Immune Thrombocytopenia (ITP)

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1. Definition

Immune Thrombocytopenia (ITP) is an acquired autoimmune disorder characterized by:

- **Isolated thrombocytopenia**
  - Platelet count **<100,000/µL**
- Normal hemoglobin and white blood cell count (unless affected by bleeding or another disease)
- No other identifiable cause of thrombocytopenia

Most children develop ITP **1–4 weeks after a viral infection** and recover spontaneously.

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2. Clinical Presentation

Typical History

Ask About	Why It Matters
Recent viral illness (1–4 weeks)	Common trigger
Sudden bruising	Typical presentation
Petechiae or purpura	Most common finding
Mucosal bleeding (epistaxis, gum bleeding)	Indicates more significant bleeding
Hematuria or GI bleeding	Severe disease
Headache, vomiting, neurological symptoms	Possible intracranial hemorrhage (emergency)
Medications	Drug-induced thrombocytopenia
Family history	Consider inherited thrombocytopenia
Constitutional symptoms (fever, weight loss, bone pain)	Suggest leukemia or other serious disease

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Physical Examination

Typical Findings

✓ Petechiae

✓ Purpura

✓ Ecchymosis

✓ Mild mucosal bleeding

Patient usually **appears well**

Red Flag Findings (NOT Typical for ITP)

❌ Fever

❌ Weight loss

❌ Bone tenderness

❌ Hepatosplenomegaly

❌ Significant lymphadenopathy

❌ Pallor unrelated to bleeding

❌ Multiple cytopenias

These findings should prompt evaluation for **other causes (especially leukemia).**

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3. Diagnostic Approach

Step 1

Confirm isolated thrombocytopenia

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CBC

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Platelets low (<100,000)

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Hb and WBC normal

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Peripheral smear confirms thrombocytopenia

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No atypical cells

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Typical history and examination

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Diagnosis of ITP is likely

Step 2

Look for Red Flags

If any are present:

- Fever
- Hepatosplenomegaly

- Lymphadenopathy
- Bone pain
- Abnormal CBC
- Blast cells

→ **Investigate for leukemia, aplastic anemia, infection, autoimmune disease, etc.**

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4. Differential Diagnosis

Diagnosis	Distinguishing Features
Acute leukemia	Bone pain, fever, blasts, anemia, neutropenia
Aplastic anemia	Pancytopenia
HUS	Hemolysis + AKI + thrombocytopenia
DIC	Sick child, abnormal PT/PTT, low fibrinogen
TTP (rare in children)	Neurologic symptoms + hemolysis
Drug-induced thrombocytopenia	Medication history
SLE	Multisystem disease
Viral infections (EBV, HIV, hepatitis)	Compatible history/laboratory findings
Inherited thrombocytopenia	Long-standing history, family history

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5. Investigations

Essential Tests

Investigation	Purpose
CBC	Confirm isolated thrombocytopenia
Peripheral blood smear	Exclude blasts, platelet clumping
History & examination	Most important diagnostic tools

Usually NOT Needed

Routine bone marrow aspiration

Routine ANA

Routine viral serology

Platelet antibody testing

Coagulation profile (unless another diagnosis suspected)

Bone Marrow Examination

Only if:

- Atypical clinical findings
- Abnormal CBC
- Suspected leukemia
- Before steroids **only when diagnosis is uncertain** (institution-dependent)

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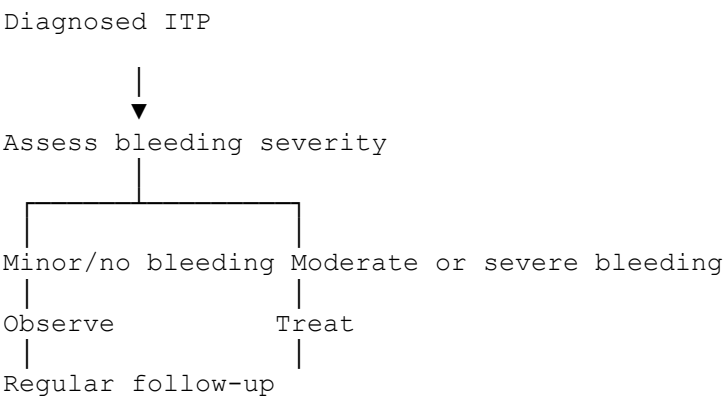
6. Management Algorithm



Observation (Preferred)

Appropriate when:

- Skin findings only
- No significant mucosal bleeding
- Child clinically well
- Reliable follow-up available

Remember:
Treatment is based on **bleeding severity**, **not platelet count alone**.

Treat If

- Significant mucosal bleeding
- Persistent epistaxis
- GI bleeding
- Menorrhagia
- Reduced quality of life due to bleeding
- Preparation for surgery/procedure
- Intracranial hemorrhage (emergency)

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7. Drug Summary Table

Drug	Usual Dose	Main Role
Prednisolone	2–4 mg/kg/day (short course, max 120 mg/day)*	First-line
Dexamethasone	0.6 mg/kg/day (max 40 mg/day) for 4 days*	Alternative first-line
IVIG	0.8–1 g/kg once (or 1 g/kg/day for 1–2 days)*	Rapid platelet rise
Anti-D immunoglobulin	Selected Rh-positive, non-splenectomized patients (where available)	Alternative
Platelet transfusion	Only life-threatening bleeding (with IVIG + steroids)	Emergency

*Institutional protocols may vary slightly.

Life-Threatening Bleeding

Immediately:

- Hospital admission
- IVIG
- High-dose corticosteroids
- Platelet transfusion
- Urgent hematology consultation
- Neuroimaging if intracranial hemorrhage suspected

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8. Admission Criteria

Admit if:

- Significant mucosal bleeding
- GI bleeding
- Hematuria with significant bleeding
- Suspected intracranial hemorrhage
- Severe anemia from bleeding
- Diagnostic uncertainty
- Social concerns preventing safe outpatient follow-up

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9. Referral Criteria

Refer to Pediatric Hematology when:

- Diagnosis uncertain
- Persistent thrombocytopenia (>3 months)
- Chronic ITP
- Recurrent bleeding
- Failure of first-line treatment
- Suspected secondary ITP
- Need for second-line therapy

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10. Follow-up

Monitor:

- Bleeding symptoms
- Platelet count
- Medication adverse effects (if treated)

Advise families to seek urgent care for:

- Severe headache
- Persistent vomiting
- Altered consciousness
- Major trauma
- Heavy bleeding
- Melena or hematemesis

Avoid:

- Contact sports until platelet count is considered safe
- Aspirin
- NSAIDs (unless specifically indicated and approved)

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11. Clinical Pearls

✅ Most children recover spontaneously.

✅ Most do **not** require treatment.

✅ Bleeding severity is more important than platelet count.

✅ Intracranial hemorrhage is **rare (<1%)** but life-threatening.

✅ Normal examination except bruising strongly supports ITP.

✅ Hepatosplenomegaly is **not typical** of ITP.

✅ Always review the peripheral smear before confirming ITP.

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12. Common Mistakes in Exams and Practice

❌ Treating every low platelet count.

✓ Treat the **patient**, not the number.

❌ Missing leukemia because bruising resembles ITP.

✓ Look for fever, bone pain, lymphadenopathy, hepatosplenomegaly, anemia, or abnormal white cell count.

❌ Ordering extensive autoimmune and viral investigations routinely.

✓ Most children need only CBC, smear, history, and examination.

❌ Forgetting medication history.

✓ Drugs can cause thrombocytopenia.

❌ Prescribing aspirin or NSAIDs.

✓ They increase bleeding risk.

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13. Key Take-Home Messages

1. ITP is the **most common cause of isolated thrombocytopenia in children**.
2. Diagnosis is **clinical**, supported by CBC and peripheral blood smear.
3. Always exclude leukemia and other serious causes if red flags are present.
4. **Observation** is the preferred management for most children with mild or no bleeding.
5. Treatment decisions are based on **bleeding severity**, not platelet count alone.
6. IVIG and corticosteroids are first-line therapies for clinically significant bleeding.
7. Intracranial hemorrhage is rare but requires immediate recognition and treatment.
8. Bone marrow examination is **not routinely required** in typical ITP.
9. Avoid aspirin and unnecessary trauma while thrombocytopenia persists.
10. Most pediatric patients recover completely within weeks to months.

High-Yield Examination Box

Think ITP when you see:

- Recent viral infection
- Well-appearing child
- Petechiae and bruising
- Isolated thrombocytopenia
- Normal Hb and WBC
- Normal spleen
- Normal peripheral smear except reduced platelets

Think NOT ITP when you see:

- Fever

- Bone pain
- Hepatosplenomegaly
- Lymphadenopathy
- Pancytopenia
- Blast cells
- Ill appearance