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Original Research Article.

Study to Assess the Incidence of Febrile Thrombocytopenia in Patients Visiting Medicine OPD at a Tertiary Care Hospital

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ABSTRACT

Background: Thrombocytopenia is defined as a platelet count below the 150 × 10^9/L, the 2.5th lower percentile of the normal platelet count distribution. Fever is one of the commonest presentations which are a manifestation of various infections as well as non-infective disease process. Hence, the present study was conducted for assessing the incidence of febrile thrombocytopenia.

Materials & Methods: A total of 832 patients who reported to the medicine OPD were enrolled. Diagnosis was established in all the patients after through clinical examination and thorough history taking. Blood samples were obtained in the all the patients and serum analysis was done. Incidence and profile of patients with febrile thrombocytopenia was recorded. Ethical approval was obtained from institutional ethical committee and written consent was obtained from the patients after explaining in detail the entire research protocol. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software.

Results: Febrile thrombocytopenia was seen in 56 patients. Hence, the incidence of febrile thrombocytopenia was found to be 6.73 percent. Viral etiology was seen in 39.29 percent of the patients while malaria and dengue fever was seen in 26.79 percent and 23.21 percent of the patients respectively. Septicaemia was seen in 7.14 percent of the patients. Chills were seen in 71.43 percent of the patients while jaundice, cough and pallor were seen in 21.43 percent, 32.14 percent and 75 percent of the patients respectively.

Conclusion: Infectious diseases are the most common cause of febrile thrombocytopenia.

Key words: Thrombocytopenia, Febrile, Infectious.

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INTRODUCTION

Thrombocytopenia is defined as a platelet count below the 150 × 10^9/L, the 2.5th lower percentile of the normal platelet count distribution. Typically, platelet counts higher than 50 × 10^9/L do not lead to clinical problems unless platelet dysfunction coexists with the low count; rather, they are picked up on a routine complete blood count. Medical help is usually sought by a patient with platelet counts less than 30 × 10^9/L, suffering from spontaneous bruising and purpura or with continuous/relatively long-lasting bleeding from injuries and wounds. Clinically significant spontaneous bleeding does not usually occur until the platelet count is less than 10 × 10^9/L.[1-3]

Fever is one of the commonest presentations which is a manifestation of various infections as well as non-infective disease process. An a.m. temperature of >37.2°C (>98.9°F) or a p.m. temperature of >37.7°C (>99.9°F) would define a fever. The normal daily temperature variation is typically 0.5°C (0.9°F). Thrombocytopenia results from four processes: deficient platelet production, accelerated platelet destruction, abnormal distribution and artefactual thrombocytopenia.[4-6] Thrombocytopenia due to decreased platelet production occur in vitamin B12 deficiency and folate deficiency, leukaemia, sepsis and hereditary disease, due to increased platelet destruction which can be nonimmune causes as in thrombotic thrombocytopenic purpura, haemolytic uremic syndrome, and immune causes like autoimmune or autoimmune thrombocytopenia and increased platelet sequestration as in hypersplenism. Diseases which commonly present with febrile thrombocytopenia are dengue, malaria, rickettsial, typhoid, leptospirosis, septicaemia.[5-7] Hence; the present study was conducted for assessing the incidence of febrile thrombocytopenia.

MATERIALS & METHODS

The present study was conducted with the aim of assessment the incidence of febrile thrombocytopenia. A total of 832 patients who

reported to the medicine OPD, Department of General Medicine, Rama Medical College Hospital and Research Centre, Hapur, Uttar Pradesh (India) were enrolled. Diagnosis was established in all the patients after through clinical examination and thorough history taking. Blood samples were obtained in the all the patients and serum analysis was done. Incidence and profile of patients with febrile thrombocytopenia was recorded. Ethical approval was obtained from institutional ethical committee and written consent was obtained from the patients after explaining in detail the entire research protocol. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software. Chi-square test and Mann Whitney U test were used for evaluation of level of significance.

Table 1: Etiologic profile of patients with febrile thrombocytopenia

Etiologic profile	n	%
Viral fever	22	39.29
Malaria	15	26.79
Dengue fever	13	23.21
Septicaemia	4	7.14
Others	2	3.57

Table 2: Demographic profile of patients with febrile thrombocytopenia

Variable	Number
Mean age (years)	43.2
Males (%)	64.28
Females (%)	35.72
Rural residence (%)	67.86
Urban residence (%)	32.14

Table 3: Clinical profile of patients with febrile thrombocytopenia

Etiologic profile	n	%
Fever	56	100
Chills	40	71.43
Jaundice	12	21.43
Cough	18	32.14
Pallor	42	75
Myalgia	49	87.5
Bleeding	8	14.28

RESULTS

In the present study, a total of 832 patients were analysed. Among these 832 patients, febrile thrombocytopenia was seen in 56 patients. Hence, the incidence of febrile thrombocytopenia was found to be 6.73 percent. Among these 56 patients, 36 patients were males while the remaining 20 patients were females. 38 patients were of rural residence while the remaining 18 patients were of urban residence. Mean age of the patients with febrile thrombocytopenia was 43.2 years. Viral etiology was seen in 39.29 percent of the patients while malaria and dengue fever was seen in 26.79 percent and 23.21 percent of the patients respectively. Septicaemia was seen in 7.14 percent of the patients. Chills were seen in 71.43 percent of the patients while jaundice, cough and pallor were seen in 21.43 percent, 32.14 percent and 75 percent of the patients respectively.

DISCUSSION

Fever is an inescapable and pervasive topic in human myth, workmanship and science. Fever is such a typical sign of disease that it is not astonishing to discover precise depictions of the febrile patients in early-written history. Most instances of delayed fevers are examples of surely understood ailments showing them atypically. The real example of realistic recording of fever is variable that it is not useful in indicating particular analysis constantly a forceful symptomatic exertion is generally legitimized in light of the fact that remedial or palliative measures would so be able to frequently bring into utilization once the finding has been accomplished. Fever is characterized as a rise of the body temperature over the ordinary circadian range as the consequence of an adjustment in the thermoregulatory focus situated in the front hypothalamus. Despite the fact that thrombocytopenia is experienced in different illnesses, it is for certain that possibly lethal seeping because of thrombocytopenia is rare.[8- 11] Hence; the present study was conducted for assessing the incidence of febrile thrombocytopenia.

In the present study, a total of 832 patients were analysed. Among these 832 patients, febrile thrombocytopenia was seen in 56 patients. Hence, the incidence of febrile thrombocytopenia was found to be 6.73 percent. Among these 56 patients, 36 patients were males while the remaining 20 patients were females. 38 patients were of rural residence while the remaining 18 patients were of urban residence. Mean age of the patients with febrile thrombocytopenia was 43.2 years. Saini KC et al assessed the underlying etiology of fever with thrombocytopenia, the various presentations and complications in our community. A cross-sectional epidemiological study was conducted including 1217 patients aged more than 14 years with fever and thrombocytopenia admitted in the medical wards. Detailed clinical examination and routine investigations were done; specific investigations like blood culture, widal test, antigen test for malaria, IgM ELISA leptospira, IgM ELISA dengue, bone marrow aspiration/biopsy etc. were done as and when indicated. Infection was the commonest cause of thrombocytopenia and dengue was the commonest of the infections followed by malaria. Bleeding manifestations were seen in 42.7% of patients. 91.40% of patients with bleeding tendencies had petechiae/purpura as the commonest bleeding manifestation, followed by spontaneous bleeding in 57%. Spontaneous bleeding was noted when platelet counts were less than 20,000. Petechiae/Purpura were seen more commonly when platelet count was in the range of less than or equal to 50,000. Good recovery was noted in 95%, while 5% had mortality. Septicemia accounted for 85.24% of deaths followed by malaria (6.55%) and dengue (5%). Fever with thrombocytopenia is an important clinical condition commonly caused by infections, particularly dengue and malaria.[9]

In the present study, viral etiology was seen in 39.29 percent of the patients while malaria and dengue fever were seen in 26.79 percent and 23.21 percent of the patients respectively. Septicaemia was seen in 7.14 percent of the patients. Chills were

seen in 71.43 percent of the patients while jaundice, cough and pallor were seen in 21.43 percent, 32.14 percent and 75 percent of the patients respectively. In another study conducted by Vishnuram P et al, authors analysed the clinical symptomatology and hematological evaluation with an emphasis on platelet indices in relation to predicting the outcome of the febrile thrombocytopenic patients admitted in Coimbatore medical college hospital. This is a prospective study involving 100 adult patients who presented to our hospital with fever and thrombocytopenia (platelet <1,50,000). Out of 100 patients 34 were dengue positive, 66 were dengue negative. Dengue specific symptoms like myalgia and retro-orbital pain were present in 58.88% of dengue positive and 10.60% of dengue negative patients. Laboratory evaluation revealed sharp rise in hematocrit with fall in platelet count in both the groups more significant in dengue positive group. Bleeding manifestation and rashes were 29.4% and 26.4% in dengue positive, 12.12% and 7.57% in dengue negative group respectively. MPV was significantly lower in patients with bleeding manifestations irrespective of platelet count in both the groups. Mortality in their study was 2%. MPV is an independent predictor of bleeding manifestation and poor outcome.[10] Hariprasad S et al analysed the clinical profile of febrile thrombocytopenia. A total of 200 subjects were included in the present study. At the time of diagnosis, complete detailed history of all the patients was taken along with thorough clinical examination. Etiologic and clinical data of all the patients was recorded and compiled. All the results will be analysed by SPSS software 16.0. Out of total 200 cases included in the present study; fifty-two cases were due to viral fever while fifty-seven cases were due to malaria. Jaundice and cough were present in 52 and 58 cases respectively. In fifty five percent of the cases, platelet count was between 50000 to 10000 per cubic mm. Infectious diseases accounts for most of the cases of febrile thrombocytopenia.[11]

CONCLUSION

From the above results, it can be concluded that infectious diseases are the most common cause of febrile thrombocytopenia.

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