Plunging Platelets: Thrombocytopenia in the Pediatric Patient
Dr. Jayson Stoffman
Pediatric Hematology/Oncology
Presenter Disclosure

• Faculty / Speaker’s name: Dr. J. Stoffman

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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
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


Thank you

jstoffman@cancercare.mb.ca