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The Incidence of Idiopathic Thrombocytopenic Purpura and Therapies Used for Patients in Dr. Abd Al Azeez Al Ranteesy Specialized Pediatric Hospital and Al Nasser Pediatric Hospital in Gaza City

M. Mysara S. Saleh *
DR. Mohammed M. Abu Selmia**

الملخص

نسبة حدوث نقص الصفيحات المناعي والعلاجات المستخدمة في مستشفى الدكتور عبد العزيز الرنتيسي التخصصي ومستشفى النصر للأطفال في مدينة

ظهرت الحاجة لتنفيذ هذا البحث لعدم وجود أبحاث أو بيانات عن هذا المرض وللعثور على معدل انتشار ونمط حدوث نقص الصفيحات المناعي مجهولة السبب (الحاد/ المزمن)، والعلاجات والخصائص السريرية للمرض للأطفال أقل من 12 سنة في مدينة غزة. وقد تم إجراء دراسة وصفية تحليلية لمجموعة من الأطفال في مستشفى الدكتور عبد العزيز الرنتيسي التخصصي ومستشفى النصر في مدينة غزة. العينة مكونة من 90 طفلا مريضاً تم تشخيصهم بمرض نقص حدوث الصفيحات المناعي خلال الفترة 2009- أكتوبر 2014م. وذلك بجمع المعلومات والبيانات المطلوبة من خلال ملفات المرضى من أرشيف المستشفيات، ومتابعة الفحوصات المطلوبة والعلاجات التي وصفت للأطفال.

أثبتت الدراسة أن من بين الأطفال تحت الدراسة (90) نسبة مرضى نقص حدوث الصفيحات المناعي بالنسبة لمرضى قسم الدم والأورام في مستشفى الدكتور عبد العزيز الرنتيسي التخصصي 3.72% ووجود نتائج ذات دلالة إحصائية بين نوع العلاج المستخدم وعدد الصفيحات الدموية (p= 0.026)، وكذلك بين عمر المرضى والعلاج المستخدم أثناء المرض (p= 0.0)، ولا توجد علاقة ذات دلالة إحصائية بين الجنس وعدد الصفيحات (p= 0.3).

ولقد كشفت الدراسة عن نتائج تتماشى مع الأبحاث الدولية المنشورة ولا توجد وفيات زائدة مقارنة مع عموم السكان. ومن خلال هذه النتائج فإننا نوصي بمزيد من الدراسات في هذا المجال ومتابعتها ومتابعة العلاجات الحديثة .

كلمات مفتاحيه: نقص حدوث الصفيحات المناعي/ مجهولة السبب، الحاد، المزمن/غزة، فلسطين.

* Faculty of Science_ Islamic University of Gaza_ Gaza _Palestine.
** Bachelor of medicine. National Kive.

Abstract

This retrospective, descriptive study was carried out at the Pediatric Department of Dr. Abd Al Azeez Al Ranteesy, and Al Nasser Hospitals, Gaza. A total number of 90 children (54 males and 36 females) below 12 years of age who were diagnosed with idiopathic thrombocytopenic purpura (ITP) during the period 2009- oct. 2014 were included. To find the incidence and pattern of idiopathic thrombocytopenic purpura (acute-chronic), immune therapies treatment, presenting feature and clinical characteristics of the disease.

The incidence of ITP patients of Dr. Abd Al Azeez Al Ranteesy Specialized Pediatric Hospital in Blood and Oncology Department is (3.72%). There is astatistical significance between the kind of treatment (medicine) and the count of the platelets (p= 0.026). there is a high significant difference in the age of the patients and the treatment (p= 0.0).

In conclusion, the study findings are in line with other international reports, and the mortality rate were normal compared with the general population. Through these results, we urge further studies in this area and follow-up to give modern treatments for patients.

Keywords incidence, idiopathic, thrombocytopenic, purpura, acute, chronic, Gaza, Palestine.

1. Introduction:

Immune thrombocytopenic purpura (ITP), also known as idiopathic thrombocytopenic purpura, is an immune-mediated acquired disease of adults and children which is characterized by transient or persistent decrease of the platelet count and, depending upon the degree of thrombocytopenia, there is an increased risk of bleeding (Francesco et al., 2009).

Thrombocytopenia is one of the most common hematologic problems in the neonatal intensive care unit (NICU). Despite its prevalence, several basic

pathophysiologic questions remain unanswered. For instance, there is a lack of evidence-based guidelines for treatment, and the kinetic mechanisms (decreased platelet production, increased platelet consumption, or sequestration) responsible for most varieties of neonatal thrombocytopenia were not well defined. Moreover, a clear correlation between the degree of thrombocytopenia and the resulting bleeding risk had not been demonstrated (Sola, 2004).

Primary idiopathic thrombocytopenic purpura ITP is the most common childhood haematological disease, characterized by low platelet counts and mucocutaneous bleeding. Idiopathic thrombocytopenic purpura ITP in children is usually benign and, in most patients, resolves spontaneously 6–18 months after diagnosis. Three different phases of the disease were recently defined by members of an International Working Group (IWG), “newly diagnosed ITP” which applies to the disease in all paediatric and adult patients at the time of diagnosis, including self-limited forms; “persistent ITP” which defines the disease in patients who do not achieve spontaneous remission or maintain their response after stopping treatment between 3 and 12 months after diagnosis; and “chronic ITP” which is defined by ongoing thrombocytopenia more than 12 months after the diagnosis (Parodi et al., 2014).

Idiopathic thrombocytopenic purpura ITP is an autoimmune disorder characterized by immunologic destruction of otherwise normal platelets most commonly occurring in response to an unknown stimulus. ITP may occur in isolation (primary) or in association with other disorders (secondary). Secondary causes include autoimmune diseases (particularly the antiphospholipid antibody syndrome), viral infections (including hepatitis C [HCV] and human immune- deficiency virus [HIV]), and certain drugs. Historically, idiopathic thrombocytopenic purpura ITP was believed to be caused by an increased platelet destruction at a rate that exceeded production by a compensating bone marrow. New knowledge has

questioned this model, providing evidence that platelet production also decreases in many patients with ITP (Neunert et al., 2011).

Hemorrhage in idiopathic thrombocytopenic purpura ITP is extremely variable with regard to body site and clinical severity. Platelet count has often been used as a surrogate marker to define bleeding severity and to predict future risk of hemorrhage in persons with ITP. Despite having a low platelet count (<20,000/μL), the great majority of children with ITP do not have major bleeding at diagnosis or during the following 28 days. Yet it is difficult if not impossible for even the most experienced hematologist to predict which children with severe thrombocytopenia will develop life-threatening hemorrhage upon presentation or later in the course of their disease (Flores and Buchanan, 2013).

Diagnosis and management of idiopathic thrombocytopenic purpura ITP remain largely dependent on clinical expertise and observations more than on evidence derived from clinical trials of high scientific quality (Francesco et al., 2009).

Understanding of the mechanisms and etiology of idiopathic thrombocytopenic purpura ITP has progressed significantly in recent years. It is now recognized to be an autoimmune condition, involving not only platelet destruction, but also deficits in platelet production. Furthermore, the advances in the understanding of idiopathic thrombocytopenic purpura ITP have led to the production of guidelines to assist healthcare professionals for its diagnosis and treatment of ITP. This review examined the recommendations made in these guidelines, particularly the American Society of Haematology (ASH) 2011 evidence-based practice guidelines. Corticosteroids, anti-Rho(D) immunoglobulins (anti-D), intravenous immunoglobulins (IVIg) and splenectomy were well-established treatments and continue to be recommended in the guidelines. The only off-label therapy to be recommended in the guidelines was the chimeric monoclonal

antibody rituximab. However, investigations are ongoing into products approved for other indications, which may be beneficial to patients suffering from refractory ITP (Schipperus and Fijnheer, 2011).

The treatment of choice in steroid-resistant ITP was still controversial due to the recent advent of new drugs (anti-CD20 antibodies and thrombo-poietin mimetics) that had encouraged the delay of splenectomy. Consequently, it was extremely important to define the efficacy and safety of splenectomy in the long term (Vianelli et al., 2013).

If no response occurred after splenectomy, prednisone was reintroduced (prednisone maintenance therapy) or therapy was changed to immunosuppressive therapies, danazol, or high-dose dexamethasone. The therapeutic approaches for second-line therapies were in line with the therapeutic guidelines (Johanna et al., 2001).
No significant differences in health-related quality of life were found between children with mild or moderate bleeding or between children who received IVIG or children who were carefully observed. In conclusion, health-related quality of life of children with newly diagnosed ITP was not influenced by treatment modality or bleeding severity, but only by clinical course of the disease (Besley, 2006).

Morbidity and mortality in adult patients with idiopathic thrombocytopenic purpura ITP has seldom been studied systematically. The several patient series reported in the literature have accrued different types of patients, differ in follow-up, and therefore do not permit drawing conclusions on morbidity and mortality in the patient population with ITP at large. Most studies were primarily concerned with the success or failure of different therapies to increase platelet levels, which was a surrogate marker of morbidity. Moreover, although many studies addressed hemorrhagic events and deaths during follow-up, the complications of medical and surgical therapies of the disease have not been consistently taken into account, and

therefore morbidity and mortality of ITP may havw been underestimated (Johanna et al., 2001).

Idiopathic thrombocytopenic purpura ITP is commonly encountered by the practicing hematologists. Clinical management decisions were traditionally guided by individual training and past experience. Input from the literature had been more from observational reports of case series than from scientific results of hypothesis-driven research. Practice guidelines and several surveys of clinical hematology practice highlighted important questions in the field, and in the past 5 to 10 years both clinical and laboratory investigations have produced valuable new information. Thrombopoietin levels were normal or only slightly increased in ITP, and stimulation of thrombopoiesis appears to be a promising new therapeutic approach in clinical trials. Chronic, refractory ITP in children or adults remains a challenge for the hematologist. It was is this group that have the greatest risk of serious bleeding, particularly among the elderly. The anti-B-cell monoclonal antibody, anti-CD20, have shown benefit in patients who have failed a number of previous therapeutic modalities. The standard for clinical research into therapy for ITP has become evidence-based medicine, and more prospective, randomized clinical trials were completed by multi-institutional study groups (Barsam et al., 2011).

Related Studies In The Arab Region:

There were scattered and limited data in the literature on ITP in children from the Arab region. The aim of the current review is to present data from this region on the diagnosis, therapy, and morbidity associated with ITP. Neither regional nor national guidelines for ITP management in most Arab countries has been reported. However, the use of initial IVIG therapy in the Arabian Gulf region in contrast to corticosteroids in most other countries was obvious.

Limited data on the use of anti-CD20, avoidance of unnecessary splenectomy, and the use of thrombopoietin receptor analogue in chronic ITP were published recently (ElAlfy and Abdel Maksoud, 2010).

The clinical expression of the disease in Arab countries, by studying 160 patients from Egypt, Saudi Arabia, Oatar and North Sudan, was heterogenous forming a spectrum that included three distinct clinical forms: (a) the acute self-limited form, (b) the intermediate form, and (c) the chronic adulthood-like form. The relative proportions of these forms were 40, 15 and 45%, respectively. The chronic form showed limited response to steroids, and runs a platelet count less than 100,000/μL for more than 1 year, with a tendency for later spontaneous elevation in platelet counts during the first few years of a long follow-up. The intermediate form showed a transient steroid-induced complete remission giving place to widely fluctuating platelet counts above and below 100,000/μL once the steroid dosage was reduced to maintenance levels. Platelet counts in excess of 100,000/μL were achieved in this group by extending steroid maintenance therapy for 6-9 months. In spite of a tendency to chronicity and partial resistance to steroids was the intermediate and chronic forms, the overall response to steroids was enough both to reduce the number of cases requiring splenectomy to 15%, and to prevent the development of major complications in all the children included in the study (Afifi and Guindi, 1981).

Patients who had a platelet count ≤ 20 000/μL and/or mucosal or troublesome lifestyle hemorrhage were treated. The mean age was 6 years 7months with extremes varying from 3 months to 15 years. The bleeding manifestations were dominated by cutaneous bleeding in the form of petechiae or bruise 100%. Epistaxis and gingivorragia were noted in 32,9% and 25,7% of the cases respectively. In recently diagnosed ITP, the response delay under association intravenous immunoglobulin and corticoids was shorter than that of corticoids alone (Sfaihi et al., 2014).

Among the studied children (50), 62% were diagnosed with acute ITP and 38% with chronic ITP. Preceding viral infection was common in both acute (71%) and chronic (63.2%) ITP cases; 68% of the children with ITP showed a platelet count below $20x10^9$/L at the time of presentation. Most of the studied children were treated with IVIG (74%) (Al-Mulla et al., 2009).

Patients were equally distributed between the sexes with a mean age of 56 months. More than half of the patients had an episode of fever 2 days to 8 weeks prior to the diagnosis. For 42% of them, the disease appeared in the months between January and March. Ten percent presented with epistaxis but all of these had a platelet count less than 12,000/μL. One-third of the patients had received immunization 2-8 weeks before the diagnosis, with one patient having a relapse 4 weeks after mumps-measles-rubella (MMR) immunization, which was 1 year after the initial cure. Initial treatment consisted of either steroids or intravenous polyvalent immunoglobulin in 58 and 36% of the cases, respectively. None of the patients had life-threatening hemorrhage. Only 10% of the patients developed chronic ITP (unremitting after 6 months) (Moussalem and Yassine, 2003).

Sixty-five percent of the patients had acute and 34.9% had chronic ITP. Corticosteroids were used as a first-line treatment in 209 patients and showed a total response of 76.6% compared to 85.7% and 84% for IVIG and anti-D immunoglobulin treated patients, respectively (Elalfy, 2013).

A group of patients (350) with ITP aged 2-15 years (mean 6.3 +/- 2.7) were followed up during the period January 1st, 1975 to March 31, 1992. They constituted 40% of cases with hemorrhagic diathesis attending the Hematology/Oncology Clinic, Children's Hospital, Ain Shams University (relative frequency of 37.4/100.000 of the general Out-Patient Clinic in the same hospital). These patients presented with acute (71.4%), chronic (22.9%) and recurrent (5.7%) forms. The age at presentation was lower in

acute ITP. Four chronic ITP cases developed lupus erythema- tosus; all were females > 9 years. As regards therapy, acute ITP cases with initial platelet count (PC) < 10 x $10^{(9)}$/l were randomized to receive either high-dose methyl prednisolone (HDMP) 10 mg/kg b. wt. /day for 5 days i.v. (n = 10) or (IVIG) 0.4 g/kg b.wt. /day for 5 days (n = 10) or conventional-dose prednisone (CDP) 2 mg/kg b. wt. /day 4 weeks p.o. (n = 10). A dramatic response was noticed in the first two groups. IVIG 0.4 g/kg b. wt. /day for 5 days (n = 8) with sustained CR only in 2 patients (25%) and PR in 2 patients (25%).

Splenectomy was performed (n = 12) with CR in 50%; out of them, 2 patients showed no improvement on IVIG therapy (Khalifa et al., 1993).

Splenomegaly was found in 31 (55%) of 56 Arab children with ITP. Of those with splenomegaly, 84% had evidence of iron deficiency anemia compared to 48% in those without splenomegaly (P<0.001). The study demonstrated a much higher prevalence of splenomegaly in Arab children with ITP, most probably related to associated iron deficiency (Hijazi et al., 1995).

Splenectomy cures ITP by removing both the primary site of platelet destruction and an important site of antiplatelet antibody production in an uncertain but large proportion of patients. Platelet counts raised rapidly in 85% of patients. Relapses were encountered, especially in the first 2 years after surgery, but 60-65% of patients remained in clinical remission 5-10 years after splenectomy, an outcome unmatched by any other therapy. A systematic review of 135 case-series published between 1966 and 2004 revealed a complete response rate of 66%, with a median duration of follow-up of 28 months (range, 1-153 months). A recent systematic review of 23 articles and 1223 patients after laparoscopic splenectomy recorded a success rate of 72% at 5 years (Waleed et al., 2012).

Aim of the study:

This retrospective, descriptive study was carried out to determine the incidence of immune thrombocytopenia (ITP), Patients with ITP were identified by the administrative code (ICD-69.3), clinical characteristics, and therapies used for patients in the Blood and Oncology Department of Dr. Abd Al Azeez Al Ranteesy Specialized Pediatric Hospital and Al Nasser Pediatric Hospital, Gaza city, during the period 2009-oct. 2014.

Material and Methods:

The data of this retrospective, descriptive study was collected from the Blood and Oncology department of Dr. Abd Al Azeez Al Ranteesy Specialized Pediatric Hospital and Al Nasser Pediatric Hospital, Gaza city. A total number of 90 children (54 males and 36 females) below 12 years of age who were diagnosed with ITP during the period 2009-oct. 2014 were included. Clinical and laboratory data of 90 children were extracted from the Archives of Dr. Abd Al Azeez Al Ranteesy Specialized Pediatric Hospital and Al Nasser Pediatric Hospital. Medical records were reviewed for children with idiopathic thrombocytopenic purpura ITP, and their management during the initial admission and events during months after diagnosis. After a thorough review of the medical records of all patients found by the initial computer search, patients were included if they had a platelet count less than 100×10^9/L and did not show any signs of other hematological disorders, ie, leukemia, lymphoma, myelodysplastic syndrome, congenital thrombocytopenia, etc.

Thrombocytopenic patients who had a previous history of thrombocytopenia either before 12 years of age or before 2009 were included if they had a preceding unmaintained normal platelet count. A bone marrow examination was performed for all patients to exclude other hematological disorders and to show a normal or increased amount of

megakaryocytes. Relationships between platelet count and baseline characteristics were explored through regression analysis.

Statistics and data analysis:

Data were computer analyzed using SPSS. (Statistical package version 20.0). The statistical tests of significance were applied as follows:

- Simple distribution of the study variables and the cross tabulation were applied.
- Count, percentage, and descriptive statistics.
- Chi-square (X^2) was used to identify the significance of the relations, associations, and interactions among various variables.
- The results in all the above mentioned procedures were accepted as statistically significant when the p-value was less than 5% ($p<0.05$).

Ethical considerations:

According to research ethics, permission was obtained from Helsinki committee and MOH. for performing the study in Gaza City.

Results:

Among the studied population 90 children, 54 children (60%) are males, and 36 of them (40%) are females as shown in table 1.

In Dr. Abd Al Azeez Al Ranteesy Specialized Hospital, there are 34 children (37.8%), just one child (2.9%) was diagnosed as acute idiopathic thrombocytopenic purpura ITP, 30 children (88.3%) were diagnosed as chronic ITP, and 3 of the children (8.8%) had been cured. In Al Nasser Pediatric Hospital, 56 children (62.2%), 8 of them (14.3%) were diagnosed as acute ITP, 27 (48.2%) were diagnosed as chronic ITP and 21 (37.5%) of the children had been cured. So the incidence of ITP in this study is 63.3% as shown in table 2.

The incidence of idiopathic thrombocytopenic purpura ITP patients of Dr. Abd Al Azeez Al Ranteesy Specialized Pediatric Hospital in Blood and Oncology Department is 3.72%, one patient of them made splenectomy (2.94%). Mortality incidence of ITP patients is 2.94% as shown in table 3. Almost patients stayed for treatment in the hospital for less than one week (92.5%), the rest of them (7.5%) stayed for one week or more than one week in the hospital as shown in table 4.

Most of the studied idiopathic thrombocytopenic purpura ITP children were treated with IVIG (43.0%), (51.3%) had prednisone, and (1.8%) had Anti-D. The rest had more than one kind of medicine (3.9%), (1.9%) received platelet transfusions – 6 frequencies alone or with other doses- as shown in table 5.

One patient was treated after platelet transfusions with rituximab but without recovery so splenectomy was the choice for him as recorded in the patient file of hospital archive.

There is astatistical significance between the kind of treatment (medicine) and the count of the platelets (p= 0.026) as shown in table 6.

In table 7, there is a high significant difference in the age of the patients and the treatment (p= 0.0). There is astatistical significance between the count of the platelets and the onset of ITP (p= 0.028) as shown in table 8. The incidence of idiopathic thrombocytopenic purpura ITP patients with platelet count below 20000/μL is 78.9%, and the difference between genders and the count of the platelets is not significant (x^2 =5.7, P= 0.3) as shown in table 9.

Table (1): Percentage of gender of the study population.

	Frequency	Percent %
Male	54	60.0%
Female	36	40.0%
Total	90	100.0%

Table (2): Incidence of the categories of ITP patients in the hospitals.

	Dr. Abd Al Azeez Al Ranteesy	Percent %	Al Nasser	Percent %	Total	Percent %
Acute	1	2.9%	8	14.3%	9	10.0 %
Chronic	30	88.3 %	27	48.2%	57	63.3 %
Recovered	3	8.8 %	21	37.5%	24	26.7 %
total	34	100%	56	100%	90	100%

Table (3): Incidence of the ITP patients in the hospitals.

	Dr. Abd Al Azeez Al Ranteesy	Percent %	Al Nasser	Percent %
Visiting patients	5343	0	9056	0
Blood Dept. patients	913	17.08	845	9.33%
ITP Dept. patients	34	3.72%	56	6.62%
Splenectomy	1	2.94%	0	0
Mortality	1	2.94%	0	0

*** Al Nasser hospital has ageneral department.**

Table (4): Duration of staying in Dr. Abd Al Azeez Al Ranteesy hospital of ITP patients in Gaza city.

	Frequency	Percent %
Less than one week	258	92.5
One week	11	3.9
More than week	10	3.6
Total	279	100.0

Table (5): Types of the treatment of the ITP patients.

	Frequency	Percent %
IVIG	120	43.0%
Prednisone	143	51.3%
Anti-D	5	1.8%
IVIG + Anti-D	2	0.7%
IVIG + Platelets	1	0.4%
IVIG + PRBC	2	0.7%
Platelets	2	0.7%
PRBC	1	0.4%
PRBC + Platelets	1	0.4%
Prednisone + IVIG	1	0.4%
Prednisone + platelets	1	0.4%
Total	279	100%

*** IVIG = intravenous immunoglobulin,**
***Anti-D = anti-Rho(D) immunoglobulin,**
***PRBC = Packed red blood cells.**

Table(6): Correlation between the type of treatment of the ITP children and the platelets count.

	Platelets count	Low than 10	From 11-20	From 21-30	From 31-40	From 41-50	More than 50	Total No. of patients	Pearson Chi-Square (x^2)	Asymp. Sig. (2sided)
IVIG	frequency	51	51	11	3	2	2	120	27.342	0.026*
	%	42.50	42.50	9.17	2.50	1.67	1.67	100.00		
Predni-sone	frequency	60	44	22	9	2	6	143		
	%	41.96	30.77	15.38	6.29	1.40	4.20	100.00		
Anti-D	frequency	5	0	0	0	0	0	5		
	%	100	0	0	0	0	0	100		
Two doses	frequency	10	0	0	0	0	1	11		
	%	90.91	0	0	0	0	9.09	100.00		
Total	frequency	126	95	33	12	4	9	279		
	%	45.16	34.05	11.83	4.30	1.43	3.23	100.00		

*** the relation is significant at the p-value < 0.05 level.**
***Platelets count X1000/µL.**
***Two doses means IVIG+ prednisone or IVIG + Anti- D…. etc.**

Table (7): Comparison between the age of the ITP children and treatment.

		IVIG	Predn-isone	IVIG +PRBC	Predni-sone+ IVIG	Total	Pearson Chi-Square(x^2)	df	Asymp. Sig. (2-sided)
Less than 4 years	frequency	30	7	2	0	39	17.5	6	0.0*
	%	76.91	17.95	5.19	0	100			
From 4 to 8 year	frequency	22	7	0	1	30			
	%	73.33	23.33	0	3.33	100			
From 8 to 12 year	frequency	8	13	0	0	21			
	%	38.11	61.9	0	0	100			
Total	frequency	60	27	2	1	90			
	%	66.72	30	2.22	1.11	100			

*** The relation is significant at the p-value < 0.05 level.**
*** Frequency refers to the number of the children.**

Table (8): Comparison between the age of onset ITP and the platelets count of ITP children.

Platelet count		Low than 10	From 11-20	From 21-30	From 31-40	From 41-50	More than 50	Total	Pearson Chi-Square(x^2)	Asymp. Sig. (2-sided)
Less than 1year	Frequency	5	14	2	1	1	1	24	20.1	0.028*
	%	20.83	58.33	8.33	4.17	4.17	4.17	100		
From 1-4 years	Frequency	14	15	13	2	0	2	46		
	%	30.43	32.61	28.26	4.35	0	4.35	100		
More than 4 years	Frequency	11	3	2	3	1	0	20		
	%	55.00	15.00	10.00	15.00	5.00	0	100		
Total	Frequency	30	32	17	6	2	3	90		
	%	33.33	35.56	18.89	6.67	2.22	3.33	100		

*** The relation is significant at the p-value < 0.05 level.**
*** Frequency refers to the number of the children.**

Table (9): Comparison between the gender and the platelets count of ITP children.

		Low than 10	From 11-20	From 21-30	From 31-40	From 41-50	More than 50	Total	Pearson Chi-Square X^2	Asymp. Sig. (2-sided)
Male	Frequency	30	14	7	2	0	1	54	5.7	0.3*
	%	55.6	25.9	13.0	3.7	0	1.9	100.0		
Female	Frequency	12	15	5	2	1	1	36		
	%	33.3	41.7	13.9	5.6	2.8	2.8	100.0		
Total	Frequency	42	29	12	4	1	2	90		
	%	46.7	32.2	13.3	4.4	1.1	2.2	100.0		

*** the relation is significant at the p-value < 0.05 level.**
*** the relation is not significant.**
*** Frequency refers to the number of the children.**

Discussion:

With the aim of determining the incidence of idiopathic thrombocytopenic purpura (ITP) in this study,the researcher found 3.72% in Dr. Abd Al Azeez Al Ranteesy Specialized Pediatric Hospital as it has aspecialized department (Blood and Oncology Department). Idiopathic thrombocytopenic purpura has been rarely reported in Gaza city. We performed a retrospective analysis of patients with ITP.

Idiopathic thrombocytopenic purpura ITP is an autoimmune disease characterized by isolated thrombocytopenia (platelet count < 100 000/μL) resulting from accelerated clearance and destruction of antibody-coated platelets by tissue macrophages, predominan in the spleen. Antiplatelet antibodies also target antigens on megakaryocytes and proplatelets, variably suppressing platelet production (Johanna et al., 2001).

Among the studied children (90), 10% were diagnosed with acute ITP and 63.3% with chronic idiopathic thrombocytopenic purpura ITP. ITP is more prevalent in boys (60%) when compared with girls (40%), 17.5% of the children with ITP showed a platelet count below 20x10(9)/L at the time of presentation. At last there are 27 children (26.7%) who have been cured. The study showed almost the same results around the world.

In conclusion, most patients with idiopathic thrombocytopenic purpura ITP have a good outcome with infrequent hospital admissions and no excess mortality compared with the general population. However, patients with persistent severe thrombocytopenia not responding to therapy within the first 2 years have considerable morbidity and mortality.

In this study, the incidence of mortality of idiopathic thrombocytopenic purpura (ITP) patients was 2.94% and the incidence of splenectomy was 2.94%.

Despite the fact that idiopathic thrombocytopenic purpura (ITP) is considered a relatively common and easily recognized disease, no firm data are available on its incidence. As we can expect, the disease from CBC blood test shows the platelets count. The incidence of patients with platelet count below 20000/μL is 78.9%. Comparative data of children with newly diagnosed idiopathic thrombocytopenic purpura ITP revealed similarities in presenting platelet counts whereas differences occurred in co procedures and therapy. The combination of IVIG and steroids derived from the observation that steroids administered to reduce headaches in children treated with IVIG (0.8 g/kg b.wt. /day for 2days) resulted in greater increases in platelet counts than expected (Jayabose et al., 1999). This observation promoted doctors to give both drugs simultaneously to patients with newly diagnosed ITP (81.1%), who failed to respond to a single administration. Glucocorticoids are the most common therapy for chronic idiopathic thrombocytopenic purpura ITP (51.3%) but complementary and alternative treatments already come second. Among the studied group, seventeen patients (18.8%) received or currently received only glucocorticoids. Intravenous immunoglobulins (0.8 g/kg b. wt. /day for 2 days) and steroids (methylprednisone or prednisone at standard dosages) were given to 73 patients (81.2%), rituximab to one patient (1.1%), anti-D to 4 patients (4.4%), cellcept to one patient (1.1%).

Rituximab (monoclonal antibody) is appealing because of its curative potential and relative safety and because hematologists are familiar with its use in treating lymphoma. Splenectomy was deferred by 2 years in 40% of the patients who were treated with rituximab (Lani et al., 2014).

In this study, idiopathic thrombocytopenic purpura ITP patients were treated with rituximab which gave good response but sometimes there was

no improvement with no response in some cases so splenectomy was deferred.

Platelet transfusions are commonly used in the ICU; 3.3% to 5.5% of critically ill patients receive a transfusion, the majority of which are used to prevent, rather than to treat bleeding. In our study we find 3 pt. (3.3%) receiving platelet transfusions. One patient (1.1%) was treated after platelet transfusions with rituximab but without recovery so splenectomy was the choice for him (1.1%).

The study findings are in line with the findings of other international reports (Al-Mulla et al., 2009).

Recommendations:

Our results suggest that laparoscopic splenectomy may be considered as a safe alternative to open splenectomy in patients with hematological diseases such as idiopathic thrombocytopenic purpura ITP.

Although further studies are needed to better define the scope of the problem and to reveal etiology of idiopathic thrombocytopenic purpura ITP in Gaza, Palestine, we would recommend screening for thrombocytopenia upon diagnosis and at 5-year intervals thereafter.

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