CancerCare Manitoba
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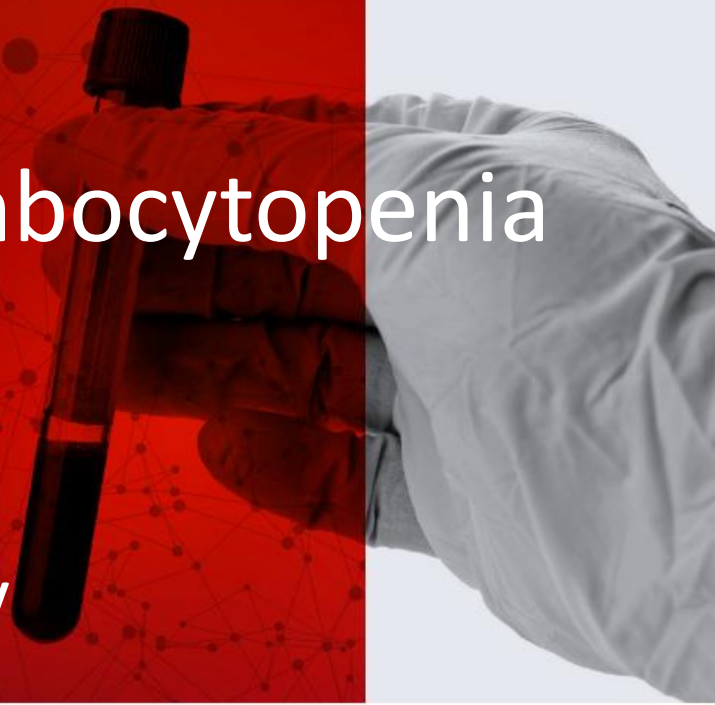
Blood Disorders Day 2018

FOR Health Professionals

Plunging Platelets: Thrombocytopenia in the Pediatric Patient



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COMMUNITY ONCOLOGY PROGRAM

Presenter Disclosure

- **Faculty / Speaker's name:** Dr. J. Stoffman

- **Relationships with commercial interests:**
  - **Grants/Research Support:** Daiichi Sankyo, Hoffman-La Roche
  - **Speakers Bureau/Honoraria:** None
  - **Consulting Fees:** Bayer Inc., Hoffman-La Roche Ltd.
  - **Other:** None

Learning Objectives

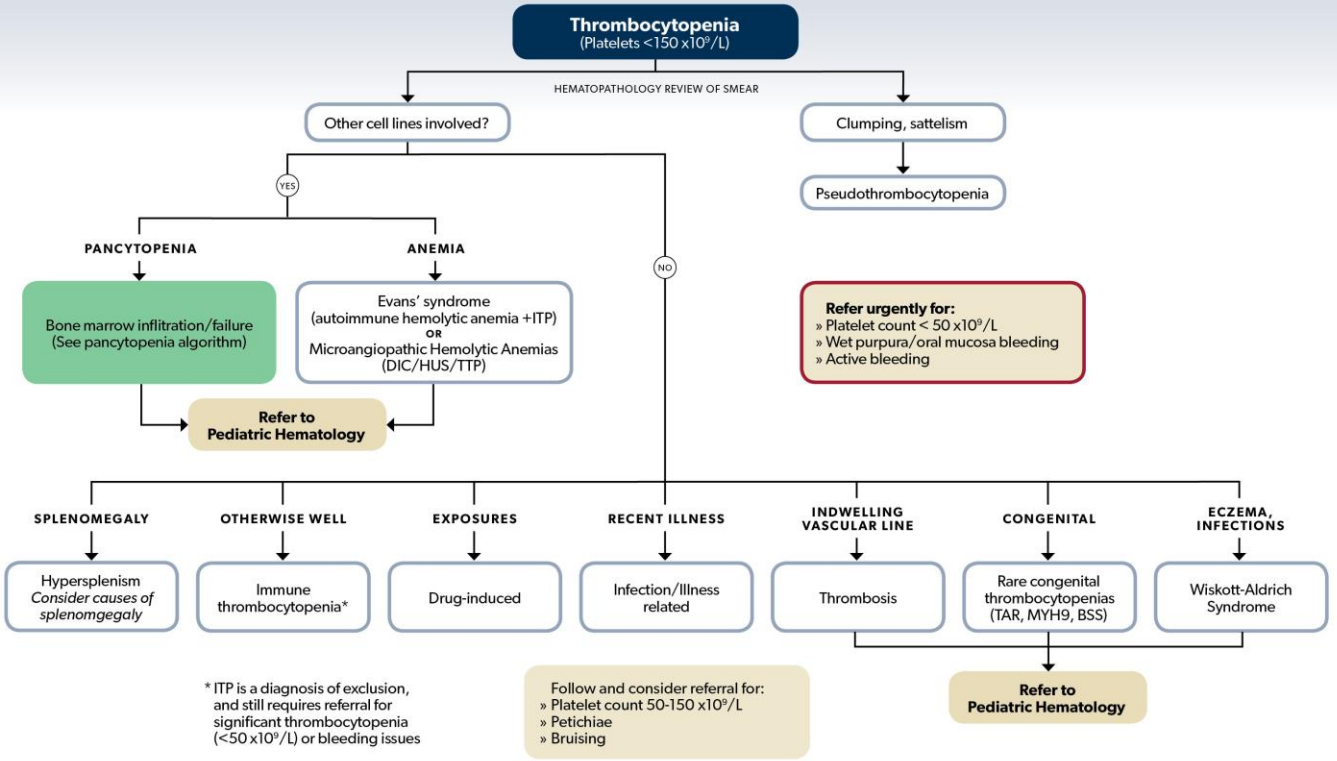
By the end of this presentation, the participant should be able to:

1. Explain common causes of thrombocytopenia in children
2. Describe the presentation, clinical course, and treatment options for ITP in children

Thrombocytopenia in pediatrics

- Pseudothrombocytopenia
- Impaired production:
  - Marrow infiltration or failure
  - Congenital disorders: TAR, BSS, MYH9-related, WAS
- Increased consumption:
  - Hypersplenism
  - Infection/illness
  - Drug-induced
  - Thrombosis
  - Autoimmune condition – Evans syndrome, SLE, others…
  - Microangiopathic hemolytic anemias – DIC, HUS, TTP
- Immune thrombocytopenic purpura

Pediatric Thrombocytopenia



Pathways are subject to clinical judgement and actual practice patterns may not always follow the proposed steps in this pathway.

Legend: **DIC** = Disseminated intravascular coagulation
HUS = Hemolytic uremic syndrome
TTP = Thrombotic thrombocytopenic purpura
TAR = Thrombocytopenia with absent radii
MYH9 = Myosin heavy chain 9-related thrombocytopenia
BSS = Bernard-Soulier syndrome

This algorithm is intended for general guidance only, and should be used with appropriate clinical judgement.

Immune Thrombocytopenia Purpura

- Uncommon – incidence of 3-8 to 7.2-9.5/100 000
- A diagnosis of *EXCLUSION*
- Sudden onset of purpura and petechiae in an otherwise *normal* child with an otherwise *normal* physical examination
- *Isolated* thrombocytopenia on the CBC
  - Smear usually shows few large platelets with no other abnormalities

ITP – A tale of two conditions

SL – DOB April 2010

- 1 month history of increased bruising
- 1 nosebleed lasting 30 min
- Platelet count 2
- 3 weeks later – Plt count 3

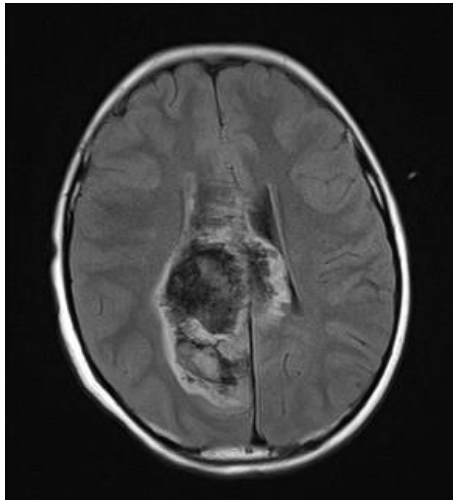
LM – DOB April 2012

- Large bruise after minor injury
- Mild viral URTI 3 weeks before
- Platelet count 3
- 3 weeks later – Plt count 37
- 18 months later – Plt count 118

The worst case scenario

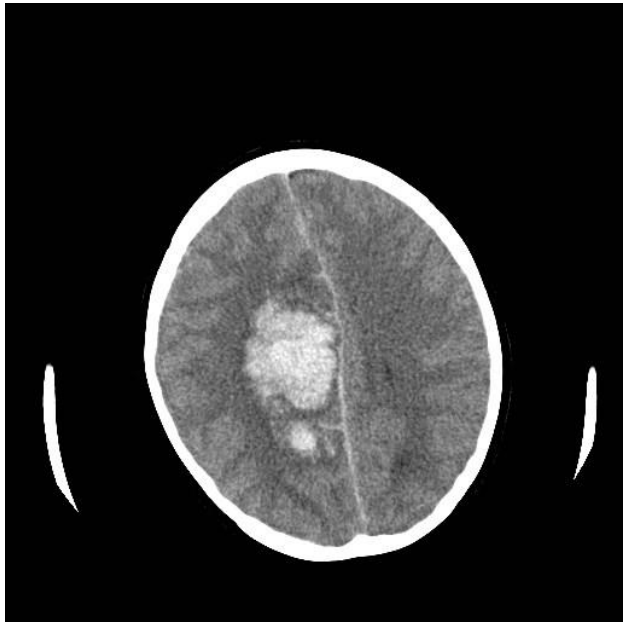
AH – DOB May 2008

- 1 week history of purpura
- 1 day history of mucosal bleeding and altered LOC
- Platelet count 4



Intracranial hemorrhage

- 0.4-0.6% of all ITP
- UK experience: 14 cases of ICH over 20 years
- World literature 1970-99: 54 reported ICH



What counts count?

- Normal platelet count: 150 – 450 X 10e9/L
- Thrombocytopenia: Plt < 100
- < 50 – Increased risk of bleeding with trauma/surgery
- < 20 – Petichiae and spontaneous bruising
- < 10 – Increased risk of severe hemorrhage

Mechanism of thrombocytopenia in ITP is *different*

Important definitions (IWG)

- Remission: Plt count > 100

- Acute: < 3 months
- Persistent: 3-12 months
- Chronic: >12 months

Treatment considerations

- 80% of children will have spontaneous remission
  - Predictors poorly understood: younger age, bleeding at Dx
- Burden of illness and treatment are important considerations
- Shared decision making between physician and parents
  - Value of HRQoL measures in choices under investigation

Treatment options

First line

- Observation
- Corticosteroids
- IvIg
- Anti-D

Second line

- Splenectomy
- TPO-RA
- Rituximab

Treatment choices

- Patient/parent (and physician) preference and comfort
- Treatment profile
  - Likelihood of remission
  - Side effects
  - Route of administration

Key messages

- Thrombocytopenia in children results from increased consumption or decreased production, due to a variety of causes.
- ITP in children is generally a benign and self-limited condition, and treatment should be directed at symptom management for improved quality of life.

Key references

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Thank you

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