A Study Of Clinical Profile, Laboratory Profile And Complications 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.

Aim Of The Study: To study of incidence of various etiological agents for patients getting admitted for fever with thrombocytopenia.

Methods: 100 patients aged > 12 years with fever and thrombocytopenia seen between December 2020 to November 2021 were included for this study. 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 , xray chest, USG abdomen were done on admission. Other special investigations like peripheral smear for MP, dengue serology, widal study, IgM antibody for leptospirosis, sputum AFB, ELISA for HIV1 and 2, blood culture and urine culture, bone marrow aspiration.

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.

Keywords: Thrombocytopenia, Clinical Profile, Septicemia, Dengue Fever, Malaria, Bleeding Manifestations

Introduction

Thrombocytopenia refers to a reduction in platelet count below 1.5 lakh/microliter.[1] It is the commonest abnormality encountered in clinical practice with variable clinical expression. The symptomatology may vary greatly and the underlying cause may be either inconsequential or life threatening. [2] Infection like malaria , dengue, leptospirosis, typhoid, HIV, and miliary tuberculosis are some of the common causes of fever with thrombocytopenia. In a tropical country like India, infectious causes predominate and are usually associated with fever, also drugs, autoimmunity, Hypersplenism, DIC, malignancy are among the leading causes of thrombocytopenia. Pseudo thrombocytopenia should always be ruled out

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first by peripheral smear examination.[3] Because platelet counts are prone to error, a single platelet count that is lower than normal should be confirmed by a second count. It should also be confirmed by inspecting the blood film.[4,5] The life span of [6]platelets once they enter the circulation is about 8-10 days. About 10% of the population is destroyed each day. Thrombocytopenia may result from impaired platelet production, accelerated platelet destruction, or dilution/splenic sequestration.[4,5] Of these infections being the commonest cause of thrombocytopenia.

Therefore a well organised systemic approach that is carried out with an awareness of cause of fever with thrombocytopenia can shorten the duration of investigation and bring out diagnosis.[7] Hence, need for study to know the causes and complications of fever with thrombocytopenia.

Methods: 100 patients aged > 12 years with fever and thrombocytopenia seen between December 2020 to November 2021 were included for this study. 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 , xray chest, USG abdomen were done on admission. Other special investigations like peripheral smear for MP, dengue serology, widal

study, IgM antibody for leptospirosis, sputum AFB, ELISA for HIV1 and 2, blood culture and urine culture, bone marrow aspiration.

Selection Criteria:

All patients more than 12years of age with fever (temperature >99.9[0]F) and platelet count less than 1,50,000 cells/cu.mm.

Exclusion Criteria:

All patients less than 12 yrs 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. During the hospital stay, all the patients were subjected repeat CBC once in 2 days. 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.

Table :1 Age Wise Distribution Of Cases

Total number of cases admitted with fever with thrombocytopenia is 100. Out of this 100 cases, 70 cases were male and 30 cases were female with male female ratio is 2.3:1. Most of the cases admitted between age 26 to 35. The mean age for male and female cases was 33.76 and 33.1 respectively.

AGE	NO. OF CASES	PERCENTAGE
12 -25	22	22%
26-35	38	38%
35-45	32	32%
>45	8	8%

Table 2: Symptoms

SI NO	SYMPTOMS	NO OF CASES	PERCENTAGE
1	FEVER	100	100%
2	CHILLS AND RIGOR	62	62%
3	MYALGIA	63	63%
4	ABD PAIN/ VOMITTING	28	28%
5	COUGH	8	8%
6	BREATHLESSNESS	25	25%
7	BLEEDING GUM	10	10%
8	RASHES	12	12%
9	GI BLEEDING	3	3%
10	CONJUCTIVAL SUFFUSION	12	12%
11	LOSS OF WEIGHT	9	9%
12	ALTERED SENSORIUM	12	12%

Table 3:Distribution Of Signs

SI NO	SIGN	NO OF CASES	PERCENTAGE
1	DEHYDRATION	38	**38%**
2	PALLOR	**12**	**12%**
3	JAUNDI E	**10**	**10%**
4	HYPOTENSION	**11**	**11%**
5	HEPATOMEGALY	**10**	**10%**
6	SPLENOMEGALY	**9**	**9%**
7	PLEURAL EFFUSION	**9**	**9%**
8	HAEMORRAGHIC FUNDUS	**4**	**4%**

Out of 100 cases, most common causes for fever with thrombocytopenia is dengue fever(42) , followed by malaria (21) and leptospirosis(11). Etiological distribution is given below

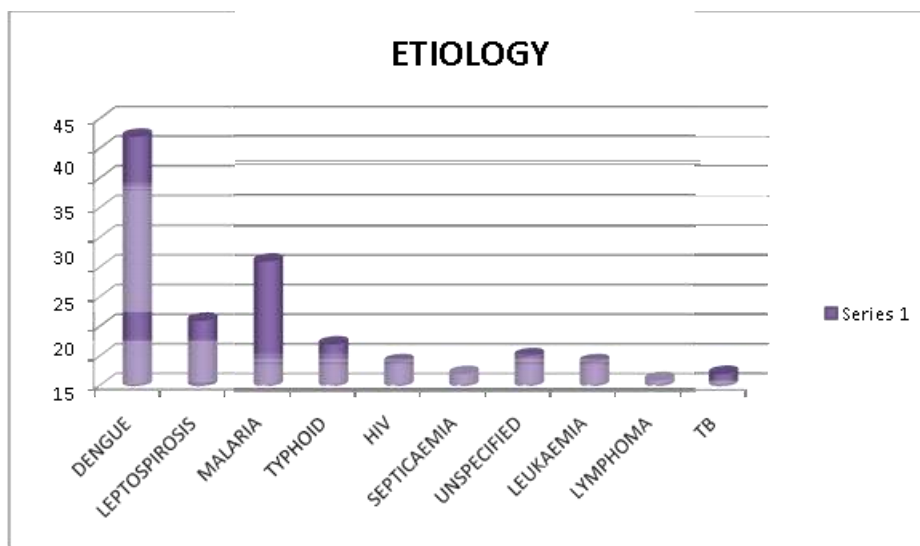**Graph :1 Distribution Of Etiological Agents**

Table 4 :Platelet Count

SI.NO	PLATELET COUNT	NO OF CASES	PERCENTAGE
1	<1,50,000	100	100%
2	>40,000	60	60%
3	20,000 TO 40,000	17	17%
4	<20,000	23	23%

Table 5 Renal Profile

| SI NO	BLOOD UREA	NO OF CASES
1	<40	88
2	40-60	5
3	60-100	2
4	>100	5

Table :6 Liver Function Test:

Out of 100 cases, 13 cases had elevated liver function test. Out of this 13 cases , 6 patient had bilirubin level > 5.0mg/dl. Out of this 6 cases, 3 patients were died. Distribution of bilirubin level, SGOT, SGPT, ALP is given below

LFT	MEAN	RANGE
Sr. bilirubin	2.14mg/dl	0.8- 18.0mg/dl
SGOT(U/L)	53.10	21-360
SGPT(U/L)	57.54	23-336
ALP(IU/L)	82.53	54-179

Graph :2 Usg Abdomen:
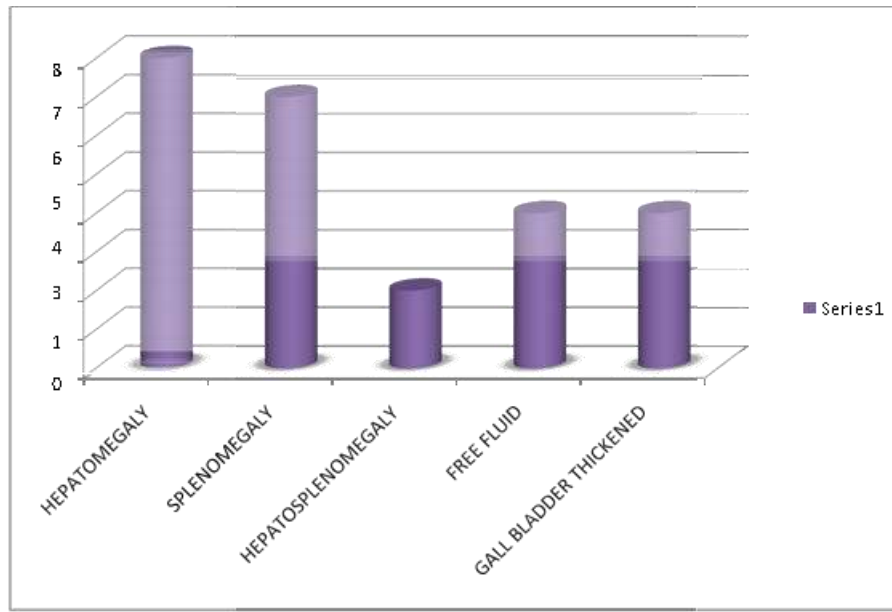
Graph 3 X Ray Chest Pa View
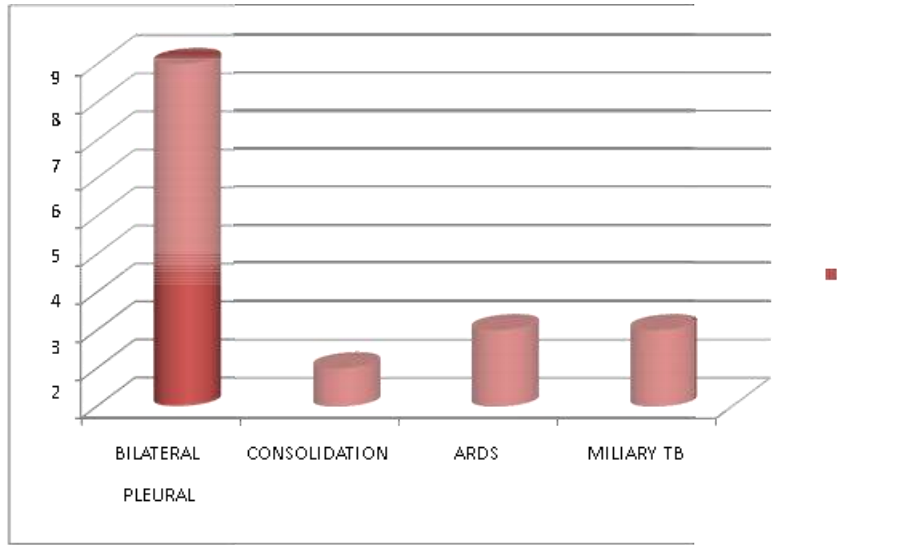
Discussion

For a study of fever with thrombocytopenia, patient must satisfy above mentioned criteria's, prospective case collection is necessary and careful follow up is warranted. The three conditions allow the delineation of standard study population.Out of 100 cases admitted with history of fever with thrombocytopenia, most common causes is infectious.Out of this infectious condition, dengue is the most common cause (42%), second most common cause is malaria 21%. Most of the patients were in the working group aged between 25 and 35 years. Further most of them were males (2.3:1). Further as far as the Seasonal Distribution of cases were concerned, most of the cases were admitted during the months of September, October and November during which the Northwest monsoon is active in Tamil Nadu though sporadic cases were also seen during other months of the year. [8]Among symptoms other than fever, myalgia is most common 63%, followed by chills and rigor 62%. Among bleeding manifestation, purpura 12% is the most common followed by bleeding gum 10% and GI bleeding is least 3%.Out of 100 cases, 38% patients had dehydration at the time of admission.[9] Among 38% , 11% patients had hypotension during admission. Most of the patients improved with treatment except few.Among 100 cases with reduced platelet count, 60% cases had platelet above 40,000. 17% case had platelet between 20,000 to 40,000. Remaining 23% cases had platelet below 20,000.[10]Among 17 patient with platelet count between 20,000 and 40,000, 15 patients cured without blood transfusion. Only 2 patients needed blood transfusion.Among 23 patient with <20000 platelet count, 12 patients improved without platelet transfusion. So only 11 patients actually need blood transfusion.[11] Out of this 11 patients, 5 patients platelet count improved with FFB alone. So 6 out of 23 patients actually needed platelet transfusion.Septicaemia 29% was the leading cause of fever associated with thrombocytopenia. Second common cause was enteric fever followed by dengue, malaria.[12]In conclusion our study of fever with thrombocytopenia reveals that Infection is the most commonest cause, among infections , dengue is the common cause because of seasonal and regional variation. Second most common cause is malaria, in that p.vivax is more common. [13]Petechiae is common bleeding manifestation. Blood transfusion is not needed for all the cases even when platelet is below 20,000. Acute renal failure is the common complication.[14,15]

Conclusion

Fever with thrombocytopenia is one of the most challenging problems in the field of medicine.Fever with thrombocytopenia consists of occult presentation of common disease rather than rare disease.Infection is the most common cause of fever with thrombocytopenia.Dengue, malaria, leptospirosis still present clinically in atypical and occult form, making diagnosis more difficult. So high index of clinical suspicion is needed.So other than routine investigation they should do specific test like

rapid spot test, IgM ELISA for dengue, IgM ELISA leptospirosis antibodies, widal test etc for correct diagnosis.

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