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Prevalence of Immune Thrombocytopenia Purpura in Wasit Province

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ABSTRACT: A lower-than-normal platelet count is a hallmark of the acquired autoimmune disease immune thrombocytopenic purpura (ITP). This autoimmune disease is characterized by low platelet counts, purpura, and hemorrhagic episodes caused by antiplatelet autoantibodies.

Additionally, it inhibits the production of platelets, which can be affected by drugs, infections, cancer, or other autoimmune disorders. Immune thrombocytopenia purpura can be classified into two types: acute and chronic. The acute type, which affects both sexes and typically manifests in childhood, may be brought on by a viral infection, Conversely, the chronic form, more common in women than in males, can affect adults of any gender and is not always associated with a virus infection.

Immune thrombocytopenic purpura is a heterogeneous disease with varying biological behavior in terms of clinical outcome and response to treatment, better results are shown in children with the condition, but worse results are seen in adults.

Conclusions: We conclude from the current study that Age and gender and types of disease has a clear effect on patients with Immune Thrombocytopenia purpura.

Keywords: immune thrombocytopenia purpura, ITP, age, gander, chronic, acute.

1. INTRODUCTION

Immune thrombocytopenia purpura (ITP) is an acquired haematological autoimmune disorder marked by the development of antiplatelet antibodies that cause platelets to be destroyed more quickly and removed from circulation too soon by reticuloendothelial system macrophages. It also prevents platelets from being produced, which can be influenced by medications, infections, cancer, or other autoimmune diseases [1]. Bleeding is the most common manifestation (bleeding of oral cavity, skin, or gastrointestinal tract). Purpura may manifest itself in the absence of a trigger. The most dangerous and dreaded consequence is intracranial haemorrhage [2].

In children, the incidence of ITP ranges from 1.9 to 6.4 per 100,000 per year between 3.3 and 3.9 per 100,000 per year, according to the most recent consensus of the Thrombocytopenia International Working Group [3]. The adult chronic population in the United States is estimated to be 60,000, with a gender ratio of around 2:1. For this reason, ITP has been designated as an orphan sickness [4]. There are two forms of ITP: acute and chronic. Both genders are affected by the acute form, which usually manifests in childhood and may be brought on by a viral illness. Within three months, the majority of youngsters (85%) recover without the need for treatment. Conversely, the chronic type is more prevalent in people between the ages of 20 and 50, with a higher frequency in females (3 to 1) and is typically unrelated to a virus infection [5]. Pregnant women and those of childbearing age have higher rates of ITP [6]. one of the factors that are known to contribute to ITP include triggers including helicobacter pylori infection, pregnancy, and viral exposure throughout childhood, as well as decreased production of the glycoprotein hormone thrombopoietin, which stimulates

platelet formation[7]. . Compared to men, women are more likely to develop autoimmune disorders, because they typically have two X chromosomes. When woman go through puberty, their hormones fluctuate, which raises their risk of autoimmune diseases[8].

The study's objectives include Determine the spread rate in the Wasit Governorate by researching potential relationships between study sample factors, such as age and gender, disease duration, and their relevance to immune thrombocytopenia purpura.

2. MATERIALS AND METHODS

2.1 Study design:

The study encompassed 50 patient Samples were collected from Wasit center for treatment of malignant tumor in Al-Karama teaching hospital after taking information from patients and healthy people and filling out the form for each person (38 chronic and 12 acute) with immune thrombocytopenia purpura, comprising 13 male and 37 female participants aged between 3 and 60 years, as well as 50 control volunteers (4–60 years) in the same age range within the limited period from September 25, 2023, to March 15, 2024.

2.3 Statistical Analysis:

The current investigation's findings were analyses using an Anova test and statistical software (SPSS 24). The data was displayed using M±SD. The connection between Pearson the study employed the coefficient to evaluate the statistical significance, direction, and strength of the linear correlation between the control group and immune thrombocytopenia purpura patients' data. If the P-value was less than 0.05, all tests were deemed significant.

3. RESULTS

A total of 50 patients with immune thrombocytopenia purpura (ITP) were included in this study, as shown in the table 1. the majority of ITP patients were 37 females (74%) and 13 males (26%). From these results, it is noted that the rate of female is higher than the rate of male. also, From the results show in table 1, It recorded the number of patients according to type of the disease. Where, the chronic ITP patients have (38) patients, (31) were female in percentage 81.6%, and (7) male in percentage 18.4 %. and the acute ITP patients have (12) patients, (6) was female and (6) was male with percentage 50.0%. From the results, we see our sample study have chronic type more than the acute type in total ITP patients, furthermore. The percentage of females suffering from chronic ITP was higher than in acute ITP.

while the data shows in table 2 that ITP patients age ranging between (3-50) years and the healthy control from (3-50) years. Five age classes correspond to different patient groups, as indicated by the results in table 2. the first age class ((3-12)years) within patient group ,there are 14 patient , constituted the highest percentage with age groups with percentage of 28%.the second age class ((13-22)years) there are 8 patient ,with in percentage 16%,while the third age class was ((23-32)years) there are 10 patient ,with in percentage 20%.on the other hand, the fourth age class ((33-42)years) there are 10 patient ,with in percentage 20%, while the fifth age class ((43-50)years) there are 8 patient ,with in percentage 16%.In our sample study, there were more patients in the 3 to 12 age group than in any other age group. According to the current study. Also, there are five age classes to patient groups in Chronic and Acute ITP case. First age class ((3-12) years) within total patient group, there are 12 patient with chronic ITP with in percentage 31.6%. , and 4 patients with Acute ITP with percentage 33.3% . second age class ((13-22) years) within patient group in Chronic case, there are 8 patients, with in percentage 21.1% and there is no patients with Acute ITP. with the Third age class ((23-32) years) within patient group in Chronic patients, there are 5 patients, with in percentage 13.2% and for the Acute ITP there was 5 patients with percentage 41.7%. fourth age class ((33-42) years) within patient group in Chronic ITP, there are 7 patients, with the percentage 18.4% and there was 1 Acute ITP with percentage of 8.3%. finally, the fifth age class ((43-50) years) within patient group in Chronic ITP, there are 6 patients, with in percentage 15.6% and for the Acute ITP there are 2 cases with percentage 16.7%. from our results there are more chronic and acute patients in the age ranges of (23–32) and (3–12 years).

Table 1. - distribution of ITP patients according to Gander.

Gender	Chronic ITP		Acute ITP		ITP Patients		p-value
	NO.	%	NO.	%	NO.	%	
Male	7	18.4	6	50.0%	13	26%	**p-value=0.233**
Female	31	81.6	6	50.0%	37	74%	
Total	**38**	**100.0%**	**12**	**100.0%**	**50**	**100.0%**	

A) capital letter: The mean difference is significant at the 0.05 level (2-tailed).
(a) small letter: The mean difference is not significant at the 0.05 level (2-tailed).

Table 2. -Distribution of ITP patients and control groups dependent on age.

Age (years)	ITP Chronic		ITP acute		ITP Patients		Healthy Control		p-value
	NO.	%	NO.	%	NO.	%	NO	%	
(3-12) years	12	31.6%	4	33.3%	14	28%	7	17.5%	0.002
(13-22) years	8	21.1%	0	0.0%	8	16%	9	22.5%	
(23-32) years	5	13.2%	5	41.7%	10	20%	7	17.5%	
(33-42) years	7	18.4%	1	8.3%	10	20%	9	22.5%	
(43-50) years	6	15.7%	2	16.7%	8	16%	8	20%	
Total	38	100.0%	12	100.0%	50	100.0	40	100.0%	
$\boldsymbol{Mean \pm SD}$ **Range**	12.659 ±14.670 A (50-3)		25.083 ±15.335 A (47-3)		31.271 ±14.453 A (50-3)		28.300 ±14.733 A (55-4)		

Data = Mean ± stander deviation
A) capital letter :The mean difference is significant at the 0.05 level (2-tailed).
(a) small letter :The mean difference is not significant at the 0.05 level (2-tailed).

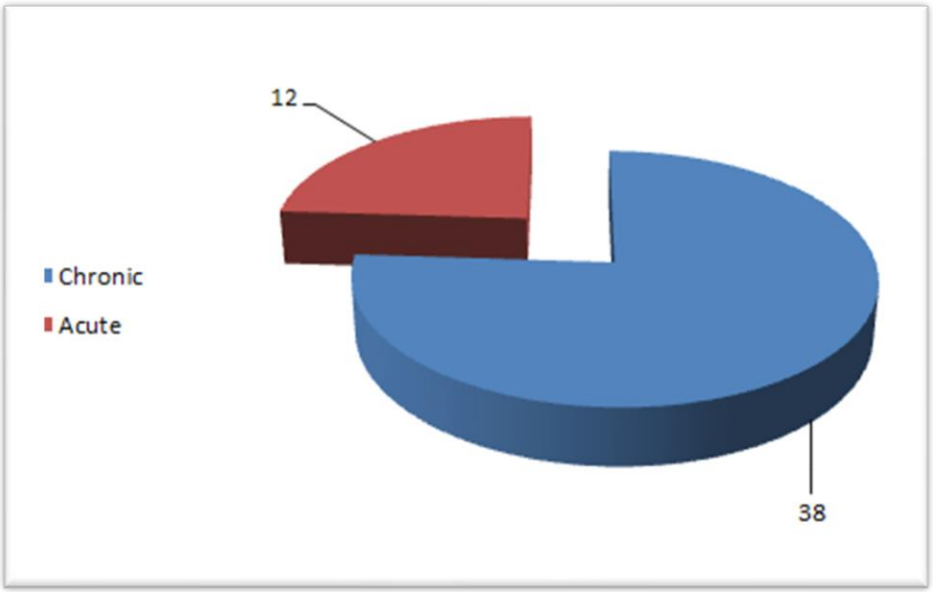

Figure 1. - Show the type of Disease duration for ITP patient.

4. DISCUSSION

As our study indicates in Table No 1, the overall incidence of ITP in females (74%) and in males (26%), the current study show that there was higher number in females than in males with ITP . In general, ITP affects both sexes, usually appears in childhood, may also be preceded by a viral illness and is more common in women than in men. It is generally known that adults with ITP tend to be more female, and this is what our statistics also indicate. The greater prevalence of autoimmune diseases in women is thought to be partly related to the gender gap [9]. Having two X chromosomes essentially creates a "double dose" of genes in the body. However, females are more susceptible to developing autoimmune diseases. These significant differences in the functioning of the immune system of females and males are due to the X and Y sex chromosomes and sex hormones [8]. Females show elevated gene expression on the X chromosome, especially in immunological markers. They also display greater production of Th2 response and antibodies, resulting in enhanced protection against infection. However, this increased immune response also makes them more susceptible to developing autoimmune diseases. It may be suggested that in women, the chance of developing autoimmune diseases is increased due to the rise and imbalance of hormones that occur throughout puberty. The results of the current study are consistent with [10], that show each study included a greater proportion of women in the ITP patient group. ITP also was more common in women than in men in both prevalence studies [11], [12].

We also noted that the number of patients suffering from chronic ITP was (38), with percentage (76%), and the number of patients suffering from acute ITP was (12), (24%). As the data in Table (1) show, the prevalence of chronic ITP was greater than that of acute ITP in total ITP patients. we also see the percentage of female with chronic ITP was higher than in Acute ITP with percentage for the chronic ITP female with 81.6%. In our study, we notice that the condition of patients with ITP changes from the acute form to the chronic form if there is no response to treatment. [13] Consistent with our results that found the, Mean age at diagnosis was significantly higher in chronic ITP ($p < 0.01$). Chronic course was significantly higher in female patients ($p < 0.05$). [14] also show that, indicate that for both adults and children, the frequency of acute ITPs turning chronic or persistent is quite similar to experience- and smaller series-based findings. in connection with, Individuals of all ages are more susceptible to ITP. Based on the age at which ITP is diagnosed, there are differences in the expected natural history of the disorder. While the majority of children with ITP will see their ITP settle within the first year (80%), the majority of adults diagnosed with ITP will develop chronic ITP (80%). Consequently, management of adult and pediatric ITP cases frequently differs [15]. In five Nordic nations, a population-based registry conducted between 1998 and 2000 revealed a childhood incidence of 4.8 per 100,000 per year, with a subsequent 25% of the children developing chronic ITP [16].

This study also estimated the ages of ITP patients in Table (2), where the ages of ITP patients ranged from 3 years to 50 years. Data were collected from all ages and genders, and the number of patients in the age group 3-12 years was higher than the rest at a rate of 28%. Also, agree with our results, [17] study shown, at a rate of 31.6%, there seems to be a higher proportion of kids in this age range (3–12 years) with chronic ITP than with acute ITP. Eight patients (16% of the total) with a percentage of 13–22 years had chronic ITP (21.1% of the patients). as well as the results of this study are consistent with his findings, [18], who mentioned that compared to other children, children older than 10 years old showed a considerably greater incidence of developing chronic ITP when we evaluated them based on their presenting age in three separate age groups. Also, in the age groups 23-32 years and 33-42 years in these age groups there were 20 patients with ITP and the age group (23-32) was equal in the type of disease. finally, the elderly ((43-50) years and most of the cases was chronic. Based on the age at which ITP is diagnosed, there are differences in the expected natural history of the disorder. More than 40% of all instances of ITP are known to occur in those under the age of ten, ITP can occur at any age and is quite variable in who it affects. The age group of two to four years old has the greatest incidence rate recorded. Until the adolescent stage is reached, there is little difference in reported instances between males and females. Following this time, females are diagnosed with ITP at a higher rate, while persons over sixty have the highest proportion of cases [15]. while, According to our study, there are more children with chronic ITP than with acute ITP . The majority of ITP patients experience spontaneous remission within the first six months of the illness; 40% of children have the persistent form, which includes patients who do not experience unexpected remission or who do not fully respond to therapy; and 10% to 20% of children develop the chronic form (immune thrombocytopenia purpura present for at least 12 months) [16]. Additionally, as our data indicate, in adults with immune thrombocytopenia, the disease is more chronic, and the disease will progress to the chronic form in patients with acute ITP even if spontaneous remission occurs within months of initial diagnosis, our results are consistent with results of [19].

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