

A previously healthy 6-year-old boy is brought to the office after the sudden appearance of "pinpoint" bruises throughout his body. He has had no bleeding or recent trauma. Three weeks ago, he had an upper respiratory tract infection that resolved uneventfully. He takes no medications, has no allergies, and his immunizations are up to date. Family history is negative for bleeding or clotting disorders. Vital signs are normal. Physical examination shows a cooperative, well-appearing child with scattered petechiae over the trunk and extremities. The rest of the examination is unremarkable. Laboratory results are as follows:

Hemoglobin	13.5g/dL
Platelets	40,000/ $\mu$ L
Leukocytes	7,000/ $\mu$ L

Peripheral smear shows a few large platelets. What is the most appropriate next step in management of this patient?

- ☐ A. Bone marrow biopsy
- ☐ B. Intravenous antibiotics
- ☐ C. Intravenous immunoglobulin
- ☐ D. Observation
- ☐ E. Platelet transfusion
- ☐ F. Splenectomy

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- ☐ A. Bone marrow biopsy [9%]
- ☐ B. Intravenous antibiotics [1%]
- ☐ C. Intravenous immunoglobulin [33%]
- ☒ D. Observation [46%]
- ☐ E. Platelet transfusion [9%]
- ☐ F. Splenectomy [2%]

Proceed to Next Item

Explanation:

User Id: [redacted]

Immune thrombocytopenia	
Clinical presentation	<ul style="list-style-type: none"><li>Antecedent viral infection</li><li>Asymptomatic petechiae &amp; ecchymosis most common</li><li>Mucocutaneous bleeding (eg, epistaxis, hematuria, gastrointestinal bleeding)</li></ul>



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Laboratory findings	<ul style="list-style-type: none"> <li>Isolated thrombocytopenia <math>&lt;100,000/\mu\text{L}</math></li> <li>Peripheral smear with megakaryocytes and no other abnormalities</li> </ul>	
Treatment	Children	<ul style="list-style-type: none"> <li>Skin manifestations only: Observe</li> <li>Bleeding               <ul style="list-style-type: none"> <li>IVIg</li> <li>OR</li> <li>Glucocorticoids</li> </ul> </li> </ul>
	Adults	<ul style="list-style-type: none"> <li>Platelets <math>\geq 30,000/\mu\text{L}</math> without bleeding: Observe</li> <li>Platelets <math>&lt;30,000/\mu\text{L}</math> OR bleeding:               <ul style="list-style-type: none"> <li>IVIg</li> <li>OR</li> <li>Glucocorticoids</li> </ul> </li> </ul>

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Immune thrombocytopenia (ITP) is characterized by an abnormally low platelet count ( $<100,000/\mu\text{L}$ ), resulting in increased propensity for bruising and bleeding. The disorder can affect people of any age but is most common at **age 2-5 years**. The pathogenesis involves antibodies that bind to platelets and subsequent destruction of these antibody-platelet complexes in the spleen. The condition is usually preceded by a viral infection and presents with **purpura** and **petechiae**. In severe cases, patients may experience mucosal bleeding. Laboratory studies show isolated thrombocytopenia and megakaryocytes on peripheral smear.

The approach to treatment is different in children compared to adults. In children, the course is usually self-limited with **spontaneous recovery** within 6 months.

**Observation** without treatment is recommended for children who experience only cutaneous symptoms, regardless of platelet count. **Intravenous immunoglobulin (IVIg)**



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**Observation** without treatment is recommended for children who experience only cutaneous symptoms, regardless of platelet count. **Intravenous immunoglobulin (IVIg)** (**Choice C**) or **glucocorticoids** are the first-line drugs in patients who experience bleeding. Adults with ITP and platelet count  $<30,000/\mu\text{L}$  should receive glucocorticoids or intravenous immunoglobulin as they are less likely to experience spontaneous recovery.

(**Choice A**) Bone marrow biopsy is not required in well-appearing children with isolated thrombocytopenia and no other symptoms (eg, fever of unknown origin, leukopenia, anemia, unexplained weight loss, fatigue).

(**Choice B**) Antibiotics are not indicated in immune thrombocytopenia as the condition is not related to a bacterial infection.

(**Choice E**) Platelet transfusion is very rarely indicated as it generally results in **further platelet destruction**. It can be considered in severe cases with active or intracranial bleeding.

(**Choice F**) The spleen is the site of platelet destruction and splenectomy can increase the life span and quantity of platelets. Splenectomy is a last resort for catastrophic bleeding or chronic ITP that is refractory to IVIG and glucocorticoids.

#### Educational objective:

Immune thrombocytopenia should be suspected in children who develop isolated thrombocytopenia and petechiae after a viral infection. Children usually recover spontaneously within 6 months and require only observation, regardless of platelet count. Children with bleeding should receive intravenous immunoglobulin or glucocorticoids.

#### References:

1. [The American Society of Hematology 2011 evidence-based practice](#)



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