

Prevalence and management of bleeding in adults with chronic idiopathic thrombocytopenic purpura

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Abstract

Objectives: To assess the prevalence of chronic idiopathic thrombocytopenic purpura (ITP) in adults and give recommendation about the management of bleeding in these patients.

Study design: Descriptive and experimental study

Place and duration of study: Medical Unit-III & Pathology Department of Peoples Medical College/ Hospital District Shaheed Benazir Abad from March 2009 to August 2009.

Patients and Methods: 65 patients with bleeding admitted in medical unit III of the peoples medical college Nawab Shah were selected. The samples of blood and bone marrow aspiration biopsy (BMAB) were taken from all the patients and sent to the Pathology Department Peoples Medical College for analysis of platelet counts and bone marrow examinations. Those patients who were present with secondary type of immune thrombocytopenic purpura such as patients with chronic lymphocytic leukemia, auto immune hemolytic anemia and systemic lupus erythematosus were excluded from the study because of resemblance of their clinical presentations with chronic ITP.

Results: In our study, 65 patients of chronic ITP were included. The ages of patients ranged between 15-50 years, the mean age was $(32.5 \pm)$ and 45 patients were female (69.2%) while 20 patients were male (30.8%). Female to male ratio was (2.25: 1.0). The statistically significant clinical findings such as Purpuric spots, epistaxis, gum bleeding and menorrhagia in female were found. The laboratory findings in these patients was mean platelet count $12,000 \pm 2500$, $23,000 \pm 4500$ and bone marrow examinations showing moderately to markedly increased number of megakaryocytes in bone marrow.

Conclusions: Chronic ITP is commonly seen in female as compared to the male and it is more common in the adults. The morbidity and mortality rate in older female than the younger one is high due to the risk of intracranial bleeding in these patients that require urgent treatment.

Keywords: Prevalence, Chronic Idiopathic Thrombocytopenic Purpura, (ITP), Bone Marrow Aspiration Biopsy (BMAB), Megakaryocytes

Introduction:

Primary immune or idiopathic thrombocytopenic purpura (ITP) or auto immune thrombocytopenic purpura is defined as isolated thrombocytopenia with out other causes and with relative compensatory bone marrow failure to produced adequate platelet.¹ ITP is caused by an enhanced platelets destruction by auto anti bodies of IGg class in the mononuclear phagocytic system of liver and spleen.² Two factors such as T-cells mediated platelet cytotoxic-

ity and anti body induced suppression of megakaryocytes production also causes low platelet count and bleeding in the patients with ITP.³⁻⁴ The diagnosis of chronic ITP depends upon clinical and laboratory findings such as it is common in females and adults with gradual on set of moderate to severe bleeding, platelet count less than 20,000 /cumm with mild or with out splenomagly and increase number of megakaryocytes in bone marrow.⁵ The strategic planning to treat chronic ITP is composed of corticosteroid

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therapy, intravenous immunoglobulin, platelet transfusion in emergency and splenectomy, however advanced therapies such as Rituximab, romiplostim and Danazol are available to be used in those patients who are refractory or resistant or does not responding to other therapies including splenectomy.⁶

Hence purpose of our study is to assess the prevalence of chronic ITP in patients admitted in Peoples Medical College and Hospital at district Shaheed Benazir Abad. We also give a recommendation about the management of bleeding in these patients especially in old patients and females who are under risk of intracranial bleeding that increase the morbidity and mortality rate.

Patients and methods:

This descriptive and experimental study was conducted from March 2009 to August 2009 at Peoples Medical College and Hospital District Shaheed Benazir Abad. Total 65 patients of ages between 15 and 45 years, 45 females (69.24%) and 20 males (29.76%) were selected for the present study. All the patients present with moderate to severe bleeding were admitted in medical unit III people's medical college hospital Nawab Shah. The samples of blood and bone marrow aspiration biopsies were taken from all the patients and sent to the pathology department peoples medical college for analysis of platelet count /cumm and bone marrow examinations. The patients with secondary type of immune thrombocytopenic purpura were excluded from the present study due to the resemblance of their clinical presentation with primary chronic idiopathic thrombocytopenic purpura. These conditions were as follows.

1. Lymphoproliferative disorder such as chronic lymphocytic leukemia and lymphoma could be exempted by complete blood counts, peripheral blood examinations, bone marrow and lymph node biopsies.
2. Auto immune disorders such as systemic lupus erythematosus (SLE) and auto immune hemolytic anemia's (AIHA) could be excluded on the basis of absences of but

fly skin rashes and sign and symptoms of arthritis and absence of anti nuclear anti body (ANA) tests that not only exempted the (SLE) but also (AIHA) as well as other auto immune disorders.⁷

Results :

In our study, 65 patients were selected. The mean age of these 65 patients was 32.5 years, 45 were female and 20 were male. Female to male ratio was 2.25: 1 (Table 1).

The clinical findings in these patients were Purpuric spots(100%), echymosis (72.3%), epistaxis(66.1%) and gum bleeding in both sexes while menorrhagia (61.5%) in female and these results were statistically highly significant $P < 0.005$ (Table 2).

The laboratory findings including platelet count and bone marrow biopsy findings in these patients were mean platelet count $12,000 \pm 2500$ (75.5%) and $23,000 \pm 4500$ (24.5%) in both sexes respectively. While markedly increased number of megakaryocytes in 81.5% and moderately increased number of megakaryocytes in 18.5% of bone marrows of these patients were found and these results were statistically highly significant $P < 0.005$ (Table 3).

Discussion:

The dangerous complication such as intracranial bleeding is a serious problem of chronic ITP with a high morbidity and mortality in older females than the younger ones as reported by Porteial JE et al⁸. The treatments of patients with chronic idiopathic thrombocytopenic purpura and chronic refractory ITP were used by certain laboratory research workers such as Rodeghireo F.⁹ and Borst et.al¹⁰ stated that prednisolon 1-2 mg /kg / day and high dose dexamethasone in a dose of 10mg /day for 4 days were 70-80% effective that increase the platelet count more than 50,000 /cumm in the patients with chronic ITP as the first and second line treatments. Similar results were obtained with anti D immunoglobulin versus low-dose intravenous immunoglobulin in children with ITP as reported by EL Alfy et al¹¹ The factors predicting long-term responses to splenectomy and recent controversies about the

Table 1: Age, sex and Female to Male ratio in patients with chronic ITP (N=65)

Age (in year)	Mean \pm SD range	32.5-17.5 SD	P-Value
Age group	%		
15-25	18(27.7)		P<0.005
26-50	47(72.3)		
Sex			
Female	45(69.24)		P<0.005
Male	20(30.76)		
Female to Male ratio	2.25:1		P<0.005

N=number of patients

P<0.005 P-Value less than 0.005 considered as highly significant.

SD= Standard deviation

Table 2: Clinical findings in patients with chronic ITP (N=65)

Clinical findings	Female	Male	Total	Percentage
Purpuric spot	45	20	65	100%
Echymosis	30	17	47	72.3%
Epistaxis	28	15	43	66.1%
Gum bleeding	32	18	50	76.6%
Menorrhagia	40	Nil	40	61.5%

P<0.005

P-value less than 0.005 is considered highly significant

N= Number of patients

Table 3: Laboratory Findings in Patients with ITP (N=65)

Lab: Findings	Female	Male	Total	Percentage
Platelet count less than 20,000/cumm				
12,000 \pm 2500	35	14	49	75.4%
Platelet count between 20,000 and 30,000				
23,000 \pm 4500	10	6	16	24.6%
Markedly increased number of megakaryocytes in bone marrow	37	16	53	81.5%
Moderately increased number of megakaryocytes in bone marrow	08	04	12	18.5%

P<0.005

P-Value less than 0.005 highly significant

N= Number of patients.

long-term outcomes in splenectomized patients were recorded by Ogima et.al¹² and Kahn MJ and McCrae KR¹³. The efficacy and long-term results of Rituximab, romiplostim and Danazol was founded by Pasa S et.al¹⁴, Penalver FJ¹⁵ and Kuter DJ et.al¹⁶ in patients with chronic refractory ITP or in those patients who does not responding or having resistant to other therapies.

Hence in our study, prevalence of chronic ITP was mainly common in older age groups and it was more common in the females than males. The female to male ratio was 2.26:1 observed in our study. We also advise the physicians and surgeons to treat the patients with chronic ITP

urgently according to the treatment discussed above to reduce the risk of severe bleeding usually intracranial bleeding which was common in the older females than the younger ones that leading to increase morbidity and mortality rate.

Conclusions:

The following conclusion has been made from the above study:

1. The peak prevalence of chronic ITP occurs in adults aged between 15 to 50years. The female to male ratio is 2.25: 1 and more then 60% of patients are older than 15year and females. The majority of patients is presents with clinically significant bleeding, more commonly the older females are under risk of intracranial bleeding that require urgent treatment to reduce the mortality and morbidity rate in them.
2. So for treatment plans for the patients with chronic ITP is concerned, it depends upon age of the patients, severity of the disease and according to the line of treatment discussed in this context. However after effects of treatments as well as contraindication of one an other treatment in these patients should be kept in mind by physicians and surgeons. Majority of the patients with chronic ITP are cured by corticosteroid or other immunosuppressive therapy or splenectomy.
3. The long term results to splenectomy in these patients are obtained by precaution such as pre and post immunization of patients with H influenza, pneumococcal and meningococcal vaccines, Antibiotic cover to prevent infection and protection form malarial parasites and other organisms that can be cleared in spleen.
4. Further studies are needed to find out other causes, types and demographic distribution of thrombocytopenia in our region on the large scale. Study to find out causes of treatment failure in chronic idiopathic thrombocytopenic purpura would be also required.

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