A Study of Laboratory Profile of Fever with Thrombocytopenia

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Fever is a common complaint encountered in clinical practice. Infection is the commonest cause of fever. Though thrombocytopenia has various causes, infection is one of the important causes. Hence, the study is conducted to evaluate fever with thrombocytopenia. A prospective study of 200 cases with fever and thrombocytopenia. Patients were evaluated with respect to history clinical features and laboratory profile. Investigations included were:

- Blood culture, Widal test, Malaria: Thick and thin smear, Dengue: IgM ELISA, NS1 antigen IC card, Leptospirosis: IgM ELISA.
- Complete hemogram.

Malaria was the commonest cause with 34(17%) cases, followed by Enteric fever 24(12%), Dengue hemorrhagic fever 26(13%) and Leptospirosis 17(8.5%). Apart from infectious diseases, 6(3%) patients with pyelonephritis, 4(2%) patient with hyperplasia bone marrow. Bleeding manifestations were noted in 16% cases. Majority of cases 89(44.5%) had platelet count ranging from 50000-150000. Only 42(21%) cases had count less than 20000. Mortality accounted to 19(9.5%) of the cases. A total of 101(50.5%) cases were suffering from infectious diseases. A major share 89(44.5%) still remained undiagnosed by the available investigations at our center. Hence, there is a need for investigation facilities to cover wider range of microbes in a tertiary care hospital for better management of patients and preventive measures.

**Keywords:** Thrombocytopenia, Fever, Malaria.

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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). Fever is a response to cytokines and acute phase proteins and occurs in infections and in noninfectious conditions. The normal platelet count is 150000-450000/mm3. Thrombocytopenia is defined as platelet count less than 150000/mm3. Many viral and bacterial infections result in thrombocytopenia and are the most common noniatrogenic cause of thrombocytopenia. Thrombocytopenia results from one or more of three processes: (1) decreased bone marrow production; (2) sequestration, usually in an enlarged spleen; and/or (3) increased platelet destruction. Disorders of production may be either inherited or acquired. In evaluating a patient with thrombocytopenia, a key step is to review the peripheral blood smear and to first rule out “pseudothrombocytopenia,” particularly in a patient without an apparent cause for the thrombocytopenia. The causes for thrombocytopenia are varied and range from idiopathic, infectious to malignancies. Patients with acute febrile illnesses in a tropical country like India usually have an infectious aetiology and may have associated thrombocytopenia. Infections like malaria, dengue and typhoid are some of the common causes of fever with thrombocytopenia. Patients having thrombocytopenia with fever many times do not have bleeding manifestations. Hence study of correlation between platelet counts and hemorrhagic manifestations will help us to know the correct time for infusion of platelets, thus avoiding unnecessary platelet transfusion.
This study aims at studying laboratory profile and finding etiology of fever with thrombocytopenia.

**Objectives**

a) To assess clinical profile of fever with thrombocytopenia.
b) To describe the etiology of fever with thrombocytopenia.
c) To evaluate the clinical complications associated with fever with thrombocytopenia.

**MATERIALS AND METHODS**

A prospective study of 200 cases conducted between 30th November to 1st December 2012 on patients admitted in tertiary care hospital of north Karnataka.

**Inclusion criteria**

a) Adult patients of both sexes.
b) Patients admitted with fever found to have thrombocytopenia

**Exclusion criteria**

a) Patients with fever and no thrombocytopenia.
b) Patients with thrombocytopenia and no fever.

Patients admitted with fever and found to have thrombocytopenia a detailed history was taken, general physical examination done, detailed examination of various systems was done. Routine and special investigations were done as and when required. Investigations included are complete hemogram, platelet count, blood culture, widal test, malaria-thick and thin smear, dengue-NS1 IC card, IgM ELISA, Leptospirosis- IgM ELISA, urine examination and USG abdomen.

**RESULTS**

Bleeding manifestations were noted in 32(16%) of cases. Anemia was noted in 62(31%) of cases. Platelet transfusion was given to 34(17%) of cases. Blood transfusion was given to 22(11%) of cases.
of cases. Mortality accounted 19(9.5%) of cases. All were diagnosed with severe sepsis.

**DISCUSSION**

Fever with thrombocytopenia consists of occult presentations of common diseases rather than rare disease. In the present study maximum number of patients were in the age group of 26-50years (47.5%). Males were affected more as compared to females. Where as in study done by rekha et al maximum number of patients were in age group of 21-40 yeras and males and females were equally affected. Platelet count below 20000 was noted in 42(21%) of cases and above 50000 in 89(44.5%) of cases, which is comparable to study done by nair et al, bhalara et al and amita et al.

Most common cause of fever with thrombocytopenia in our study was malaria34(17%) followed by dengue26(13%), enteric fever24(12%), leptospirosis17(8.5%).

Malaria was most common cause of fever with thrombocytopenia with 34(17%) of cases. Amit et al, dash et al, patil et al studies also said malaria was common cause in their studies. But according to nair et al septicemia was commonest cause. In total 34(17%) cases of malaria 17(8.5%) were of pl.vivax, 8(4%) were of pl. falciparum and 9(4.5%) were mixed infection by both vivax and falciparum. These findings are comparable to study done by amit et al. Bleeding manifestations were noted in 32(16%) of cases. Comparable to patil et al study whereas in amit et al study 61% nair et al 41.3% cases showed bleeding manifestations. 17(8.5%) cases diagnosed as having leptospirosis. Thrombocytopenia is an important contributory factor in the pathogenesis of bleeding diathesis in leptospirosis which is the leading cause of death in this disease.

Mortality accounted for 19(9.5%) cases, all were diagnosed with severe sepsis. Our study is comparable to patil et al

**CONCLUSION**

A total of 101(50.5%) cases were suffering from infectious diseases. Most common cause was malaria 34(17%). A major share 89(44.5%) still remained undiagnosed by the available investigations at our center. Hence there is a need for investigation facilities to cover wider range of microbes in a tertiary care hospital for better management of patients and preventive measures.

**REFERENCES**

1. Fauci, Braunwald, kasper, Hauser, Longo, Jameson, Loscalzo Harrison’s principles of internal medicine 17th edition ;2008;