# Clinical profile of ITP in Children: A single center study

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## Abstract

**BACKGROUND:** Idiopathic thrombocytopenia (ITP) is the most common bleeding disorder in children, characterized by immune mediated platelets destruction.

**Objective**: The aim is to determine the clinical features, treatment and outcomes of children with ITP.

**PATIENTS AND METHODS:**

The files of 165 pediatric patients diagnosed and treated between January 1997 and September 2005 were retrospectively reviewed; data abstracted including age, gender, presenting clinical features, laboratory findings and treatment outcome.

## RESULTS:

They were 98 males and 67 females patients (M:F) (1.5:1).The median age was 4 years and 6 months with a range between 1.5months -15 years. The most common presenting features were purpura in 92.7%, epistaxis 37%, and gum bleeding 17.5%.

One hundred fifteen (70%) of the patients had platelets count less than 20.000/µl. One hundred fifty one Patients (94%) were treated. Steroids was given to 123 Patients with 89% response rate (110 patients), 13 patients did not respond to steroid therapy. Out of the 110 patient responded to steroid only 74 patient thrombocytes count had sustained the response to steroids. IVIG was given to 61 Patients. Forty six patients (75%) had a good response to IVIG but only 21 patients had a sustained response. Combined treatment of steroid and IVIG was given to 57 Patients, only 25 patients (28%) had response and none of them had sustained response. The 57patients had combined therapy were; 29 had combined steroid and IVIG from the start, while the other 28 patients were 13 patients who had steroid and they did not respond, and the other 15 patients had IVIG only but did not showed response. Nine patients had Splenectomy, 7patients (77.8%) responded and only two patients did not show response.

One hundred fifty one (94%) Patients recovered within 4-8 weeks, 43 (26%) developed chronic ITP (persistent more than 6 months), nine children underwent splenectomy and was curative in 7 patients. Nine Patients recovered spontaneously, 11 patients have persistent thrombocytopenia, and 13 patients were lost follow up. Overall, 140 patients (85%) of 165 children recovered completely.

## CONCLUSION:

Acute and chronic ITP in children are generally benign condition. Treatment decisions should follow guide line based on the clinical picture and platelets count. Splenectomy should be considered in chronic ITP with significant bleeding and for patients did not respond to medical treatment.

**Key words**

ITP in children, Splenectomy, Steroid, IVIG, Chronic ITP

## INTRODUCTION*:*

Idiopathic thrombocytopenic purpura (ITP) in children is usually a self- limiting disorder. It manifests typically as isolated thrombocytopenia and mucocutaneous bleeding. It is usually preceded by viral infection or immunization and by the time of diagnosis most children have recovered from their viral symptoms.

Although ITP is most common between 2 and 5 years of age, it occurs in all pediatric age groups [(1)]. The incidence is about 4 per 100,000 children per year [(2)].

Most children remit spontaneously within six to eight weeks and have only cutaneous or mild bleeding. [(3)] Intracranial hemorrhage (ICH) is extremely rare with the incidence of about 1% (2), but it is the major cause of death in children with ITP. [(4)] Persistent (Chronic) ITP is defined as the documented persistence of thrombocytopenia for more than 6 months from initial presentation. [(7)]

Treatment to raise the platelet count, even when profoundly low, is not always required, options include steroids, intravenous immunoglobulin (IVIG), anti-D and immunosuppression drugs. [(5,6)] Splenectomy is rarely required and should be reserved for those who have both chronic ITP and significant bleeding problems. [(7)]

Chronic ITP is defined as the documented persistence of thrombocytopenia for more than 6 months from initial presentation. [(8)]

## Method

This retrospective study was carried out at the hematology pediatric outpatient clinic in the Tripoli Medical Center. We have reviewed the medical files of 165 pediatric patients diagnosed and treated for acute and chronic ITP between January 1997 and September 2005. Data abstracted include age, gender, and history of immunization, history of viral infection, presenting clinical features, laboratory findings, treatment and outcomes.

## Result

One hundred sixty five patients were identified in this retrospective study. There were 98 (60%) male and 67 (40%) female (m: f = 1.5:1). Figure 1. The median age was 4.5 years with range (1.5 months – 15 years).

Figure 1. Sex distribution of children with ITP

The most common presenting features were purpura 153 (92.7%) manifested as petechial rash and /or ecchymosis; 61 patients (36.9%) presented with epistaxis, 29 patients (17.5%) with gum bleed, 6 patients (3.7%) with hematuria and one child with bloody diarrhea. Acute viral illness preceding this illness was reported in forty-seven children (28%) of ITP patients in this study.

Majority of the cases (97%) have platelet count less than 20,000/μL with the mean 13,000/μL and most of the cases were diagnosed by clinical features and peripheral blood film. Few cases underwent a bone marrow examination which was normal.

One hundred fifty one patients received treatment. Steroids are given to (123) patients with response rate of (89.4%). Sustained response to a single course of steroids in (59.3%), and (30%) were initially responded then relapsed when steroids reduced or stopped.

IVIG in (61) patients out of them 46 patients responded (75.4%), 21patients (34.4%) sustained response and 25 (40.9%) relapsed after initial response. Combined treatment in (57) patients with 25/57 (43.8%) response rate, 14 (1.4%) patients recovered spontaneously.

Ninety four patients (57%) recovered within 4 to 8 weeks.

Forty three patients (25%) developed chronic ITP ( persistent > 6 months), of these 9 patients underwent Splenectomy and was curative in 7 ( 77.7%) patients, 9 patients recovered, 11 patients have persistent thrombocytopenia, one patient died due to CNS bleeding and 13 patients were lost for follow up.

Overall 140 patients (84%) recovered completely.

| No response | Sustained response | Response | Total number | Treatment |
|---|---|---|---|---|
| 13 | 73 | (%89) 110 | 123 | Steroids |
| 15 | 21 | (%75) 46 | 61 | IVIG |
| 32 | - | (%28) 25 | 57 | multiple |
| 2 | - | (%77.8)7 | 9 | splenectomy |

Table (1) response of treatment of ITP

## DISCUSSION

ITP is one of the most commonly acquired bleeding disorders. Usually it is not serious and most children improve within weeks to months. Our result showed 29% of cases preceded by viral illness. Data about immunization were not available .In our study, the median age was 4.5 years range (1.5mo.-15 yrs.) slightly younger compared to other studies [12,13], and more common in males (60%). Most patients presented with purpura (92.7%), epistaxis (36.9%), gum bleeding (17.5%) and hematuria (3.7%). The majority of the cases in our study diagnosed by clinical features and blood film, only few cases underwent a bone marrow examination but it did not alter the diagnosis, as reported by others [13].

Most children remit spontaneously within six to eight weeks and have only cutaneous or mild bleeding [3], but in our study only fourteen children remit spontaneously because the majority of children needed treatment at presentation. Corticosteroids treatment in ITP, increase the platelet count in about 80% of patients [10]. In this study, 123 children received steroid, of those, 110 (89.4%) responded. This result supported Waits reported data [13]. Most of the children recovered before 6 months from diagnosis. In our study 43 (25%) of children developed chronic ITP (persistent >6 months) in contrast to a much higher incidence in another study (57%) in a cohort described by lower et al [9]. Out of these 42 patients, nine children had normal platelets counts, thirteen children missed follow up, eleven children still under follow up with low platelet, one child died due to intracranial hemorrhage. Furthermore, nine children underwent Splenectomy; seven of them responded (77.8%). ITP response to Splenectomy in this study was different significantly from George et al reported result in 271 children who had elective Splenectomy for chronic ITP. [14] The American Society of Hematology (ASH) practice guidelines recommended that Splenectomy be considered for children in whom ITP has persisted for at least one year, and who have symptoms of bleeding and a platelet count less than 10,000/uL ( ages 3 to 12 years) of 10,000 to 30,000/uL (ages 8 – 12 years)(14). In this study, all patients who was treated either had symptoms or signs suggestive bleeding or/and severe thrombocytopenia.

## Conclusion

ITP in children has a good prognosis. Only a small number of children end up with chronic type of the disease. Severe thrombocytopenia and serious bleeding is not common. Giving treating is usually based upon clinical feature. Either of the

treatment modalities can be used, but in severe and unresponsive cases to steroid and/or IVIG, Splenectomy can be effective in some resistant cases.

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