

**Aim:** To standardize evaluation and management of acute ITP

**INCLUSION CRITERIA:**

- Age:** 1 to <21 y/o
- Thrombocytopenia:** Platelets less than 30,000 k/uL
- Duration:** Less than 4 weeks

**EXCLUSION CRITERIA:**

**Can consult Heme/Onc but OFF pathway) :**

- Atypical ITP
- <1 year or ≥ 21 years
- Multiple cell lines down such as neutropenia, anemia with reticulocytopenia
- LAD, HSM, or increased uric acid
- Presence of blasts on differential
- Smear inconsistent with ITP
- Thrombocytopenia onset longer than 4 weeks
- Thrombocytopenia above 30,000 k/uL
- Thrombocytopenia from other cause such as antiepileptic meds, hereditary conditions, infections, or known oncological patients.

**Patient with new thrombocytopenia: History, P/E, Consult Hematology\***

Send labs: CBC with differential, Smear, Reticulocyte count, LDH/Uric acid, DAT, Immunoglobulins, TSH

Call Hematology after labs to confirm diagnosis: Likely ITP?

No

\*Hematologists on call to consider seeing the patient in the ED in person when able, to establish care (depending on timing of consult, location of patient, etc). If this is not possible, pursue E-consult.

Atypical features, consider alternate diagnosis. Off guideline.

Yes

Assess bleeding symptoms and grade: (Note 1)

Grade ≤ 2

\*Grade 3

Grade 4

Grade 5

If Grade 3, assess if low or high risk? (Note 1)  
Surgery or not?

Low risk, no surgery

Observation (Note 2)

Provide discharge instructions. Follow-up within 3-5 days (Note 3)

**High risk or surgery:**

- Treat with Prednisone 2-4 mg/kg/day (typically cap at 40mg BID) daily for 5 days (Note 4)
- If there is upcoming surgery OR there is need for rapid increase in platelets OR steroids are not preferred, consider IVIG (Note 5)
- Consider admission:
  - If Hb is less than 7 or less than 2 gm/dl from baseline.
  - If social barriers present (Note 2)
  - Consult ENT for persistent epistaxis
  - Consult GYN for menorrhagia (refer to menorrhagia guideline)
  - If inadequate response to steroids/IVIG, consider TPO-RAs (Note 6)
- Provide discharge instructions. Follow-up in 3-5 days (Note 3)

**Admit to PICU:**

- Consult surgery, GI, ENT, NSG as needed.
- Consider methylprednisolone pulse dosing 30 mg/kg/dose (max 1000 mg) once daily for 1 to 3 doses (Note 4)
- Consider IVIG if rapid increase in platelets needed (Note 5)
- If poor response to steroids and/or IVIG, consider TPO-RAs (Note 6)

Off Guideline pathway. Treat for life threatening bleed symptomatically

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**Note 1: Modified Buchanan And Adix Bleeding Score At Time Of Visit:**

- Grade 0: None
- Grade 1: Minor: Few petechiae ( $\leq 100$ ) and/or  $\leq 5$  small bruises ( $\leq 3$  cm); no mucosal bleeding
- Grade 2: Mild: Many petechiae ( $> 100$ ) and/or  $> 5$  large bruises ( $> 3$  cm diameter); no mucosal bleeding
- \*Grade 3: Moderate: Overt mucosal bleeding (eg: epistaxis, gum bleeding, wet purpura, menorrhagia, GI bleeding) that does not require immediate medical attention or intervention.
  - **Low Risk Bleeding:**
    - Blood crusting in nares
    - Painless oral purpura
    - Oral/palatal petechiae
    - Buccal purpura alongside molars only
    - Mild epistaxis  $< 5$  minutes
  - **High Risk Bleeding:**
    - Epistaxis  $> 5$  minutes
    - Hematuria
    - Hematochezia, melena
    - Painful oral purpura
    - Menorrhagia
- Grade 4: Severe: mucosal bleeding or suspected internal hemorrhage (in the brain, lung, muscle, joint, etc) that requires immediate medical attention or intervention
- Grade 5: Life-threatening or Fatal: Documented intracranial hemorrhage or life-threatening or fatal hemorrhage at any site

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**Note 2: Outpatient Observation Management:**

- Outpatient management is preferred for mild clinical bleeding symptoms (**Grade 3 low risk or lower**) over inpatient unless there is:
  - Uncertainty of diagnosis or atypical features (concerns for TTP, Evan's, malignancy, etc)
  - High levels of parental anxiety, highly active toddler/child with high concern for falls (case by case)
  - Social determinants of health including difficulty with follow up, live far from hospital, insurance issues.
- In patients with newly diagnosed ITP and **no or minor bleeding (Grade 3 low risk or lower)**, 2019 ASH guideline panel **recommends** observation over treatment (corticosteroids and intravenous immunoglobulin/anti-D immunoglobulin)

**Note 3: Follow up plan:**

- Follow up with primary care provider (PCP) within 3-5 days if NO hematology clinic appointment available. Next available heme appointment must be requested at diagnosis.
- Follow up labs to be done by PCP within 3-5 days and tracking of these labs to be done by PCP IF not yet seen/established with Hematology.
- The PCP can call Hematology on call via physician access if they have questions.
- If patient does not have established PCP, heme to determine plan with ED case by case, may need follow up lab orders placed by ED.
- If discharged from ED on steroids, still must be seen by PCP or Hematology within 3-5 days
- **Discharge instructions:**
  - Patient is at an increased risk of bleeding secondary to thrombocytopenia/risk for recurrence of thrombocytopenia.
  - Recommend avoidance of anti-platelet medications (e.g. aspirin, ibuprofen, other nonsteroidal anti-inflammatory drugs) and anticoagulant medications to minimize compounding the bleeding risk. If medication is needed for pain, acetaminophen is recommended as a first-line agent.
  - Review activity restriction recommendations:
    - Avoid high-contact or high-risk activities like football, lacrosse, hockey, skiing, competitive gymnastics. Also avoid moderate risk activities like baseball, soccer, basketball, tumbling. Avoid riding scooter, trampolines and other high-risk for fall activities.
  - If patient requires dental surgery or procedure, the patient should be cleared from a hematology standpoint first.
  - Please follow up with PCP or Hematology in 3-5 days for labs and exam.
  - Call hematology for increased bleeding symptoms or other concerns.

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#### Note 4: Steroid recommendations

- In patients with newly diagnosed ITP who have **non-life-threatening mucosal bleeding (Grade 3 high risk) and/or diminished health-related quality of life due to bleeding**, the national guideline **suggests corticosteroids as first line of treatment**.
- Preferred corticosteroid is Prednisone 2-4 mg/kg/day for 5 Days (typically cap at 40mg BID - if going above this defer to hematology). Liquid formulation available is prednisolone
- Peripheral smear must be reviewed prior to starting steroids.
- When discharged from ED on oral steroids: Notify Hematology and must be seen by PCP or Hematology within 3-5 days
- Methylprednisolone - steroid of choice **in severe bleeding such as Grade 4 or 5 bleeding**: Initial: Pulse: 30 mg/kg/dose once daily for 1 to 3 doses; number of doses is determined by patient clinical status, initial and post dose platelet counts; maximum dose: 1,000 mg/dose; follow with oral corticosteroid therapy as clinically indicated.

#### Note 5: Second line of management in Acute ITP

- **Intravenous Immunoglobulin (IVIG)**
  - Consider using when there is high risk bleeding (Grade 3, high risk or upcoming surgery) AND steroids are contraindicated or not preferred.
  - Indicated when rapid increase in platelets desired in clinically severe bleeding (Grade 4 or 5) or upcoming invasive procedures. \*\*\*typical increase is seen in 24-48 hours post infusion\*\*\*
  - Dosing: 800 to 1,000 mg/kg IV as a single dose is preferred
    - Repeat dose may be administered the following day if an adequate platelet response is not achieved and risk of bleeding remains a concern
    - Alternate dosing: 400 mg/kg/dose once daily for 2 to 5 days
  - Consider costs, need for admission, IV access, side effects such as allergic reactions, headaches, and hemolytic anemia.
- **Anti-D immune globulin** (anti-D, WinRho, RhoGAM)
  - Less preferred alternative: Not the treatment of choice and is unavailable at Children's Minnesota.

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## Note 6: Therapies For Children with Refractory ITP: Inpatient

### 1. Thrombopoietin receptor agonist (TPO-RAs: Eltrombopag or Romiplostim)

- Consult Hematology when considering these treatment options.
- TPO-RAs can be used as rescue in patients with severe bleeding (Grade 4 or 5) and/or with poor clinical response to steroids/IVIG.
- **Defer to Hematology for dosing as the dose used in Grade 4 or 5 bleed is typically high/max dose of TRAs.**
- Rituximab is reserved when there is failure of response with TPO-Ras.
- **Of note: there is recent literature supporting use of TPO-RAs more upfront in management of acute ITP but as of now the national guidelines still recommend steroids/IVIG first.**

#### Eltrombopag

- Once-daily oral medication
- Certain dietary restrictions (calcium or dairy products), metabolized in the liver, hepatic function needs close monitoring.
- Children 1 to <6 years: Initial: Oral: 25 mg once daily
- Children ≥6 years and Adolescents: Initial: Oral: 50 mg once daily
- Children ≥6 years and Adolescents of East/Southeast Asian ancestry reduce initial dose to 25 mg once daily.
- Maximum daily dose: 75 mg/day

#### Romiplostim

- Weekly subcutaneous injections
- Dosing: 1-10 mcg/kg once weekly; (Please consult heme pharmacist for initial dosing)

### 2. Rituximab

Children and Adolescents: IV infusion: 375 mg/m<sup>2</sup> once weekly for 4 doses

### 3. Splenectomy

Last resort in chronic refractory ITP impairing QoL significantly or in acute ITP with serious life-threatening bleeding

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