clear around this time that fever was a symptom of disease rather than a disease in and of itself.An older term, febricula (a diminutive form of the Latin word for fever), was once used to refer to a low-grade fever lasting only a few days. This term fell out of use in the early 20th century, and the symptoms it referred to are now thought to have been caused mainly by various minor viral respiratory infections.

The febrile response is orchestrated by the central nervous system through endocrine, neurological, immunological and behavioural mechanisms. Other than a regulated rise in body temperature, fever is often accompanied by various sickness behaviours, changes in metabolic and physiological characteristics of body systems and alterations in immune responses.

Thrombocytopenia is defined as platelet count <1,50,000/microliter. This is due to decreased production, increased destruction, increased sequestration in spleen. Of this infection is the most common cause. Fever with thrombocytopenia narrows the Differential diagnosis of the clinical entity

In recent years, with the onset of monsoon, a rising trend has been observed in the number of cases of febrile thrombocytopenia of varied etiology. The causes of thrombocytopenia are varied ranging from idiopathic, infectious to inflammatory. Infections, like malaria, dengue, leptospirosis, typhoid, viral fever, and septicemia, are few of the common causes of fever with thrombocytopenia

METHODS

All patients admitted in our Hospital with fever and thrombocytopenia were evaluated.
History was taken regarding Duration of fever, occupation and history of travel. Symptoms other than fever ,headache, nausea, vomiting, abdominal pain, diarrhea cough, , anorexia, myalgia, gum bleeding, hematemesis , conjunctival suffusion, oliguria, hematuria , loss of weight, etc., were noted. Signs like rashes, signs of dehydration, petechiae, jaundice, Lymphadenopathy, hepatomegaly, splenomegaly, anemia, abdominal
Tenderness, added sounds in lungs, altered sensorium, etc., were also noted Investigations like complete hemogram, ESR, Liver function tests, Routine urinary examination, urine for bile salts and bile pigments, Renal Parameters like blood urea, serum creatinine, serum electrolytes, peripheral smear, x-ray chest, USG abdomen were done on admission. Other special investigations like peripheral smear for MP, dengue Serology, widal study, sputum AFB, ELISA for HIV1 and 2, blood culture and urine culture. During the hospital stay, all the patients were subjected repeat CBC Daily. The renal function tests were repeated every third day Unless the patient developed ARF for whom the tests were done daily. Follow up of all patients regarding treatment and outcome were done During the hospital stay. The causes of fever with thrombocytopenia are so numerous, a simple workable classification is presented in-
1. Viral causes: CMV, HSV, HIV, hantana, dengue, parvo-B19
2. Bacteria:Gram +ve and gram-ve septicaemia, military tuberculosis, Leptospirosis, typhoid.
3. Protozoal causes:Malaria
4. Others:Leukemia, lymphoma etc

MATERIALS AND METHODS

The present study was done in patients admitted to Our Hospital over a period of one year.
SELECTION CRITERIA:
All patients more than 12 years of age with fever (temperature >99.90F) and platelet count less than 1,50,000 cells/cu.mm.
No. Of patients selected: 100 EXCLUSION CRITERIA:
All patients less than 12   years of age.
All patients with thrombocytopenia without fever.
Diagnosed cases of platelet disorders and dysfunction
Patients on treatment with antiplatelet drugs and other drugs causing thrombocytopenia.
Pregnant women.

PEROID OF STUDY:

All patients were age of ≥ 12 years who were admitted as in-patients between June 2020 to December 2021 in the Medicine Department in SMT. SCL Hospital Ahmedabad for fever with thrombocytopenia.
STUDY DESIGN: Prospective study
In the present study, result shows that majority of patients had platelet count between 50,000 to 1,00,000(56%) while 06 (6%) patients had platelet count <10,000 and 16% patients had platelet count between 10,000-20,000.
RESULTS:

TABLE 1- CLINICAL SYMPTOMS OF PATIENT:

SYMPTOMS	NUMBER OF PATIENTS	PERCENTAGE
FEVER	100	100%
CHILLS AND RIGOR	66	66%
MYALGIA	64	64%
ABDOMINAL PAIN/VOMITING	24	24%
COUGH	9	9%
BREATHLESSNESS	9	9%
BLEEDING GUM	2	2%
GI BLEEDING	2	2%
CONJUNCTIVAL SUFFUSION	7	7%
ALTERED SENSORIUM	11	11%
PETECHIA	7	7%
PURPURA	12	12%
ABDOMINAL DISTENSION	18	18%

In the present study all the patients had complain of fever with rigor and chills in 66 patients(66%), followed by Myalgia in 64 patients (64 %) abdominal pain and vomiting in 24 patients(24%). Bleeding Manifestations were present in only 9 patients(9%).
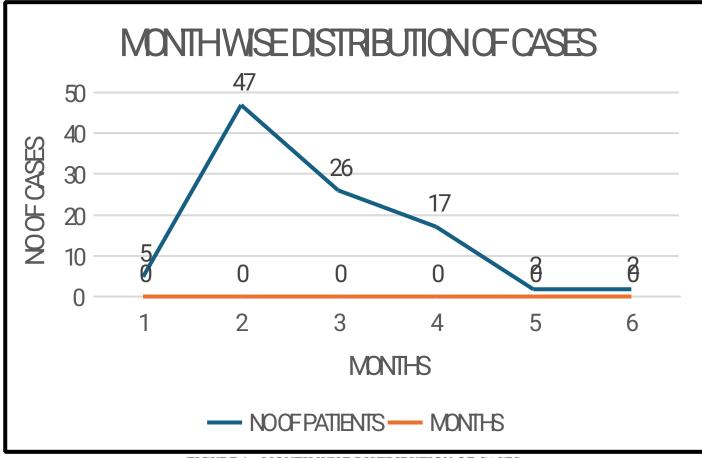
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FIGURE 1 – MONTH WISE DISTRIBUTION OF CASES

In the present study, the diseases were most commonly prevalent in the month of July to September (78%) followed by October to December (21%).

TABLE 2-ETIOLOGY OF DISEASE:

Sr no	Etiology	Number of Patients	Percentage
1	DENGUE HEMORRHAGIC FEVER	40	40%
2	DENGUE HEMORRHAGIC SHOCK	8	8%
3	MALARIA P. VIVAX	10	10%
4	MALARIA P. FALCIPARAM	10	10%
5	THPHOID	19	15%
6	HIV	2	2%
7	SPECTICEMIA	8	8%
8	TB	3	3%

In the present study, results shows that almost half of the patients were of dengue fever (48%), nearly above one forth patients were of malaria (20%), and other patients were of enteric fever (19%) , HIV (2%), Tuberculosis (3%) and Septicemia (8%).

TABLE 3 – PLATELET COUNT

Sr no	Etiology	Number of Patients	Percentage
1	<10,000	06	6%
2	10,000-20000	16	16%
3	20,000 to 50,000	18	18%
4	50,000 to 1,00,000	56	56%

5	1,00,000 to1,50,000	4	4%

In the present study, result shows that majority of patients had platelet count between 50,000 to 1,00,000(56%) while 06 (6%) patients had platelet count <10,000 and 16% patients had platelet count between 10,000-20,000.

TABLE 4- BIOCHEMICAL PARAMETERS

Parameters	Number ofPatients	Percentage
Anaemia	41	41.00%
Leukopenia	39	39.00%
Altered Liver function	24	24.00%
Altered Renal Function	28	28.00%

In the present study, results shows that Anemia was present in majority of patients (41 patients). Leucopenia was present in 39 patients, altered liver function in 24 patients and altered serum creatinine in 28 patients.
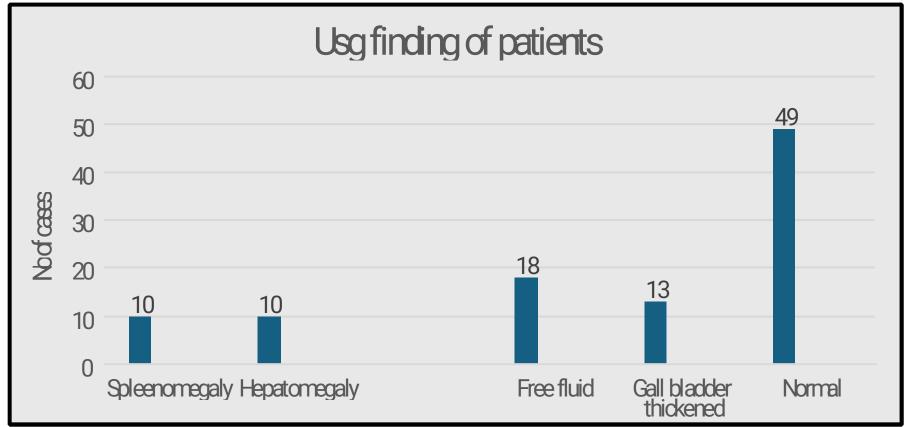

FIGURE 2 – USG FINDINGS OF PATIENTS
In the present study, result shows out of total patient of fever with thrombocythemia 18 patient had usg findings of free fluid and 13 patient had gall bladder thickened And 10 patient had splenomegaly and 10 had hepatomegaly.

TABLE 5-MORTALITY AMONG THE PATIENTS

SR.NO	MORTALITY	PERCENTAGE
Cured	96	96%
Expired	4	4%

In the present study, out of 100 patients, majority of patients were survived (96%) while 04 (4%) patients were expired.

TABLE 6-OUTCOME AS PER ETIOLOGY:

ETIOLOGY	NO.OF PATIENTS	NO.OF PATIENTS EXPIRED (%)
Dengue	48	02(50%)
Malaria	20	01(25%)
Enteric fever	19	00
Hiv	02	00
Tuberculosis	03	00
Septicemia	08	01(25%)

In the present study, out of 4 expired patients, dengue fever had higher mortality (50%) followed by malaria(25%) and septicemia (25%).There is no mortality in Enteric fever ,HIV and Tuberculosis.

DISCUSSION:
Fever is the main clinical symptom of various tropical diseases. The etiologies of human febrile illness can vary region wise in India suggesting that diagnosis, treatment and control programs need to be based on a methodical evaluation of area specific etiologies. Common causes of fever with thrombocytopenia include dengue, malaria, enteric fever, HIV, Septicemia, tuberculosis, etc.
This prospective sectional study was conducted in our hospital during the period of JULY 2020 DECEMBER 2021. The present study includes 100 patients presented with fever and thrombocytopenia.
In the present study, among 100 patients ,60 were male (60%) and 40 were female
(40%). And most commonly affected age group was from 12-35 years (59%) followed by 26-35 years (21%). 66% of the patients presented with complaints of fever with rigor and chills followed with 64% with Myalgia, 24% with abdominal pain and vomitingIn the present study, <20000 platelet count was present in 22%, 20,000-50,000 was present in 18% which is similar as compared to 7% and 15% respectively , out of 100 patients 28 patients (28%) had bleeding manifestations., Mortality was   4%   compared with the study.

SUMMARY:A prospective study of 100 patients, who had fever and thrombocytopenia was done in our hospital. The inclusion and exclusion criteria were followed according to the criteria' mentioned in the material and methods of the study.
1. The age range of the patient was 13-70 years, with male and female ratio being 1.5 :1.
2. Most of the cases admitted during July to December.
3. Among bleeding manifestation, purpura 12% is the most common Followed by bleeding gum 7% and GI bleeding is least 2%.
4. A definitive diagnosis was made in 100% of the case.
5. Among the diagnosed case, dengue is most common cause of fever with Thrombocytopenia (48%). Out of this 48 cases, 40 cases were dengue Hemorrhagic fever. 8 cases were dengue hemorrhagic shock.
6. Other cases diagnosed were malaria, typhoid, septicaemia, HIV, miliary tuberculosis.
7. Out of 20 cases, 10 cases were p.vivax and 10 cases were p.falciparum.
8. Among 100 cases, most of the patients with platelet count between 50,000 to 1,00,000, 18 cases between 20,000 to 50,000 ., 22 cases had platelet below 20,000.
9. Clinical manifestation of the thrombocytopenia are present only in 28 Cases out of 100 cases.
10. 10.In the present study 41% of patient had anemia , out of which majority (39%) Were dengue fever and 24% patient had altered liver function test in which majority case were malaria (29%) and enteric fever (37%).
11. 11.In present study 6 case had platelet count <10000 who all needed blood products transfusion.16 patients with 10000-20000 platelet count, 10 patients improved with blood products transfusion.
12. 12.Out of 100 cases, 28 cases had elevated renal parameter. Out of this 28 Cases, 24 patients renal parameter improved with rehydration alone.
13. 13.In general, 96 cases had recovered and 4 cases had expired
14. 14.Out of 4 expired patients, dengue fever had higher mortality{2} patients (50%)} and all expired patients of dengue fever had platelet count between 10000-50000.
15. Malaria had mortality of 1 patients (25%), One patient of Septicemia also expired.

CONCLUSION:
1. Maximum prevalence of febrile thrombocytopenia due to infectious etiology are in young, in male, in rainy and early winter season with summative effect of endemicity of disease in particular geographical region.
2. Dengue is the commonest cause of febrile thrombocytopenia followed by malaria.
3. Risk of bleeding increase when platelet count decreases below 20000. There is no absolute relationship between platelet count and severity of bleeding. In majority of the patient, thrombocytopenia present without bleeding manifestation.
4. Prompt diagnosis and immediate specific treatment of underlying etiology of febrile thrombocytopenia with maintenance of platelet count and hemostatic function gives good recovery.

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