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CAUSES OF THROMBOCYTOPENIA IN A TERTIARY CARE CENTRE IN UTTAR PRADESH, INDIA: A RETROSPECTIVE STUDY OF 1050 PATIENTS

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Abstract

Background: Thrombocytopenia is a common hematological disorder with diverse causes, ranging from infections to hematological malignancies and drug reactions.
Aims: To analyze the causes, severity, and demographic distribution of thrombocytopenia in patients attending a tertiary care centre in Uttar Pradesh, India.
Materials and Methods: A retrospective study of 1050 patients with thrombocytopenia between September 2024 and August 2025 was conducted. Clinical records, laboratory investigations, and etiological diagnoses were reviewed. Thrombocytopenia was categorized as mild (100,000–150,000/µL), moderate (50,000–99,999/µL), and severe (<50,000/µL). Data were analyzed descriptively, and results were represented using tables and figures.
Results: Infectious causes were most common (54.3%), with dengue (31.6%) and malaria (12.8%) predominating. Non-infectious causes included drug-induced thrombocytopenia (10.9%), aplastic anemia (8.3%), and chronic liver disease (7.4%). Severe thrombocytopenia was observed in 27.6% of patients. The majority were males (58%) and aged 21–40 years (44%).
Conclusion: Infectious etiologies, particularly dengue and malaria, remain the leading causes of thrombocytopenia in this region. Early identification and targeted management are essential to reduce morbidity.

Introduction

Thrombocytopenia, defined as a platelet count below 150,000/µL, is frequently encountered in clinical practice. Etiologies include decreased platelet production, increased destruction, or sequestration. In tropical regions of India, infectious diseases such as dengue, malaria, and sepsis are predominant transient causes, while hematological malignancies, drug reactions, and chronic liver disease account for chronic thrombocytopenia.

Uttar Pradesh, being densely populated with recurrent vector-borne infections, demonstrates a high burden of thrombocytopenia. Understanding its distribution and etiology is crucial for timely intervention and improved patient outcomes. This study retrospectively evaluates 1050 patients to determine the causes and patterns of thrombocytopenia in a tertiary care centre in Gonda, Uttar Pradesh.

Materials and Methods

This retrospective study included 1050 patients diagnosed with thrombocytopenia between September 2024 and August 2025 at ASMC, Gonda. Patient records were reviewed for demographic data, clinical presentation, platelet counts, and etiological diagnosis. Thrombocytopenia severity was classified as mild (100,000–150,000/µL), moderate (50,000–99,999/µL), or severe (<50,000/µL). Causes were categorized as infectious (dengue, malaria, sepsis), non-infectious (drug-induced, aplastic anemia, chronic liver disease), and others (autoimmune disorders, nutritional deficiencies). Data were analyzed descriptively using tables and charts.

Results

Parameter	Number of Patients	Percentage (%)	Comments
Total patients	1050	100	All included cases
Male	609	58	Higher prevalence
Female	441	42	
Mild thrombocytopenia	280	26.7	100,000–150,000/µL
Moderate thrombocytopenia	480	45.7	50,000–99,999/µL
Severe thrombocytopenia	290	27.6	<50,000/µL

Table 1: Demographic distribution and severity of thrombocytopenia

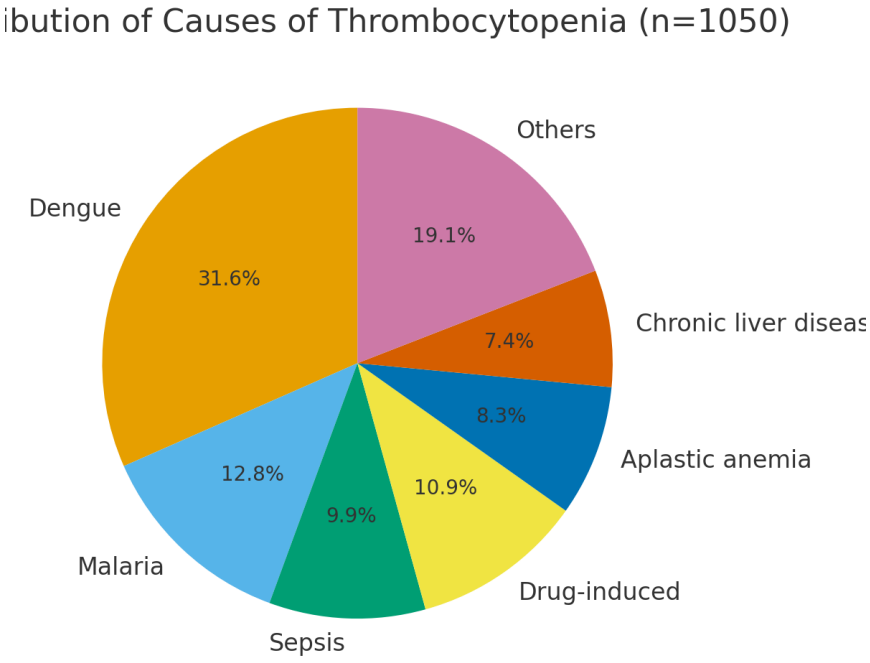

Figure 1: Etiological distribution of thrombocytopenia

Discussion

This study demonstrates that infectious causes are the predominant etiology of thrombocytopenia in this population, consistent with other Indian studies. Dengue accounted for the largest proportion due to endemic circulation in northern India. Mechanisms include immune-mediated platelet destruction and bone marrow suppression.

Non-infectious causes, including drug-induced thrombocytopenia, aplastic anemia, and chronic liver disease, contributed significantly, highlighting the need for careful drug history and evaluation for marrow disorders. Severe thrombocytopenia was observed in 27.6% of cases, emphasizing the importance of early diagnosis to prevent hemorrhagic complications.

Comparisons with previous regional studies show similar etiological patterns, confirming the public health relevance of dengue and malaria control. Limitations include retrospective design and single-center scope, although the large sample size provides meaningful epidemiological data.

Conclusion

Infectious diseases, particularly dengue and malaria, remain the leading causes of thrombocytopenia in patients attending a tertiary care centre in Uttar Pradesh. Early recognition and targeted management are crucial. Awareness, vector control, and monitoring of platelet counts can reduce morbidity associated with thrombocytopenia.

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