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Correlation Between Demographic and Laboratory Variables in Adult Patients with Acute Idiopathic Thrombocytopenic Purpura in West Iran

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ABSTRACT

Background: Idiopathic thrombocytopenic purpura 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 aim of the present study was to evaluate the clinical variables in adult patients with acute ITP in west of Iran.
Patients and Methods: Medical records of adult patients with diagnosis of acute ITP referring to Hematology Clinic of Kermanshah from year 2004-2014 were analyzed. Demographic and hematologic data and status of *H pylori* infection of the patients were extracted.
Results: There were records of fifty-three patients diagnosed with acute ITP. Mean age at diagnosis was 39.1 years (±13.3) ranging from 14-68 years. Twenty patients (37.7%) were male. Out of 53 patients, 25 cases (47.2%) were positive for *H pylori* infection. There was significant association between Hb and platelet with sex of the patients (P≤0.05).
Conclusions: Mean age of adult patients with acute ITP was more than figures expected in chronic ITP patients. In addition, Prevalence of *H pylori* infection in acute ITP patients was more than chronic ITP patients.

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Introduction

Idiopathic thrombocytopenic purpura (ITP) is an autoimmune disorder in which platelet destruction is mediated by anti-platelet antibodies. There are two forms of ITP: acute and chronic.[1] The acute form is frequently observed among children, but the chronic form mainly inflicts adults. There are numerous differences and similarities in clinical and laboratory findings between children and adult patients with ITP.[2] Helicobacter pylori (H. pylori) is a gram-negative, spiral shaped bacterium that colonizes the gastric mucosa. It is a major cause of gastritis and peptic ulcer disease as well as the development of gastric malignancies.[3] In several studies, an association between H. pylori infection and a number of autoimmune disorders such as adult ITP has been proven.[4-6] Helicobacter pylori is highly prevalent in developing countries and is common among 57–91% of the Iranian population[7]. We aimed to evaluate the clinical variables and status of H. pylori infection in adult patients with acute ITP in west of Iran.

Patients and Methods

During 2004-2014, fifty-three patients with acute ITP (platelet range=50-99 x10^3/μL) referred to Hematology Clinic in Kermanshah, west Iran. Age, sex, Hb, WBC count, platelet count were analyzed. All patients had also been screened for H. pylori infection using H. pylori urea breath test (UBT) and serum H. pylori antibody.

Correlation between Hb, WBC and platelet counts with H pylori infection and age of the patients was assessed

using t test. The association between H. pylori infection and sex was assessed by Chi-square test (Fisher's exact rest). P<0.05 was considered statistically significant. Data were analyzed using SPSS software, version 19.

Results

The mean±SD age at diagnosis was 39.1±13.3 years (range=14-68 years). 25 (47.2%) patients were less than 40 years of age. Twenty (37.7%) patients were men and 33 (62.3%) patients were women. Out of 53 patients, 25 (47.2%) had H. pylori infection (table 1).

Mean platelet count at diagnosis was $71\times10^3/\mu L$ (range=52-99), mean Hb was 13.5 g/dL (range=11-18) and mean WBC was $8\times10^3/\mu L$ (range=2.2-40).

We compared age, WBC, platelet count and H. pylori infection in patients with acute ITP with respect to sex. There was only a significant association between platelet count and sex (P≤0.05, table 2).

Table 3 shows the association between age, Hb, WBC and platelet count with H. pylori infection. No association was found between these variables and H. pylori Infection (P>0.05).

Discussion

ITP is an acquired autoimmune disorder characterized by thrombocytopenia and mucocutaneous bleeding.[8] It is commonly assumed that ITP results from autoantibodies causing accelerated platelet destruction. Recent data suggests that autoantibodies may also inhibit platelet production.[9] Diagnosis of ITP is complex and is based on exclusion of other causes of thrombocytopenia.[10]

A study on patients with chronic ITP from Iran showed that 66 out of 129 (51.2%) patients with a mean±SD age of 29.2±7.0 years (range=18-46 years), were female.[11] Elezović et al.[12] reported that 136 out of 167 patients with chronic ITP were women (81.4%) and median age of their patients was 35 years (range=17-74 years). In another study[1] on 90 patients with chronic ITP, mean±SD age at diagnosis was 36.7±14.2 years (range, 14- 69 years) and 77.8% were women. In our study on patients with acute ITP, the mean±SD age of the patients was 39.1±13.3 years (range=14-68 years) and 62.3% were women, which is almost similar to the other studies. Frederiksen and colleagues found a mean age of 56 years in 221 patients with acute ITP.[13] Another study reported that there was no significant correlation between age or platelet count with H. pylori infection which the results were in accordance with our study.[14]

The prevalence of H. pylori infection in adult patients with ITP has been systematically reviewed which was found not to be different from that reported in the general population when it was matched for age and geographical

Table 1: The Basic characteristics of all of patients with acute ITP (n=53)

Variables	n (%)	Mean±SD	Range
Age(year)		39.1±13.3	14-68
<40	25 (47.2)		
≥40	28 (52.8)		
Sex			
Male	20 (37.7)		
Female	33 (62.3)		
H. pylori Infection			
Positive	25 (47.2)		
Negative	28 (52.8)		

Table 2: The variables in acute ITP patients based on sex (n=53)

Variables	Sex (Mean±SD)		P value
	Male	Female	
Age (year)	42.7±13.5	36.8±12.9	P=0.1*
White Blood Cell ($x10^3/\mu L$)	9.2±7	7.7±2.4	P=0.3*
Platelet ($x10^3/\mu L$)	76±13	69±11	P=0.05*
H. pylori Infection, n (%)			
Positive	12 (60)	13 (39.4)	P=0.1**
Negative	8 (40)	20 (60.6)	

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

Table 3: Variables in acute ITP patients in terms of *H pylori* Infection (n=53)

Variables	*H pylori* Infection(mean±SD)		P value
	+	-	
Age (year)	37.6±14.4	40.3±12.4	P=0.4*
Hemoglobin (g/dL)	13.9±1.6	13.2±1.4	P=0.08*
White Blood Cell ($x10^3/\mu L$)	9±6.9	7.6±2.4	P=0.3*
Latelet ($x10^3/\mu L$)	73±14	70±11	P=0.3*

*T-test

area.[15] In Japan, the prevalence of H. pylori infection is greater than 70%. A prevalence of 22% for H. pylori infection has been reported in North American patients with chronic ITP.[16] This prevalence has been reported about 29% in adult patients with ITP of white French origin.[16] A study on patients with chronic ITP[1] showed a prevalence of 27.8% for H. pylori infection. In our study, the prevalence of H. pylori infection in acute ITP patients was 47.2% which was greater than other studies except from Japan. Therefore, we can assume that prevalence of H. pylori infection in acute ITP patients was more than what is expected from other studies on patients with chronic ITP.

A case of ITP associated with splenic tuberculosis has been reported that hemoglobin and WBC count were 12g/dl and 8×10^3/µL, respectively.[17] Another study on 93 patients with chronic ITP showed Hb measurements in range of 9.6-17.5 g/dL and WBC counts 3.9-20.5($\times10^3$/µL), respectively[2]. In our study in acute ITP patients, mean of Hb and WBC counts were 13.5g/dl and 8×10^3/µL, respectively. These results showed that probably there has been no correlation between Hb and ITP in terms of chronicity (acute or chronic). In our study which analyzed adult patients with acute ITP, mean platelet counts was significantly higher in men than women ($P<0.05$).

Conclusion

Mean age for adults with acute ITP was more than what is expected among patients with chronic ITP. Moreover, it can be assumed that the prevalence of H. pylori infection in patients with acute ITP is more than those with chronic ITP.

Conflict of Interest: None declared.

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