

Clinical Outcome of Acute Febrile Illness with Thrombocytopenia among Patients at Tertiary Care Hospital

Jakkula Bhaskar¹, Chatala Sridhar²

¹Assistant Professor, Department of General Medicine, Chalmeda Anand Rao Institute of Medical Science, Karimnagar.

²Assistant Professor, Department of General Medicine, Chalmeda Anand Rao Institute of Medical Science, Karimnagar.

Corresponding Author: Chatala Sridhar

ABSTRACT

Identifying clinical outcome of febrile thrombocytopenia from acute febrile illness. Acute fever with thrombocytopenia is a common problem with increased mortality and morbidity if not diagnosed and treated properly in time. Usually in condition commonly caused by infection like malaria, dengue, enteric fever and septicaemia. It is necessary to know the cause, which will be useful to give proper treatment to patient.

Aims and Objective: To study the clinical outcome of acute febrile illness with thrombocytopenia.

Material and Method: This is Hospital based longitudinal study was conducted on 174 patients who present with fever, with thrombocytopenia and were admitted in General Medicine department in Chalmeda Anand Rao Institute of Medical Sciences, Karimnagar from June 2018 to May 2019.

Result: Fever with thrombocytopenia affected all age group was but majority of 65 patients in the age group 25 - 40 years. Malaria was the commonest cause (35.1%) as compared to dengue (8.6%).

Conclusion: Outcome depends on the underlying cause of fever, early diagnosis and treatment.

Keywords: Acute Febrile Illness, Fever, Thrombocytopenia, Malaria, Dengue.

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). This shift of the set point from "normothermic" to febrile levels very much resembles the resetting of the home thermostat to a higher level in order to raise the ambient temperature in a room. Once the hypothalamic set point is raised, neurons in the vasomotor centre are activated and vasoconstriction commences. The individual first notices vasoconstriction in the hands and feet. Shunting of blood away from the periphery to the internal organs essentially decreases heat loss from the skin, and the person feels cold. For most fevers, body temperature increases by 1°–2°C. Shivering, which increases heat production from the muscles, may begin at this time; however, shivering is not required if heat conservation mechanisms raise blood temperature sufficiently. Non-shivering heat production from the liver also contributes to increasing core temperature. In humans, behavioural adjustments (e.g. Attention must be paid to the chronology of events and to other signs and symptoms preceding the fever. The temperature may be taken orally or rectally, but the site used should be consistent, putting on more clothing or bedding) help raise body temperature by decreasing heat loss¹.

Malaria is a significant and serious health problem in urban area of Maharashtra state and particularly in Mumbai & its

surrounding areas. In the recent years there has been a sharp rise in the incidence of malaria & other vector borne diseases in this region due to rapid growth and urbanisation, which has lead to construction boom. This represents a major challenge for public health in urban areas. There is an increase in the number of malaria cases with the onset of rainy season and so is the incidence of P. falciparum in the recent years, which is a matter of grave concern. Over-treatment with antimalarial drugs in non-malarial acute undifferentiated fever is a significant problem in India. This rampant use of antimalarials poses problems like adverse side effects of drugs, drug resistance and increased cost². Serious consideration of other aetiologies may not occur unless there is no clinical response to antimalarial treatment. The lack of affordable diagnostic tests and knowledge of the prevalence of other infectious diseases means that febrile patients are not managed optimally. Ordering microbiologic tests late in the patient's illness may be of limited use if patients have also received empirical antibiotic treatment and/or have shown development of complicating nosocomial infections. These factors may promote the development of antibiotic and antimalarial resistance and unnecessary morbidity and mortality.

Thrombocytopenia is defined as platelet count below the normal range which is 150, 000-450, 000/mm³. Thrombocytopenia results from four processes: deficient platelet production, accelerated platelet destruction, abnormal distribution and artifactual 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.

There are problems of sanitation which might have impact on incidence of vector borne as well as water borne

diseases. So study was done to assess clinical outcome in acute febrile illness with special reference to Malaria patients in tertiary care hospital of karimnagar city.

Objectives of the Study:

1. To identify the various causes of fever with thrombocytopenia.
2. To assess the complication associated with fever with thrombocytopenia.

MATERIALS AND METHODS

This Hospital based longitudinal study was undertaken in General Medicine department in Chalmeda Anand Rao Institute of Medical Sciences, Karimnagar from June 2018 to May 2019.

Inclusion criteria: All acute febrile illness patients admitted in General Medicine wards above 14 years of age with fever (>37.5°C) and thrombocytopenia (<1, 50000/mm³).

Exclusion Criteria:

- a) Patients not presenting clinically with fever.
- b) Patients not admitted in wards or treated at outpatient department.
- c) Patients of less than 14 years of age will be excluded from the study.

Sample Size: A total of 174 patients admitted in department of General medicine were included based on the above inclusion and exclusion criteria.

Protocol

Informed written consent was taken from all patients. Their clinical features were recorded using standard data collection sheet for all patients. An interview based semi-structured questionnaire was developed under expert guidance after review of literature was used to collect data.

The data collection sheet also asked for demographic data of patient, days of fever, presenting symptoms (headache, myalgia, nausea and vomiting, arthralgia, retro-orbital pain and rash).

We analysed the data using SPSS version 18. For non-categorical and normally distributed data, Student's t-test was used. For categorical data, χ^2 tests were

used and odds ratios were calculated accordingly for each of the presenting symptom. Significant level of difference was defined as $p < 0.05$. Universal sampling, i.e. all patients meeting the inclusion criteria were enrolled in the study. Institutional Ethical Committee approval was obtained before the start of the study.

RESULTS

The present hospital based Longitudinal Study was carried out during June 2018 to May 2019, to assess clinical outcome in acute febrile illness patients in a tertiary care hospital, Karimanagar. The total numbers of study subjects were 1860 in the study.

A total of 174 patient admitted over a period of one year in this Hospital were studied. Among the total 174 cases 44 were male and 130 were female. Commonest age group affected in most of this infection was 65 patients were in the age group of 25 - 40 years & 57 patients were in the age group of 14 - 24 years. Mean age of the patients in this study was 34.01 years (range 14-89, $SD \pm 15.34$).

Table No.1. Age wise distribution.

age group	sex		Total
	0.0	1.0	
14 - 24	44	13	57
25 - 40	50	15	65
41 - 60	28	14	42
61 - 90	8	2	10
Total	130	44	174

Table No. 2. Clinical feature in patients with febrile thrombocytopenia.

Signs & Symptoms	No. Of Cases (%)
Fever	174 (100.0%)
Vomiting	75 (43.1%)
Abdominal Pain	30 (17.2%)
Chest Pain	4 (2.3%)
Cough	29 (16.6%)
Breathlessness	9 (5.2%)
Hemoptysis	4 (2.3%)
Loose Motion	20 (11.5%)
Headache & Bodyache	90 (51.7%)
Arthralgia	34 (19.5%)
Bleeding tendency	5 (2.9%)
Anemia	70 (40.2%)
Pallor	78 (44.8%)
Icterus	24 (13.8%)
Oedema	3 (1.7%)
Lymphadenopathy	2 (1.1%)

Common sign and symptom in this study was fever (100%), vomiting(43.1%), abdominal pain (17.2%), Chest pain (2.3%), Cough (16.6%), Breathlessness (5.2%), Hemoptysis (2.3%), Loose motion (11.5%), headache & body-ache (51.7%), Arthralgia (19.5%), Bleeding tendency (2.9%), Anaemia (40.2%) & Pallor (44.8%).

Table No. 3. Comparison of causes of fever with thrombocytopenia.

Diagnosis	Thrombocytopenia
Malaria	61 (35.1%)
Dengue	15 (8.6%)
Leptospirosis	2 (1.2%)
Typhoid	2 (1.2%)
Hepatitis	3 (1.7%)
AFI RTAMAB	43 (24.7%)
Mixed Infection	2 (1.2%)
UD AFI	8 (4.6%)
LRTI	5 (2.9%)
UTI	5 (2.9%)
Tuberculosis	12 (6.9%)
PCP	2 (1.2%)
Septicaemia	12 (6.9%)
Encephalitis	2 (1.2%)
Total	174 (100.0%)

In the above table relationship between thrombocytopenia in AFI patients & diagnosis has been examined. Thrombocytopenia was more commonly associated with malaria (35.1%), dengue (8.6%) & AFI responded to antimalarials & antibiotics (24.7%). The cure rate was more amongst present with thrombocytopenia 140 (80.5%). The death rate of patients presenting with thrombocytopenia 34 (19.5%).

DISCUSSION

This study was conducted on 174 patients of acute febrile illness of fever with thrombocytopenia in Chalmeda Anand Rao Institute of Medical Sciences, Karimnagar during the study period from June 2018 to May 2019.

In our study, out of which 174 were 44 were males and 130 were females. Majority of patients 37.5% were in the age group of 25 - 40 years constituting with Mean \pm S.D. was 30.55 ± 4.61 . Majority of patients 70.1% were in Hindu, followed by 27.6% were Muslim & 3.3% were Other religion.

In our study fever (100.0%) was the commonest symptom followed by vomiting (43.1%), abdominal pain (17.2%), Chest pain (2.3%), Cough (16.6%), Breathlessness (5.2%), Hemoptysis (2.3%), Loose motion (11.5%), headache & body-ache (51.7%), Arthralgia (19.5%), Bleeding tendency (2.9%), Anaemia (40.2%). In study by Gondhali M P et al ⁴ 90% had headache, 92% had body-ache, 43% nausea, 24% abdominal pain, 15% altered sensorium.

The commonest sign after fever was pallor in 44.8% and other sign seen in our study were icterus (13.8%), Oedema (1.7%) & Lymphadenopathy (1.1%). In study by Gondhali M P et al ⁴ 22% had pallor, 28% had icterus, 12% had hepatomegaly, 19% had splenomegaly.

In our study malaria fever was the commonest cause of febrile thrombocytopenia. Dengue fever was the commonest cause of febrile thrombocytopenia in studies by Gandhi A A et al 26.7% ⁵, Modi T et al 55.97% ⁶, Fawas M n et al 54.5% ⁷.

CONCLUSION

Fever with thrombocytopenia is one of the most challenging problems in the field of medicine. Among the patient of acute febrile illness with thrombocytopenia, most common cause is malaria followed by AFI RT AMAB, Dengue, Tuberculosis & Septicaemia. A well organised systemic approach need to be carried out with an awareness of different causes of fever with thrombocytopenia which can help to

diagnose the case early and this will reduced the cost.

REFERENCES

1. Fauci, Braunwald. Harrison's Principles of Internal Medicine; 17th edition. McGraw-Hill, 2008: 117 - 135.
2. Joshi R, Colford JM Jr, Reingold AL, Kalantri S. Nonmalarial acute undifferentiated fever in a rural hospital in central India: diagnostic uncertainty and overtreatment with antimalarial agents. Am J Trop Med Hyg. 2008; 78:393-9.
3. Stephen J. McPhee, MD. Current Medical Diagnosis Treatment; 48th edition, McGraw-Hill, 2009: 30 - 52.
4. Gondhali MP, Vethekar M, Bhangale D, Choudhary K, Chaudhary M, Patrike G. Clinical assessment of fever with thrombocytopenia-A prospective study. International Journal of Medical Research and Health Sciences. 2016;5:258-77.
5. Gandhi A, Akholkar P. Cincial and laboratory evaluation of patients with febrile thrombocytopenia. NJMR. 2015;5:43-6.
6. Modi TN, Mehta AD, Sriram AS. Original Article Clinical Profile of Febrile Thrombocytopenia: A Hospital-Based Cross- Sectional Study. Journal of Research in Medical and Dental Science 2016;4:115–20.
7. Fawas MN, Beevi KB, Valliyot B, Balakrishnan S. Study of acute febrile illness with thrombocytopenia in a tertiary care centre. Int J Res Med Sci 2018;6:455-8.

How to cite this article: Bhaskar J, Sridhar C. Clinical outcome of acute febrile illness with thrombocytopenia among patients at tertiary care hospital. *International Journal of Research and Review*. 2021; 8(2): 582-585.
