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Research Article

Clinical Experience of Immune Thrombocytopenia: A Single-Center Study from Nepal

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Abstract

Immune thrombocytopenia (ITP) is an acquired autoimmune disorder characterized by isolated thrombocytopenia due to increased platelet destruction and impaired platelet production. Although several international studies have explored the epidemiology and clinical outcomes of ITP, there is limited published evidence from Nepal. This study aimed to evaluate the clinical characteristics, treatment patterns, and outcomes of patients diagnosed with ITP in a single tertiary care center in Nepal. A retrospective observational study was conducted among patients diagnosed with immune thrombocytopenia between January 2024 and March 2026. Clinical presentation, laboratory findings, treatment modalities, and follow-up outcomes were reviewed from medical records. Secondary causes of thrombocytopenia and neonatal thrombocytopenia were excluded. Follow-up assessment was carried out to evaluate response to treatment and disease progression. A total of 30 patients were included in the study, comprising nine pediatric and twenty-one adult cases. Female predominance was observed with a male-to-female ratio of 0.76: 1. The most common clinical presentation was skin bleeding seen in 50% of cases, while generalized fatigue was present in 53%. Severe menorrhagia requiring emergency intervention was noted in two patients. Previous history of dengue fever was reported in 17% of patients. Platelet count below 20,000/µL at presentation was observed in 20% of patients, and antinuclear antibody positivity was detected in 7%. Hospital admission due to significant mucosal bleeding was observed in 40% of cases. Intravenous immunoglobulin (IVIG) was administered in only two patients because of limited availability and high cost. Steroids were the primary treatment modality in acute management. Only one patient underwent splenectomy. Complete remission was achieved in four patients, including one after splenectomy. No patient developed hematological malignancy or mortality during the follow-up period. Most patients with superficial bleeding manifestations did not require aggressive intervention. Steroids remained the cornerstone of therapy, while IVIG use was limited due to resource constraints. Platelet transfusion was commonly used in severe thrombocytopenia and bleeding episodes. Larger multicenter prospective studies are recommended to better understand the epidemiology and long-term outcomes of ITP in Nepal.

Keywords

Immune Thrombocytopenia, Bleeding, Platelet, Treatment Outcome, Nepal

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1. Introduction

Immune thrombocytopenia (ITP) is an acquired autoimmune disorder characterized by isolated thrombocytopenia with platelet count less than 100 × 10^9/L in the absence of other causes or disorders associated with thrombocytopenia [1] Historically referred to as idiopathic thrombocytopenic purpura, the terminology was revised following international consensus recommendations, replacing "idiopathic" with "immune" thrombocytopenia to better reflect the autoimmune pathogenesis of the disease [2].

ITP affects both children and adults with variable clinical presentations ranging from asymptomatic thrombocytopenia to life-threatening hemorrhage [3]. Population-based studies estimate an incidence of approximately 6.4 per 100,000 children and 3.3 per 100,000 adults annually [4]. The disease results from immune-mediated platelet destruction along with impaired platelet production caused by autoantibodies directed against platelet antigens [5].

Clinical manifestations commonly include petechiae, purpura, epistaxis, gum bleeding, and menorrhagia [6]. Severe internal bleeding, including intracranial hemorrhage, is rare but potentially fatal. Management strategies depend on platelet count, bleeding severity, age, comorbidities, and response to previous therapy [7]. Corticosteroids remain the first-line treatment in most settings, while intravenous immunoglobulin (IVIG), thrombopoietin receptor agonists, rituximab, and splenectomy are reserved for selected patients.

In resource-limited countries like Nepal, management practices are often influenced by financial constraints, limited access to advanced therapeutics, and variability in institutional protocols [8]. Despite the burden of thrombocytopenic disorders, there is a paucity of published data regarding the clinical profile and management outcomes of ITP in Nepal.

This study aimed to evaluate the demographic profile, clinical manifestations, laboratory findings, treatment modalities, and outcomes of patients diagnosed with immune thrombocytopenia in a tertiary care center in Nepal [9].

2. Methods

2.1. Study Design and Setting

This retrospective observational study was conducted at a single tertiary care center in Nepal. Medical records of patients diagnosed with immune thrombocytopenia between January 2024 and March 2026 were reviewed.

2.2. Study Population

Patients of all age groups diagnosed with immune thrombocytopenia based on clinical and laboratory findings were included in the study. Diagnosis was established after exclusion of secondary causes of thrombocytopenia.

2.3. Inclusion Criteria

1) Patients diagnosed with primary immune thrombocytopenia.
2) Patients with available clinical and laboratory records.
3) Both pediatric and adult patients.

2.4. Exclusion Criteria

1) Secondary thrombocytopenia due to infections, malignancy, autoimmune diseases, or drug-induced causes.
2) Neonatal thrombocytopenia.
3) Incomplete medical records.

2.5. Data Collection

Clinical records were reviewed to obtain demographic characteristics, presenting symptoms, bleeding manifestations, laboratory investigations, treatment interventions, and follow-up details.

1) Age and gender
2) Presenting complaints
3) Platelet count at diagnosis
4) Bleeding manifestations
5) ANA status
6) Previous history of dengue infection
7) Hospital admission requirement
8) Treatment received
9) Response to therapy
10) Follow-up outcome

2.6. Treatment Response

Treatment response was assessed during follow-up visits. Complete remission was defined as normalization of platelet count without ongoing treatment and absence of bleeding manifestations.

2.7. Statistical Analysis

Data were entered and analyzed using descriptive statistical methods. Continuous variables were expressed as mean or median where applicable, while categorical variables were expressed as frequencies and percentages.

2.8. Ethical Consideration

Patient confidentiality was maintained throughout the study. Institutional approval was obtained according to hospital policy before data collection.

3. Results

3.1. Demographic Characteristics

A total of 30 patients diagnosed with immune thrombocytopenia were included in the study. Among them, 21 (70%) were adults and 9 (30%) were pediatric patients. Female predominance was observed with a male-to-female ratio of 0.76: 1.

3.2. Clinical Presentation

The most common presenting manifestation was skin bleeding including petechiae and purpura, observed in 15 (50%) patients. Generalized fatigue was reported by 16 (53%) patients. Severe menorrhagia requiring emergency resuscitation and intervention was noted in two female patients.

A previous history of dengue fever was documented in 5 (17%) patients.

Table 1. *Clinical Characteristics of Patients with ITP.*

Clinical Characteristics	Frequency	Percentage
Skin bleeding manifestations	15	50%
Generalized fatigue	16	53%
Severe menorrhagia	2	7%
Previous dengue fever	5	17%
Significant mucosal bleeding requiring admission	12	40%

3.3. Laboratory Findings

Platelet count below 20,000/μL at the time of presentation was observed in 6 (20%) patients. ANA positivity was identified in 2 (7%) patients.

Table 2. *Laboratory Findings.*

Laboratory Parameters	Frequency	Percentage
Platelet count <20,000/μL	6	20%
ANA positivity	2	7%

3.4. Treatment Modalities

Most patients were managed with corticosteroids as first-line therapy. Intravenous immunoglobulin (IVIG) was used in only two patients due to limited availability and high cost. Platelet transfusion was frequently administered in severe bleeding episodes and profound thrombocytopenia.

More than three medications were required in only two patients during the chronic course of illness. One patient underwent splenectomy because of refractory disease.

Table 3. *Treatment Modalities.*

Treatment	Frequency	Percentage
Steroid (oral Prednisolone / Methyl prednisolone IV)	12	40%
IVIG	2	7%
Multiple drug therapy (>3 drugs)	2	7%
Splenectomy	1	3%

3.5. Follow-up and Outcome

The follow-up duration ranged from 3 to 26 months. Complete remission was achieved in four (13%) patients, including one patient following splenectomy. Three patients achieved remission within one year of diagnosis.

No patients developed hematological malignancy or mortality during the study period.

Table 4. *Clinical Outcome.*

Outcome	Frequency	Percentage
Complete remission	4	13%
Development of malignancy	0	0%
Mortality	0	0%

4. Discussion

This study provides insight into the clinical profile and management patterns of immune thrombocytopenia in a tertiary care setting in Nepal [10]. Similar to previously published studies, female predominance was observed in our series, particularly among adults. The higher prevalence among females may be related to autoimmune predisposition [11].

Mean age in the present study is 36 years (range: 2-76 years) with female predominance with ratio M: F 0.76: Rao et al in their study also reported female predominance with M: F 1: 1.9. Adhikari et al from Nepal also reported female predominance with ratio F: M 1.2: 1 [12, 13].

Cutaneous bleeding manifestations including petechiae and purpura were the most common clinical presentation observed in 50% cases in our study and 2 (6.6%) had severe bleeding in the form of menorrhagia required emergency resuscitation and treatment with steroid. Cutaneous bleeding in 28% with vis-

ceral bleeding in 4.9% and none of the patient had fatal intracerebral hemorrhage was reported in the study by Lamiae et al in French series [14].

Srinivasan et al. from India in their pediatric ITP series found male predominance with cutaneous bleeding more common (86%) an incidence of intracranial bleed was 6.6% [15].

Adhikari et al reported minor cutaneous bleeding in 41% and significant mucosal bleed associated with ecchymosis in 51% in their series.

In the preceding weeks mild viral illness was reported in Srinivasan et al. series was 23% and associated anemia in almost 60% cases attributed to concomitant iron deficiency in the community. In present study remote (before one year) dengue viral infection was found in 17% and concomitant nutritional deficiency anemia was in 20% which was corrected with supplement. In the study by Patni et al from India reported association of ITP and Dengue viral infection in 17% in their series [16].

ANA test was done at baseline in all cases and found positivity in 7% in the present study. Lamiae et al in their series reported ANA positivity in 25% cases.

A notable finding in this study was the limited use of IVIG despite its established role in acute severe thrombocytopenia. The restricted use reflects the economic and logistical challenges commonly faced in low-resource healthcare settings. Corticosteroids remained the mainstay of treatment because of their affordability and accessibility. In the present study majority (40%) received only steroid (Methyl prednisolone and/or oral prednisolone) as treatment when warranted. IVIG was used in two patients only.

In the study by Srinivasan et al. intervention was reported in 40%, however, IVIG use was limited to 13% only with variable response. In the study by Lamiae et al almost 50% received steroid and IVIG in combination in the treatment warranted group. In the study by Rao et al from India also reported steroid as main stay of treatment in 50% with good response.

Platelet transfusion was relatively frequently utilized in severe bleeding conditions. Although platelet transfusion is generally reserved for life-threatening bleeding in ITP, clinicians in resource-limited settings may prefer transfusion support due to delayed access to alternative therapies.

The remission rate observed in this study was modest, and only one patient underwent splenectomy. Advances in thrombopoietin receptor agonists and biologic therapies have significantly improved outcomes globally; however, access to these therapies remains limited in Nepal. In the present study three or more treatment modalities were used in 2 (7%) cases only in the course of Chronic ITP. Thrombopoietin receptor agonist in oral preparation (Eltrombopag) was used in 5 (17%) with partial response in two cases only. Splenectomy was done in one chronic case resulted in complete remission. Three (33%) pediatric acute ITP achieved complete remission within one year.

None of the patients developed hematological malignancy or mortality during follow-up, indicating an overall favorable short-term outcome. Nevertheless, longer follow-up and larger studies are required for better understanding the chronicity and relapse pattern of ITP in the Nepalese population.

The study has several limitations. It was conducted at a single center with a relatively small sample size and retrospective design. Long-term follow-up data were limited for some patients. Despite these limitations, this study contributes important preliminary evidence regarding the burden, clinical course and management of ITP in Nepal.

5. Conclusion

Immune thrombocytopenia is a relatively common hematological disorder with variable clinical presentation in Nepal. Most patients present with superficial cutaneous bleeding manifestations and response of corticosteroid is good in majority. Severe fatal bleeding requiring intensive intervention is uncommon. Resource constraints significantly influence treatment choices, particularly limiting the use of IVIG and newer therapeutic agents.

Prospective multicenter studies with larger sample sizes are needed to establish national data regarding incidence, management strategies, and long-term outcomes of immune thrombocytopenia in Nepal.

Abbreviations

ITP	Immune Thrombocytopenia
IVIG	Intravenous Immunoglobulin

Author Contributions

Ajaya Kumar Jha: Conceptualization, Data curation, Formal Analysis, Funding acquisition, Investigation, Methodology, Project administration, Visualization, Writing – original draft, Writing – review & editing

Garima Subedi: Data curation, Formal Analysis, Funding acquisition, Investigation, Methodology

Arvind Kumar Sinha: Supervision, Validation, Visualization, Writing – review & editing

Conflicts of Interest

The authors declare no conflict of interest.

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