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Original Article

Spectrum of Clinical Manifestations among Paediatrics and Adult Patients of Idiopathic Thrombocytopenic Purpura Presenting to Tertiary Care Hospital

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ABSTRACT

Idiopathic Thrombocytopenia Purpura (ITP), an autoimmune bleeding disorder, affects both children and adults, categorized into acute, persistent or chronic types based on symptom duration. Clinical presentations vary widely, ranging from minor bleeds to severe systemic hemorrhages involving CNS, GIT and genitourinary tract. **Objective:** To assess clinical manifestations in ITP patients at a Lahore tertiary care Hematology department. **Methods:** This retrospective cross-sectional study included data from 660 diagnosed ITP patients from January 2020 to December 2022 using consecutive sampling technique at Allama Iqbal Medical College. Data were recorded after taking consent from patients. **Results:** Mean age was 31.8 ± 12.8 SD, with 10.3% children and 89.7% adults. Patients were categorized based on platelet counts into mild, moderate, and severe groups. Most children (47%) and adults (59.9%) had moderate thrombocytopenia. Common features included bruising in children (67.6%), gum bleeding (77%) in adults of both sexes and menorrhagia (67.9%) in females. **Conclusions:** ITP affects all ages but predominantly females. Clinical presentation varies, with most cases showing superficial bleeding like bruising, epistaxis, gum bleeding, or menorrhagia in females.

INTRODUCTION

Idiopathic Thrombocytopenia Purpura (ITP), also known as immune thrombocytopenic purpura is a common bleeding disorder that is encountered in healthy individuals, affecting both children and adults [1]. It is an autoimmune disorder characterized by increased destruction of platelets that is mediated by antiplatelet antibodies or decreased production resulting in thrombocytopenia. On the basis of international consensus, the term ITP should be used if platelets count is below 100 x 109 /L. Based on the duration of symptoms, it is divided into three types i.e. acute (newly diagnosed until 3 months), persistent (3 to 12 months) and chronic (more than 12 months) [2, 3]. The clinical presentation of ITP differs from patient to patient. The bleeding pattern varies from minor superficial and mucosal bleed to life-threatening systemic bleeding involving CNS, GIT and genitourinary tract. A local study conducted by Rashid N *et al.*, concluded that petechiae (31.25%) was the most frequent manifestation, followed by bruises, gum bleed and nose bleed [4]. According to a study done in Turkey in 2002, it was found that 73.2% ITP patients between 14-78 years of age presented with initial symptom of bleeding. The frequency of bleeding in relation to platelet count was 82% with platelet count 50000/mm3 [5]. A study done to determine clinical spectrum of acute

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ITP in children between 1 month to 14 years of age in India concluded that petechiae and purpura were the most common clinical features followed by mucosal bleed in 67% of the children [1]. In a local study on ITP patients, it was found that 88% of the patients presented with only three complaints i.e., nose bleed, gum bleed and bruising. Other less frequent clinical features included hematuria and hematemesis (8%) and menorrhagia (3.2%) and cut off platelet count associated with more frequent bleeding episodes was reported to be <100000/mm [5, 6]. ITP is a very frequently occurring condition in our setup, affecting individuals of all ages. The clinical presentation varies from being asymptomatic to presenting with a wide range of symptoms. Therefore, the study aimed to provide valuable insights into the clinical spectrum of ITP in all age groups and to determine the frequency and spectrum of clinical manifestations among ITP patients presenting to our setup. Additionally, we will review relevant literature on the subject to complement our findings and place them in the context of existing knowledge [7, 8, 9]. Ultimately, this research will help to improve our understanding of the clinical presentation of ITP and provide insights into the management and treatment of this condition. The collection of studies examines the spectrum of clinical manifestations and outcomes in pediatric and adult patients with Idiopathic Thrombocytopenic Purpura (ITP) who present to tertiary care hospitals. These studies offer a comprehensive overview of the clinical features, management strategies, and therapeutic responses observed in different patient populations [10, 11]. The studies highlight that ITP can present with a wide range of clinical symptoms, from asymptomatic thrombocytopenia to severe bleeding disorders. In children, the disease often follows a viral infection and tends to be acute, whereas in adults, it is more commonly chronic and may be associated with autoimmune disorders or drug use. Common clinical manifestations include petechiae, purpura, and mucosal bleeding, with variations observed based on age and severity of the disease [12-14]. Management strategies discussed in the studies emphasize the importance of individualized treatment approaches. For pediatric patients, observation and supportive care are often sufficient for acute cases, while adults with chronic ITP may require more aggressive therapies, including corticosteroids, intravenous immunoglobulins, and splenectomy [15, 16]. Advances in diagnostic techniques, such as the use of immunobead assays, have improved the accuracy of ITP diagnosis, enabling better-targeted treatments [17]. The outcomes of ITP patients vary widely, with many children experiencing spontaneous remission, while adults may face a relapsing-remitting course. Factors affecting the prognosis include the patient's age, initial platelet count, and response to initial treatment [18, 19]. Overall, these studies underscore the need for continued research to optimize the management and improve the outcomes for ITP patients [20].

This study was conducted to provide insights into the clinical spectrum of ITP across age group and to determine the frequency and spectrum of clinical manifestations.

METHODS

This retrospective cross-sectional study was conducted at the Haematology Department of Allama Iqbal Medical College (AIMC) Lahore. The study included data from the diagnosed ITP patients from January 2020 to December 2022. Institutional ethical review Committee gave permission (Ref No: ERB 144/6/09-06-2023/S1 ERB). Sample size was calculated using OpenEpi software which came out to be 331 keeping 95% confidence interval and 5% margin of error but we took 660 subjects for our study [11]. Inclusion criteria comprised patients aged 3-60 with confirmed ITP diagnosis, excluding those with pancytopenia, haematological malignancies, or inherited thrombocytopenia. The data of ITP patients already diagnosed on the basis of history, examination and investigations, fulfilling the inclusion criteria were obtained using convenient sampling technique. Prior written informed consent was taken from all patients authorizing the use of their personal information for research purposes. The data were presented using frequency tables, charts and figures. Data were analyzed using SPSS version 26.0. P value of ≤0.05 was taken as statistically significant.

RESULTS

The study included data of 660 ITP patients between 3 to 60 years of age. The mean age was 31.8 ± 12.8 SD. There were total 68 children (10.3%) out of which there were 30 males (12.4%) and 38 females (9.1%). The total adult population was 592 (89.7%) which included 212 males (87.6%) and 380 females (90.9%), the overall male to female ratio was 0.5:1 as shown in figure 1.

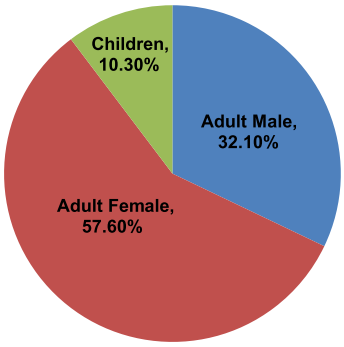

Figure 1: Study Population Statistics

Based on platelet count thrombocytopenia was divided into 3 groups' i.e. mild, moderate and severe. Most of the

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children (47%) and adults (59.9%) had moderate thrombocytopenia as shown in table 1.

Table 1: Thrombocytopenia Groups and Age Distribution

Age Category	Thrombocytopenia Group		
	Mild	Moderate	Severe
Up to 12 Years	28	32	8
Above 12 Years	35	355	152
Total	113	387	160

The most common clinical feature in children was bruising and in adult's gum bleeding. In adult females, menorrhagia was observed most common clinical feature (67.9%). Apparently it appears that bruising was more common among children while gum bleed occurred more frequently in adults but when Chi-square test was applied to see any relationship between age groups and frequency of symptoms, p value came out to be 0.85 which is statistically not significant hence establishing that there exists no predilection of any symptom towards any specific age groups i.e. children and adults as shown in table 2.

Table 2: Frequency of Symptoms

Groups	Epistaxis N (%)	Gum Bleed N (%)	Bruise N (%)	p-Value
Children	41 (60.2%)	35 (51.4%)	46 (67.6%)	0.85
Adult	165 (27.8%)	456 (77%)	349 (58.9%)	

DISCUSSION

Immune Thrombocytopenia Purpura (ITP) is an acquired autoantibody-mediated bleeding condition with a frequency in adults between 1.6 and 3.9 per 100,000 person-years and is characterized by both rapid platelet destruction and reduced platelet formation [5]. ITP's actual prevalence is unknown. The male to female ratio is variable since there may be a male majority in children and a female preponderance in adults in the USA, where the prevalence was estimated at 1/10,000 in children and 5.5/100,000 people in adults In Pakistan, ITP has been reported to have an incidence of between 0.2 and 0.4 new cases per 10,000 per year, a prevalence of 0.9-2.6 per 10,000, and a female preponderance [4]. ITP has been consistently observed to be more prevalent among females as also observed in our study in which 418 (63.3%) patients were females. This female predominance was also reported by Ejaz A and Radia D [2]. However, in studies done in India in 2015 and 2016 by Godhani UR and Devaliya JJ and Shah HR *et al.*, male predominance of ITP was reported [9, 10]. The clinical features of ITP vary as observed in our study. Among children, bruising (67.6%) was the dominant clinical feature while gum bleeding was least common. This finding is in consistence with the study of Farid J *et al.*, who reported bruising (50.4%) as the most common clinical feature [6]. Similar findings were reported in the study done in Riyadh to determine the clinical characteristics and outcomes of pediatric patients with ITP where skin manifestation was present in 92.7% and gum bleeding in only 19.5% of study population [11]. In adults, gum bleeding was the commonest presentation (77%) observed. However, our results are at odds with those of a 2017 study conducted in Nigeria, which identified epistaxis (88.9%) as the most prevalent complaint [8]. In our study, menorrhagia was present in 67.9% of adult females, being the second most common clinical feature. This finding was similar to the study done in India in 2022, where menorrhagia was reported in 79% of the females [7]. However, Hassan A *et al.*, reported menorrhagia in only 22.2% of females [8]. Our study possesses several limitations that necessitate consideration. Initially, the inclusion of only a single center raises concerns about the generalization of the findings to the entire population of ITP patients in Pakistan. To gain a more accurate estimation of the disease burden, a larger sample size collected from multiple centers would be imperative.

CONCLUSIONS

ITP can affect individuals of any age but there is a female predominance. The clinical presentation can vary from patient to patient however in majority of the cases there is no life-threatening bleed and mostly patients present with superficial bleeding like bruising, epistaxis or gum bleed.

Authors Contribution

Conceptualization: MG
Methodology: HS, NF, AHS
Formal analysis: MG, HS, MHC[1], MHC[2], NF
Writing, review and editing: MG, HS, MHC[1], MHC[2], NF, AHS

All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

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