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CLINICO-ETIOLOGICAL PROFILE OF PATIENTS WITH PYREXIA AND THROMBOCYTOPENIA- A CROSS SECTIONAL STUDY

Clinical Science

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ABSTRACT

Background: Infections are the most common cause of thrombocytopenia. Hence fever associated with thrombocytopenia helps to narrow down the differential diagnosis to infectious causes, plan management and anticipate complications. **Aim:** To study the clinical-etiological profile of patients with pyrexia and thrombocytopenia. **Materials and Methods:** This is a cross-sectional study of 100 patients of age more than 18 years, admitted with fever and thrombocytopenia in a medical college hospital. The clinical profile, infectious causes, outcome and laboratory features are studied. **Results:** Dengue (45%) was the most commonest infectious cause among the patients with fever and thrombocytopenia followed by COVID-19 (21%)and malaria(11%). Bleeding manifestations were observed in 60% of the patients. Petechial rashes or purpura were the commonest hemorrhagic manifestation (45%), Gum bleeding in 8% of cases, conjunctival hemorrhage in 2% of patients, and epistaxis in 5% of cases. The majority of those with spontaneous bleeding had a platelet count of <20,000/µl. In this study, 12 patients died, 7 had dengue,4 with covid-19 positive, and one patient had dengue with malaria. **Conclusion:** Dengue is the commonest infectious disease among patients hospitalized with fever and thrombocytopenia.

KEYWORDS

INTRODUCTION

Fever is a rise of body temperature that exceeds the normal daily variation and occurs in conjunction with an increase in hypothalamic set point, in response to cytokines and acute phase proteins and occurs in infection and in noninfection conditions. [1,2] The maximum normal oral temperature is 37.2 °C (98.9 °f) at 6 A.M. and 37.7 °C (99.9 °f) at 4 P.M. [1]

Platelets are released from megakaryocytes under the influence of flow in capillary sinuses. The normal platelet count is 150,000 - 450,000/µl. The average life span of platelets is 7-10 days and it plays an important role in hemostasis. [1] Thrombocytopenia is the reduction of platelet in peripheral blood count < 150,000 / mm^3. It may occur due to disequilibrium in the balance between platelet production, distribution, and destruction. [3] Patients with thrombocytopenia may experience bleeding manifestations like petechie, Ecchymosis, epistaxis, or Upper GI bleeding or intracranial bleeding.

The causes of Pyrexia with thrombocytopenia include Infectious causes like - Dengue, Malaria, Typhoid, Milliary Tuberculosis, Sepsis - UTI and Pneumonia, Covid 19 and non-infectious causes - Drug-induced, Autoimmune -SLE, Hematological- leukemia and lymphoma. In tropical countries like India, the climatic conditions are favorable for transmission of most of these infections and a rising trend has been observed in the number of cases of fever with thrombocytopenia admitted in wards and intensive care units, with variable clinical course and unpredictable outcome.[3]

There are very limited studies in the past to evaluate the Etiology and clinical presentations of fever with thrombocytopenia. Therefore, need for study to evaluate causes and clinical features of patients with febrile thrombocytopenia.

MATERIALS AND METHODS

A prospective cross-sectional study was conducted in Department of medicine at Rohilkhand Medical College and Hospital, Bareilly, Uttar Pradesh from November 2020 to October 2021, on 100 patients above age of 18 years, admitted for pyrexia with thrombocytopenia.

Inclusion Criteria

1. Fever of duration less than 14 days and platelet count less than 1,50,000/mL.(4)
2. Patients of both sexes of age 18 to 55 years of both sexes. (5)

Exclusion Criteria

1. Pregnant females.
2. Already diagnosed cases of platelet disorder/dysfunction, known hemoglobinopathy, malignancy or Autoimmune disease.
3. Patients with any liver disease and chronic kidney disease.
4. Patients on drugs causing thrombocytopenia, on chemotherapy or other immunosuppressive agent.

Data was analysed by applying frequency, percentage, mean, standard deviation. Appropriate statistical tests were applied based on distribution and type of data.

RESULTS

In this study of 100 participants, a maximum of 27% were in the age group of 26-35 years followed by 25% in age group of 18-25 years, 19% were in age group of 36-45 years and 29% were in age group of >45 years, Mean age of patients was 38.51 ± 16.04 years. Out of 100 participants 74 were Female and 26 patients were Male. Fever was present in 95% of cases at time of presentation. Duration of fever was maximum 3-4 days in 43% of cases,5-6 days in 38% of cases, and 1-2 days in 13 % of cases while 6 patients had fever for one week and more duration.

Platelet count was maximum in range of 51,000-1.0 lakh in 34% of cases followed by 11-50,000 in 33 % of cases, 1.1-1.5 lakh in 29% of cases and <10,000 in 4% of cases. 88 patients recovered in our study while 12 patients succumbed to death due to illness.

Out of 100 patients 21 patients were Covid 19 positive, 45 patients had dengue, 12 patients had Dengue with Enteric fever, 7 patients had Enteric fever, 11 had Malaria, 2 patients had Malaria with Dengue with enteric fever and 2 patients had Malaria with Dengue fever.

DISCUSSION

In this study, it was observed that the maximum number of patients with fever and thrombocytopenia were in the younger age group i.e, 70% of patients were between 18-45 years, while 30% population was above 45 years. The mean age of patients was 38.51 ± 16.04 years, Similar findings were observed in Kanakale M. et al.[6], where the maximum patients were in a younger age group i.e., less than 40 years of age, whereas in study by Sukrita et al. [7] maximum patients (>70%) were in the elderly age group above 50 years. Female preponderance was seen in this study with 74% female patients and 26 % males. Male: female ration was 0.35:1. Similar results were seen in the Mural R. et al. study [8]where females (64%) out-numbered males (36%). The study was conducted in the post-covid era, hence small number of patients were included in the study. Female patients were more symptomatic and presented to the hospital, leading to more female patients compared to males. The most common etiology of fever in this study was Dengue (45%), followed by Covid-19 positive (21%), malaria was present in 11% cases, and enteric fever in 7% cases. Both Dengue

and enteric fever were present in 12% of cases, malaria, and enteric fever in 2% of cases and all three Malaria, dengue and enteric fever in 2% cases. Dengue was also the commonest etiology in a study by Lakshmi MS. et al.[9]

Malaria was the commonest cause of Febrile Thrombocytopenia in a study at Dr. D.Y. Patil Medical College, Kolhapur. [4], whereas Lohitashwa SB et al.[10]in his study observed that septicemia was the most cause of Fever with thrombocytopenia.

Other common causes of thrombocytopenia in febrile illness in various studies include- Enteric fever, Covid-19 infection, Milliary Tuberculosis, Sepsis - UTI, Pneumonia and Covid-19 infection and noninfectious causes-Drug induced, Autoimmune-SLE, Hematological-leukaemia and lymphoma, Megaloblastic Anemia.

Bleeding Manifestations were present in 60% of patients in this study. Rashes and petechiae were, present in 45% of cases, Gum bleeding in 8% cases, conjunctival hemorrhage in 2% of patients and epistaxis in 5% of cases. Hematuria and per rectal bleeding was not present in this study. Similar results were observed in the study by Gupta RS. et al.[11] In this study, 12 patients died, 7 had dengue and 4 with covid-19 positive and one patient had dengue with malaria.

CONCLUSION

Infection is one of the most common causes of fever with thrombocytopenia. Among the infections, Dengue was the most common cause of them. Malaria with typhoid with dengue can still present clinically in atypical and occult forms making diagnosis difficult and prolonged. Generally, spontaneous bleeding was noted in platelet count <20,000 while in others due to qualitative defects, it was observed in platelet count in the range of 40,000cellcu/mm. In general, 88 cases had a good recovery and 12 cases had mortality.

Limitations

This study was conducted in covid and post-COVID period, therefore small sample size was included. Also, only symptomatic and referred patients presented to the hospital being a tertiary care centre during this period, leading to variation in results.

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