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Clinical Variables among Adult Patients with Chronic Idiopathic Thrombocytopenic Purpura in West Iran

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Abstract

Background: There are two forms of ITP: acute and chronic. The chronic form is defined by persistent thrombocytopenia for more than 12 months and mostly occurs among young women.

The aim of the present study was to evaluate the clinical variables in adult patients with chronic ITP in West Iran.

Patients and Methods: Between of 2007 and 2014, ninety adult patients with chronic ITP referred to our clinic in Kermanshah, West Iran, entered the study. We surveyed age, sex, platelet count, hemoglobin and WBC among patients. All patients were also screened for H pylori infection using H pylori urea breath test (UBT) and serum H pylori antibody.

Results: The mean age of patients was 36.7 years (±14.2). Twenty patients (22.2%) were male and 70 patients (77.8%) were female. H pylori infection was found in 25 patients (27.8%). More patients were in the 14-30 years age bracket for both male and female patients, and with increasing age the number of patients was gradually reduced. There was a statistically significant correlation between H pylori infection and mean Hb, with patients having the infection showing higher Hb.

Conclusions: In the present study the peak incidence of chronic ITP was seen among young adults. The prevalence of H pylori infection among patients with chronic ITP in our study was in line with the prevalence reported from North America and France.

Keywords: Chronic ITP, H pylori, Hb, WBC, Iran.

Introduction

Idiopathic thrombocytopenic purpura (ITP) is characterized by immune-mediated platelet destruction by the reticuloendothelial system. It is classified based on duration (acute or chronic) and age (peak incidence in young childhood and adulthood), but it affects all age groups [1,2]. The acute form is frequently seen among children, but the chronic form mainly inflicts adults. There are differences and similarities in clinical and laboratory findings of the disease between children and adults [3]. The estimated incidence of pediatric ITP is 5/100,000 with approximately one third of cases becoming chronic in children and a greater incidence of chronic disease in adolescence and adulthood [2,4-6]. Helicobacter pylori (H. pylori) is a spiral shaped microaerophilic gram-negative bacterium, first isolated from gastric biopsy by Robin Warren and Barry J. Marshall in 1984. Some studies have shown an increased prevalence of H pylori infection among patients with chronic ITP compared to the general population and also the prevalence of H pylori infection in chronic ITP patients varies according to the geographic region [7]. The aim of the present study was to evaluate the clinical variables among adult patients with chronic ITP in Kermanshah, West Iran.

Patients and Methods

Patients

Between 2007 and 2014, ninety adult patients with chronic ITP (all patients had baseline platelet count ≤50×103µL), referred to our clinic,

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Kermanshah city, West Iran, were included in the study. We surveyed age, sex, platelet count, hemoglobin (Hb) and WBC count among patients. All patients were also screened for H pylori infection using H pylori urea breath test (UBT) and serum H pylori antibody. The study was approved by the regional ethics committee and written consent was given by all participants.

Statistics

Correlation between all variables was checked using SPSS software version 19 (SPSS Inc., Chicago, Illinois). T-test was used to study the relation between age, HB, platelet and WBC with sex, and Chi-Square test was utilized to study the relation between H pylori infection and sex. P values less than 0.05 were considered statistically significant.

Results

The mean age for the patients was 36.7 years (±14.2). Twenty patients (22.2%) were male and 70 patients (77.8%) were female. H pylori infection was found in 25 patients (27.8%) (Table 1).

Figure 1 shows the distribution of patients based on their age and sex. We divided the patients based on age to 5 groups: 14-30, 31-40, 41-50, 51-60 and 61-70 years old.

More patients were in the 14-30 years age bracket for both male and female patients, and with increasing age the number of patients was gradually reduced.

Table 2 shows some variables (platelet count, Hb and WBC) among our patients when the ITP was first diagnosed.

Table 3 shows the correlation between variables (platelet count, Hb and WBC, H pylori infection) with sex. There was a significant correlation between Hb and sex (p=0.004), indicating that that the mean Hb among males was higher than females which was predictable. No other significant

Table 1: The basic characteristics of patients with chronic ITP entering the study.

Variables	n(%)	Mean±SD	Range
Age(year)		36.7±14.2	14-69
Sex			
Male	20(22.2)		
Female	70(77.8)		
H pylori Infection			
Positive	25(27.8)		
Negative	65(72.2)		

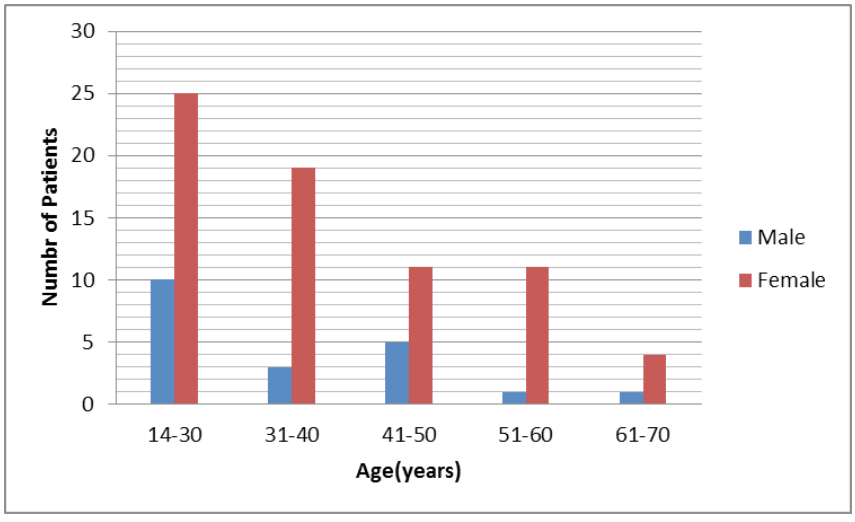

Figure 1: Distribution of patients with chronic ITP based on age and sex (n=90).

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Table 2: Platelet count, Hb and WBC when the ITP was first diagnosed among patients.

Experimental Variables	Mean	Range
Platelet count(x10^3/µL)	30	1-50
Hemoglobin(g/dL)	13.2	9.6-17.5
White Blood Cell (x 10^3/µL)	9	3.9-20.5

Table 3: Variables including platelet count, Hb and WBC and H pylori infection among chronic ITP patients and their relation with sex.

Variables	Sex(mean±SD)		P-value
	Male	Female	
Age (year)	35.3±12.8	37.1±14.6	P=0.6*
Hemoglobin (g/dL)	14.1±1.5	12.9±1.4	P=0.004*
White Blood Cell (x10^3/µL)	9.1±2	8.9±3.3	P=0.39*
Platelet (x10^3/µL)	35±13	28±14	P=06*
H pylori Infection, n (%)			
Positive	8(40)	17(24.3)	P=0.13**
Negative	12(60)	53(75.7)	

*** T-test**
****Chi-Square Test (Fisher's Exact Test)**

Table 4: Variables including platelet count, Hb and WBC and age among chronic ITP patients and their relation with H pylori infection.

Variables	H pylori Infection(mean±SD)		P-value
	+	-	
Age (year)	35.6±14.6	37.1±14.1	P=0.63*
Hemoglobin (g/dL)	14.1±1.4	12.8±1.4	P<0.005*
WBC (x10^3/µL)	9.3±3	8.8±3	P=0.37*
Platelet(x10^3/µL)	29±15	30±13	P=0.68*

* T-test

correlation was found.

Table 4 shows some variables among chronic ITP patients and their relationship with the presence of H pylori infection. There was a statistically significant correlation between H pylori infection and the mean Hb, with infected patients showing higher Hb (P<0.005).

Discussion

ITP is an autoimmune blood disorder in which platelet destruction is mediated by anti-platelet antibodies. There are two forms of ITP: acute and chronic. The chronic form is defined by persistent thrombocytopenia for more than 12 months and mostly occurs among young women 3. Nearly 20% of children and the majority of adults have chronic ITP, which usually requires some forms of therapy 8. In the recurrent form the drop in platelet count appears again after a period of normality [9].

Many studies have shown an association between H pylori infection and ITP [10]. H pylori, a gram-negative spiral bacterium, is the causative

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agent in chronic gastritis, gastric and duodenal ulcer, as well as gastric cancer. H pylori has also been implicated in the pathogenesis of extradigestive disorders, including cardiovascular, hematologic, and autoimmune diseases [11]. Also strong evidence has been reported showing its relation with ITP, with high-quality studies indicating that ITP improves after H pylori is successfully eradicated. The prevalence of H pylori infection in adult ITP patients has been systematically reviewed and has not been found to be different from that reported in the general population matched for age and geographical area [12]. Most studies have been conducted in Italy, where the H pylori rate in the middle-aged adult general population is nearly 50%, or Japan, where the prevalence of the infection is greater than 70%. A prevalence of (22%) for H pylori infection has been reported in North American patients with chronic ITP [13]. This prevalence has been (29%) in adult ITP patients of white French origin [13]. A very high prevalence of H pylori infection in adult patients with ITP from Colombia has been reported (90.6%) [13]. In our study, 27.8% of patients with chronic ITP had H pylori infection which is comparable to results from North America and France.

A previous study in Iran showed that out of 129 enrolled patients with a mean age of 29.2±7.0 years (range, 18-46 years), 66 patients (51.2%) were females [14]. Elezović et al. [15], reported that in 167 patients with chronic ITP 136 were females (81.4%), and the median age was 35 years (range, 17-74 years). In our study on 90 patients with chronic ITP, the mean age was 36.7±14.2 years (range, 14-69 years), and 77.8% were females. Schoonen et al. [16], have reported that the average incidence of chronic ITP was significantly higher among women compared to men and among men the incidence was bimodal with peaks among ages under 18 and between 75-84 years. Among our patients (male or female), more patents were under 30 years (young adulthood) which agrees with results of other studies 2,4-6. With increasing age, the number of our patients decreased which is also in line with findings reported by Uchiyama et al.[1].

Dal et al. [17], in a case report indicated that hemoglobin and WBC in their patient were 12g/dl and $8x10^3/\mu L$, respectively. In our study, the range of Hb was 9.6-17.5 g/dL, which shows that probably there is no relation between anemia and ITP. Also, the range of WBC was 3.9-20.5($x10^3/\mu L$). Therefore, Hb and WBC count among our chronic ITP patients did not seem to be low and might be even somehow higher than the normal range. Also, we observed that Hb count was higher in our patients with H pylori infection. More studies with higher population is suggested to further evaluate the correlation between Hb and H pylori infection among patients with chronic ITP.

Conclusion

In the present study the peak incidence of chronic ITP was seen among young adults.

The prevalence of H pylori infection among patients with chronic ITP in our study was in line with the prevalence reported from North America and France.

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