

CONSERVATIVE APPROACH IN THE MANAGEMENT OF CHRONIC IMMUNE THROMBOCYTOPENIA IN AN CHILD: A CASE REPORT

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ABSTRACT

Immune thrombocytopenia (ITP) represents an acquired autoimmune condition featuring isolated thrombocytopenia caused by platelet destruction and diminished platelet production mediated by immune mechanism. Most children with this condition experience spontaneous recovery, but some patients have chronic form of ITP that needs further observation.

This case study, describe a 8 years old patient with chronic ITP lasting for two years and presenting with fever, cough, generalized weakness, petechiae and ecchymosis. At the time of admission, the platelet count of the child was 30,000/ μ L, all other hematologic and biochemical tests were normal. Thrombocytopenia without presence of any abnormal cell was diagnosed via peripheral blood smear. As the child was hemodynamically stable, he had no signs of mucosal or internal bleeding; therefore, conservative management strategy was implemented including supportive treatment, antipyretics and platelet count monitoring. While being in the hospital, platelet count gradually increased up to 95,000/ μ L and 125,000/ μ L without using corticosteroids or intravenous immunoglobulin administration. The patient recovered well and was discharged from the hospital with recommendations on hematology follow-up.

This case illustrates that careful evaluation and management may lead to positive outcome in selected children with chronic ITP without using immunosuppressive therapy,

Keywords: Chronic immune thrombocytopenia, petechiae, ecchymosis, intravenous immunoglobulin.

INTRODUCTION

Definition

Immune thrombocytopenia (ITP) is a primary acquired immunological hematologic disease which is characterized by reduced platelet count in the absence of any underlying etiology. The reduction in the platelet count in ITP occurs due to the immune destruction of platelets along with their decreased production, and can vary from asymptomatic thrombocytopenia to hemorrhagic manifestations. While ITP usually runs a self-limited course among children, some patients may have a chronic course of the disease which requires monitoring over a long period of time. According to the International Working Group, the classification of ITP includes: new-onset (< 3 months), persistent (3-12 months), and chronic (> 12 months) ITP ^[1,2].

Epidemiology

ITP is not a common disorder, and it ranks as one of the most common acquired forms of thrombocytopenia in children. Its frequency in the pediatric age group ranges anywhere from 2 to 10 cases per 100,000 children annually depending on the specific population and criteria for diagnosis ^[3,4,5]. The disorder typically affects young children, especially those within the age range of 2 to 5 years old. A recent viral infection is usually found in history and sometimes ITP occurs in association with immunization ^[4,5]. Even though most of the children affected by the disorder recover spontaneously, chronic ITP can occur in some patients ^[2,6].

Etiology

Despite advances made in understanding the disease process of ITP, the pathogenesis of the disorder is not known. It is suggested that ITP results from the loss of self-tolerance against platelets in the body. While it often follows a recent viral infection in most children, occasionally it develops after immunization. There are instances where secondary ITP arises due to underlying medical conditions such as autoimmune diseases, immunodeficiency, infections, and certain drugs ^[1,7,8].

Pathophysiology

The underlying pathophysiology of ITP is characterized by an intricate interplay between the humoral and cellular immune responses. Antibodies, which are primarily of the IgG class, are formed against the glycoprotein antigens on the surface of the platelets like GPIIb/IIIa and GPIb/IX. The antibody-bound platelets are then removed from circulation by the macrophages of the spleen. Besides the peripheral destruction of the platelets, T cell regulation failure, autoimmunity of the B cells, and impairment of the megakaryocytes lead to decreased platelet formation ^[7,9].

Signs and Symptoms

Presentation of ITP depends upon the level of platelets and degree of platelet malfunction. Most patients are asymptomatic and are detected incidentally from routine blood tests. The common symptoms of this condition include mucocutaneous bleeding such as petechiae, purpura, ecchymoses, bruises, nosebleeds, bleeding gums, prolonged bleeding after any injury. Children may suffer from tiredness and decreased activity. Acute ITP may occur due to viral infections, but there could be no prior infection found in some cases. Bleeding does not depend upon the platelet count directly, so it is important to have a thorough clinical evaluation and bleeding history of the patients ^[1-3].

Complications

Major hemorrhage, especially intracranial hemorrhage, is one of the main complications of ITP, though it is very uncommon in children. The other complications include hemorrhage in the digestive system, haematuria, serious bleeding from the mouth and, in the case of females who have gone through puberty, excessive menstrual bleeding. Recurrent and persistent thrombocytopenia can affect schooling and other physical activities. There is an increase in risk for bleeding in cases of trauma, surgery and intake of drugs which decrease the ability of platelets to function properly, like aspirin and some non-steroidal anti-inflammatory drugs. Some of the side effects of treatment of ITP include corticosteroids causing diabetes, high blood pressure, mood swings and increased risks for infections ^[1-3].

Diagnosis

ITP is mostly clinically and lab-based, and the diagnosis is a rule of exclusion. The history would involve a history of recent infection, vaccination, medications, bleeding complaints, family history, and features of systemic disease. The physical examination would often show petechiae, purpura, ecchymosis, epistaxis, or mucocutaneous bleeding. In cases where hepatosplenomegaly or marked lymphadenopathy is present, it is important to consider other possible causes of the problem. On lab tests, there is usually isolated

thrombocytopenia on complete blood count, and peripheral blood smear will help in ruling out pseudo thrombocytopenia, abnormal blood cells, or hematological disease ^[1,2,10]. Bone marrow examination is not needed in cases of a child with typical signs and isolated thrombocytopenia. Further tests will be indicated depending on the clinical scenario ^[1,10].

Management

Management of children with ITP is tailored to the degree of bleeding, platelet counts, disease duration, quality of life, and bleeding risks of patients. Those with no bleeding or having only mild mucocutaneous symptoms can be managed with observation and follow-up visits without the need for immediate pharmacological intervention ^[11,12]. When treatment is needed, corticosteroids are frequently used as primary therapy, whereas IVIG can be used if a quick rise in platelets is needed or corticosteroids are contraindicated ^[1,12,13]. For those with chronic or persistent ITP with clinically significant bleeding or lack of effect with primary therapy, secondary treatments such as thrombopoietin-receptor agonists like eltrombopag and romiplostim, rituximab, and splenectomy can be used in certain conditions ^[12,14,15]. In managing ITP, the aim is not to restore normal platelet counts but to reach a level of platelets that will prevent clinically significant bleeding without causing toxicity from the treatment ^[1,2].

With all the advancements in the knowledge about the disease, the management of chronic ITP in children still tends to be personalized due to variations in the course of the disease among different patients. Bleeding is rare in children with ITP, so it should be kept in mind when choosing a treatment option that depends on the general condition of the patient rather than platelet level alone ^[16,17]. This case report demonstrates that an 8-year-old child suffering from chronic ITP with fever and cutaneous symptoms of bleeding had been successfully treated conservatively.

CASE PRESENTATION

An 8-year-old male child was admitted in the Department of Pediatrics in July 2026. The child had a history of chronic immune thrombocytopenia (ITP). He had been diagnosed with ITP for the first time in October 2024, where he presented with thrombocytopenia following a fall. At the time, he had a platelet count of approximately 15,000 cells/ μ L and was put on corticosteroid treatment. His hospital report showed an increase in the platelet count to 32,000 cells/ μ L at the time of discharge.

At the current admission, he presented with a fever of 4 days duration along with generalized fatigue and cough of 1 day duration. He had also shown a history of presence of cutaneous bleeding manifestations including petechiae and ecchymosis. Clinical findings revealed presence of petechiae/ecchymoses in areas such as lower limb, knee, elbow and ear along with the oral mucosa. There was no significant history of neurological features or other bleeding manifestations.

The child was alert and active and continued to be stable throughout his hospitalization period. The vital parameters of the child were acceptable, having heart rate at about 93 beats/min, respiratory rate 26/min, SpO₂ 99% on room air and blood pressure 101/55 mmHg. Examination of cardiovascular, respiratory, abdominal, and nervous systems were non-revealing without any signs of meningitis.

Repeated platelet estimation revealed presence of thrombocytopenia initially. Platelets were 30,000 cells/ μ L on 3rd July 2026, raised to 45,000 cells/ μ L on 4th July and further to 95,000 cells/ μ L on 6th July. On 7th July 2026, the platelets were improved to about 1.25 lakh cells/ μ L, demonstrating definite rise. There was evidence of thrombocytopenia on peripheral smear examination. No abnormal cells could be detected on reported smear examination.

The previous hospitalization from October 2024 is pertinent in this case as well. At that time, the child was injured as a result of a fall during play and suffered a fracture of the left scapula. Tests were conducted and it became clear that the patient suffered from severe thrombocytopenia, with a platelet count of 15,000 cells/ μ L.

CT showed concerns for hemopericardium, but further evaluation and echocardiography confirmed that there was no significant pericardial effusion, thus conservative treatment was suggested. Because of decreasing platelet count hematology was consulted and oral corticosteroids were prescribed, at the dose of 2 mg/kg/day. The trend in platelets count started to increase and the patient was discharged in a good state.

In the current admission, the trend in the platelet count kept on rising, along with clinical stabilization of the child. With the consideration that there were no signs of bleeding and the child's clinical condition was stable, the treating team decided to adopt a watch and wait approach. The child was treated symptomatically and supported in order to manage his respiratory problems and fever using SYP. CALPOL (Paracetamol) 7ml P/O SOS, SYP. LEVOLON (Levosalbutamol) 5ml P/O TDS, TAB. JUNIOR LANZOL (Lansoprazole) 30mg P/O OD, NEB. LEVOLIN + BUDECORT (Levosalbutamol + Budesonide) 0.63mg + 0.5mg P/N Q6H, SYP. ASCORIL LS (Ambroxol hydrochloride + Guaifenesin + Levosalbutamol sulphate) 5ml P/O TDS and SYP. ALLEGRA (FEXOFENADINE HYDROCHLORIDE) 5ml P/O BD. While in hospital, he maintained a stable clinical condition with no signs of further bleeding. The platelet count rise spontaneously without the use of corticosteroids and IVIG.

The child was afebrile, clinically stable, with adequate oral intake and no further signs of bleeding upon discharge from hospital. With the improvement of platelet count and good clinical status, the child was therefore discharged under instruction for hematology review and platelet monitoring. This case shows that assessment of the general bleeding status and clinical status rather than just the platelet count is crucial in the management of chronic ITP in children.

DISCUSSION

The current case study discusses short-term conservative treatment of chronic immune thrombocytopenia (ITP) in an 8-year-old patient. At admission, the child had a platelet count of 30,000/ μ L with symptoms of only petechiae and ecchymoses. There were no signs of any mucosal, visceral, or intracranial bleeding, and the child was hemodynamically stable during the entire time of his stay at the hospital. Without the use of corticosteroids and IVIG, there was a steady rise in platelets count from 30,000/ μ L up to 45,000/ μ L, then 95,000/ μ L, and finally 125,000/ μ L. Thus, it can be concluded that in some selected patients who have normal clinical state, it is possible to observe the child without any medication even with low platelet count.

The approach to the management of ITP as described by Provan et al. was that it is a clinical decision-making process, where such aspects as bleeding symptoms, ITP features, platelet counts, and individual patient characteristics should be assessed collectively ^[2]. Following the advice of these authors, observation was chosen as the strategy in the absence of severe bleeding in patients who do not require immediate treatment. In this particular case, the child presented with cutaneous ITP without developing any significant bleeding during his stay in the hospital. The favorable platelet trend also supported the choice of the observation strategy as opposed to starting treatment immediately.

According to Neunert et al., observation should be preferred to routine treatment just to increase the platelet counts in pediatric patients with absent or minimal bleeding ^[11]. Even though the guideline was developed regarding the newly diagnosed ITP, the principle of clinical decision making is applicable to this particular patient since the treatment decision was made based on the patient's bleeding condition at the moment and his stability. The later review of this recommendation also emphasizes the necessity of individualized assessment while choosing treatment options for ITP patients ^[12].

The systematic evaluation of bleeding symptoms became the focus of attention of Rodeghiero et al., who stressed its significance in assessing the severity of ITP ^[17]. In the present case, petechiae and ecchymosis were noted, however, they were not associated with any severe mucosal or internal bleeding. Such a situation had its practical implications, since a presence of thrombocytopenia does not imply that the patient requires

immediate therapy. Neunert et al. stated that severe hemorrhagic complications were rarely observed in children with ITP, although such cases should be considered in the course of surveillance ^[16].

According to Beck et al., the corticosteroids and IVIG treatments were compared for children with acute ITP and found out that both methods can be employed in order to ensure the increase in platelet counts ^[13]. Typically, the corticosteroids are administered for modification of the underlying mechanism of platelets' destruction caused by the autoimmune response, whereas the IVIG may be especially effective if a rather quick reaction on platelets is needed ^[11,12,13]. However, the present clinical situation is quite different in this respect as there are no symptoms of severe bleeding and urgency regarding raising platelets. Since the platelet count was already showing some signs of spontaneous improvement, no corticosteroids or IVIG was applied in order to prevent any possible complications from their use.

In this regard, the previous incident from October 2024 offers even more information about personalized treatment. In the previous incident, the child had a platelet count of about 15,000/ μ L after being injured and was on corticosteroids. However, in the current incident, thrombocytopenia with a platelet count of 30,000/ μ L was detected but no hemorrhaging took place and platelet count increased on its own. Cines et al. noted that ITP was a heterogeneous clinical syndrome that could have significantly different manifestations and treatment needs ^[7]. Thus, the difference in the clinical course of ITP in this child indicates that the concept of heterogeneousness is valid and needs to be accounted for.

As emphasized by Cooper and Ghanima, the primary purpose of ITP treatment was preventing clinically significant bleeding while avoiding unnecessary drug toxicity ^[6]. Similarly, according to international guidelines, the main aim of treatment was maintaining proper platelet levels to provide hemostatic protection and not normalization of platelet count in all cases ^[1,2]. In this particular case, platelet count increased up to 125,000/ μ L on 7th July without any pharmacological treatment of ITP, whereas the child was clinically stable.

Treatment escalation is an important aspect in the management of chronic ITP where disease control cannot be accomplished through observation or first-line treatment. Grace and Neunert reviewed some of the second-line options that could be used in the management of persistent and chronic ITP patients, including thrombopoietin-receptor agonists and rituximab; however, splenectomy could be considered under certain conditions ^[14]. Furthermore, Neunert reviewed the significance of personalized treatment and avoided unnecessary interventions in patients with ITP who are eligible for being observed ^[15]. Second-line treatment was not needed in the current patient as he did not experience any clinical bleeding, and his platelet count recovered on its own.

Repeated lab and clinical evaluations played a crucial role in the treatment strategy of this case. Over the days of hospital stay, there was a gradual rise in platelet count from 30,000/ μ L on 3 July to 125,000/ μ L on 7 July with no evidence of any new bleeding complications. This helped the treating team to assess their response over time instead of making decisions based on a single count of the platelets. This is important when managing chronic ITP patients because of variations in platelet counts and clinical manifestations ^[1,2].

This case also underscores the significance of pharmaceutical care in the management of pediatric ITP. The choice of the therapy should take into consideration the anticipated rise in platelet counts, as well as the indication for therapy, adverse effects, therapy burden, and the overall clinical status of the patient. For the patient that is already stable and improving without any particular therapy, there might be no need to expose the patient to corticosteroids or IVIG. It is essential for the pharmacist to be actively involved in such areas as medication review, identification of adverse drug reactions, assessment of response to therapy, caregiver education on the risk of bleeding, and follow-up.

Another crucial point to consider is the unpredictable course of ITP patients over time. The number of platelets can vary throughout the duration of the illness, and sometimes clinical findings do not correlate with the severity of the disease ^[6-9]. In the current case, an appreciable increase in platelets occurred spontaneously

during a brief period of hospitalization in spite of having chronic disease. Thus, individualized evaluation of each patient during each visit is warranted, and past medication needs should not guide future treatment choices.

The main limitation of the presented case is the short period of follow-up after the present hospitalization. Even though the improvement of platelet count from 30,000/ μ L to 125,000/ μ L was observed, such a transient response does not prove the development of a sustained remission of the chronic ITP. Further hematological follow-up is needed to find out whether the platelet count remained stable and if there are any recurrence or bleeding events. In addition, this report describes a case of a single patient and therefore the described response cannot be applied to all children with chronic ITP.

All in all, the presented case study demonstrates that conservative approach can be used in pediatric patients with chronic ITP, who have mild symptoms of bleeding, are clinically stable and have an improving platelet tendency. The course of disease in the given patient is similar to evidence obtained from other cases, which prove the possibility of personalized therapy depending on the severity of bleeding and clinical condition, not on the platelet count.

CONCLUSION

Treatment of chronic immune thrombocytopenia in children needs a balance between protection against bleeding and the avoidance of unnecessary therapy. For this particular patient, despite having thrombocytopenia and minor skin bleeding, the child maintained clinical stability, as the platelet count steadily improved from 30,000/ μ L to 125,000/ μ L without corticosteroids or IVIG. This indicates that the consideration of bleeding risk, clinical status, and platelet trend should also be done in addition to the platelet count for decision-making regarding the patient's treatment regimen. This case also illustrates the significance of monitoring the patient, using medications rationally, and education of the parents in the management of chronic ITP. Even if the result is positive for the short term, long-term hematological follow-up is needed.

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