Clinical Features in Idiopathic Thrombocytopenic Purpura: A Single Center Study

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Abstract

Immune thrombocytopenic purpura (ITP) generally defined as a platelet count of less than 100x10^9/L and is the commonest cause of thrombocytopenia in childhood. It results from an immune mediated destruction of circulating platelets within the reticuloendothelial system, mainly in the spleen. To evaluate the frequency of common clinical features of Idiopathic Thrombocytopenic Purpura (ITP) in children and adults presenting in LUMHS Hyderabad. All patients with bleeding through any orifice with diagnostic evidences of ITP were selected through nonrandom convenient sampling in this retrospective study. Common clinical features were noted along with hematological findings. A total of 347 patients were observed during October 2014 to September 2016. In which 50 were diagnosed as ITP. Bruising (46%), Epistaxis (36%) and Petechiae (25%) were the most common clinical features. Platelet count was reduced in 38 out of 50 cases with median count of 35x10^9/L. Bruising, Epistaxis, and Petechiae are the most common features of ITP.

Keywords: ITP, Epistaxis, Bruising, Platelets count.

Introduction

Primary immune thrombocytopenia (ITP) is also known as idiopathic thrombocytopenic purpura is a documented autoimmune disorder. An ITP patient usually benevolences with a thrombocyte count of <100x10^9/L. The mean normal count is approximately 250x10^9/L (range 150–400x10^9/L) and the normal platelet life span is 7-10 days. ITP results from an immune mediated destruction of circulating platelets within the reticuloendothelial system, mainly in the spleen. The decrease platelet count is complemented by a vice versa increase in megakaryocytes within the bone marrow. The annual frequency of ITP is measured to be between 1 and 6.4 cases per 100,000. This number is probably an under-value because it only involved those patients that developed symptomatic thrombocytopenia and were hospitalized. ITP is one of the cause of sudden bleeding without any warning. Maximum ITP cases are self-limiting and need no treatment. Patients can develop purpura and superficial bruising and may have epistaxis and other mucosal bleeding. In about 90% of the cases, the disease is acute. Most will require only a brief stay in hospital to confirm the diagnosis and assess its severity. Differential diagnosis is very tough when a reduced platelet count, which can be used to determine whether thrombocytopenia is acquired or congenital, is incidentally noticed in asymptomatic persons who have not ever had a blood count performed previously. In some cases, family history may help the diagnostic dilemma, in that the presence of other relatives with decrease platelet counts strongly claims against ITP and supports an natural form. The objective of this study was to find out the frequency of various clinical findings in Pakistani children with ITP.

Material and Methods

This retrospective study was conducted at Diagnostic and Research lab LUMHS Hyderabad. From October 2014 to September 2016. The analysis of ITP was made on well-known criteria, excluding other hematological disorders by peripheral smear review and clinical features and/or bone marrow aspirate showing normal to increased megakaryocytes. All patients presenting with bleeding through any orifice with diagnostic evidences of ITP were selected through nonrandom convenient sampling. Detailed clinical history, physical examination and common clinical features were noted along with hematological findings on a pre-designed proforma. Blood samples were taken and complete blood counts (CBC) were performed on XN 1000 (Sysmex, Japan). Bone marrow aspiration was done on all
patients and trephine biopsies were taken only where indicated. Screening of peripheral blood films stained with Leishman Stain was carried out for each patient for the morphology of platelets. All the findings were recorded and statistically analyzed with SPSS (version 22).

Results
A total of 347 patients were observed during October 2014 to September 2016 among whom, 50 were diagnosed to have ITP. These 50 patients included 37 (74%) females 13 (26%) males. Frequencies of various clinical features found in study patients are given in Table 1; the most common symptom found was Fever (100%). Platelet count was reduced in 38 out of 50 cases with median count of 35x10⁹/L.

Table 1 Clinical Features of ITP among Study Patients (N=50) at LUMHS

<table>
<thead>
<tr>
<th>CLINICAL FEATURES</th>
<th>MALES</th>
<th>FEMALES</th>
<th>n/%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fever</td>
<td>13</td>
<td>37</td>
<td>50/100</td>
</tr>
<tr>
<td>Bruising</td>
<td>8</td>
<td>12</td>
<td>20/40</td>
</tr>
<tr>
<td>Epistaxis</td>
<td>7</td>
<td>9</td>
<td>16/32</td>
</tr>
<tr>
<td>Petechia</td>
<td>4</td>
<td>5</td>
<td>9/18</td>
</tr>
<tr>
<td>Hematuria</td>
<td>2</td>
<td>1</td>
<td>3/6</td>
</tr>
</tbody>
</table>

N: Total number of patients; n= number of patients

Table 2 Key laboratory haematological parameters of study patients

<table>
<thead>
<tr>
<th>Investigations</th>
<th>N</th>
<th>Min--Max Value</th>
<th>Median Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platelets Count</td>
<td>50</td>
<td>1000-97000</td>
<td>1,35000</td>
</tr>
<tr>
<td>Hb (g/dl)</td>
<td>50</td>
<td>5-15</td>
<td>11.4</td>
</tr>
<tr>
<td>TLC (per mm³)</td>
<td>50</td>
<td>3300-21300</td>
<td>9050</td>
</tr>
</tbody>
</table>

N, number of patients

Discussion
ITP is the commonest cause of thrombocytopenia. Although there is no reliable epidemiological data on the occurrence of ITP, guesstimates are that 10-25/100,000 10 children and adults acquire ITP per year. Fever, easy bruising, epistaxis were the most common clinical features in the current study (Table 1). A study conducted in Peshawar in 1995 reported petechiae and ecchymosis as the initial presentation in 100% cases whereas in our study fever was the most common presentation. In a study done by American society of hematology about 75% of patients were not treated initially. Most patients had platelet counts <50,000/mm³ at presentation while the median count in this study cohort was 135,000/mm³. Similarly in another study most had platelet counts <20,000/mm³ of the 221 untreated children, 2 (0.9%) patients had fatal bleeding associated with the acute presentation, and 191 (87%) had complete remission from ITP. The platelet count normalized in 2 to 8 weeks, with one half to two thirds of the patients recovering within 4 weeks. In our study out of 50 patients we found that 37 (74%) were female and 13 (26%) were males. Platelet count was reduced in 38 out of 50 cases with median count of 35x10⁹/L. Limitations of this study included small sample size and those inherent to any single center, retrospective design, particularly selection bias and information bias. We were also unable to assess all the variables and were limited by deficient information in registration file compiled at the time of registration. We hence recommend further studies with larger sample size from local population tackling key clinical and haematological parameters for better elucidation.

Conclusion: Fever, Bruising, Epistaxis, and Petechiae are the common clinical features of ITP. Moreover, it allows us to identify the common occurrence of ITP in females.

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Authors Contribution
FQ: Designed the study, data analysis & manuscript writing.
IDU: Supervised & helped in manuscript writing.
FAM: Did statistical analysis and editing of manuscript.
SA: Helped in manuscript writing.
AN: Made final critical revision of the manuscript for important intellectual content.

Conflict of Interest
We hereby declare that we do not have any conflict of interest related to publication of this article.

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References