Guidelines for management of Idiopathic Thrombocytopenic Purpura (ITP) in Children

ITP is an autoimmune disorder characterised by
- Persistent thrombocytopenia (peripheral blood platelet count < 150x10^9/l)
- Auto antibodies binding to platelet antigens causing their premature destruction by reticuloendothelial system and in particular spleen (Woods et al 1984)

**Incidence:** childhood 4-5.3/100 000-(Lilleyman 1999, Zeller 2000)
- Majority do not require treatment, 80-85% resolve within 6 months (6-8 weeks)
- 15-20% develop chronic ITP-low platelet count > 6 months
- Chronic ITP incidence 0.46/100 000 children/year (Reid 1995) and prevalence 4.6/100 000 at any one time (Hedman et al 1997)

**Diagnosis:** is by exclusion:
- Detailed history,
- Examination and
- Blood test (FBC, blood film, coagulation screen, +/- Bone marrow aspiration)

**Acute ITP**
- History-is usually short-purpura for 24-48 hours period
- Preceding viral infection or immunisation
- Platelet count is usually < 10-20X10^9/l
- No hepatosplenomegaly
- Well child
- If altered consciousness or abnormal neurological signs - **consider intracranial haemorrhage (ICH)**

**Points to remember**
- ITP associated with varicella infection needs special precaution as occasional cases have more complex coagulation disorder.
- May be provoked by MMR immunisation, estimated risk 1:24 000 doses (Farrington 1995), within 6-8 weeks
- Committee on the Safety of Medicines recommends, if ITP develops within 6 weeks of the first dose, and serology suggests that child is not immune, then 2nd dose of the vaccine should be given
• Two U.K national surveys have demonstrated that only 4% of children have serious bleeding i.e. epistaxis/GI bleed (Bolton-Maggs 1997 and 2001)
• Intracranial bleed incidence 0.1-0.5 % (Lilleyman 1994)

Differential diagnosis

**young children**
- Platelet function disorders *

**older children**
- Evolving Fanconi’s anaemia
- Von Willebrand disease-IIb
- Aplastic anaemia
- Leukaemia
- HSP*

**Special consideration:** Meningococcaemia

**Others:** Autoimmune disorders

* Platelet count normal

**Investigations:**
- FBC and blood film-ensure normal Hb,White cell count and blood film. Ensure no clot in the sample
- Coagulation screen-more useful for NAI, Meningococcal infections, Von Willebrand
- Bone marrow aspiration-excludes other causes of thrombocytopenia and can only confirm that picture is consistent with ITP.
- In a child with typical clinical and laboratory features, who needs no treatment, a BM aspiration is not needed (Grade B recommendation)

**Management:**

Children should be not treated on basis of cutaneous signs alone, however dramatic and widespread the purpura may be.

80% acute ITP do not have significant bleeding symptoms and can be managed without any active treatment (Bolton-Maggs 1997, 2001, Sutter 2001)-evidence level III
• Most children can be managed at home and do not require hospital admission.
• Parents should be advised to
  • Watch for bleeding
  • Avoidance of contact sports
  • Avoidance of activities with high risk of trauma i.e. head injury
  • Continue other activities as normal
  
  (Evidence level II)
• A contact name and 24 hour telephone number should be given to the parents/carers.
• The full blood count should be repeated within a week of diagnosis to ensure there is no evolution to a serious marrow disorder

**Specific Treatment:**

All available therapies have significant side effects and none alters the underlying pathology nor increase the chance of remission. These strategies are appropriate for

• Severe bleeding
• If cover is needed for operations
• Dental extractions

**Steroids**: (Bone Marrow aspiration essential)

• Prednisolone 1-2 mg/kg/day. Steroids should be discontinued after maximum 14 days irrespective of platelet count
• High dose regime-4mg/kg/d X4 days. (Level 1b evidence)
• High dose v/s lows dose steroids no direct comparison trials.

**IV Immunoglobulin:**

• Effective in raising the platelet count in >80% children and does so more rapidly than steroids or no therapy.
• Expensive, reserved for emergency i.e. active bleeding.
• Also for elective –essential surgery or dental extraction.
• A pooled serum product-so risk needs to be explained to the parents.
• 0.4g/kgX 5 days*
• 0.8-1g/kg on D1 and 2-(Blanchette 1994, Tarantino 1999)

**Platelet transfusion:**

• For ICH
• Other life threatening bleeds along with immunomodulatory treatment.
Chronic ITP:

- Thrombocytopenia >6 months
- Management similar to acute ITP. Most children settle with adequate platelet count i.e. $10-20 \times 10^9/l$ and have no symptoms unless injured.
- In children <10 y, remission likely.
- Children with chronic ITP usually do not need treatment, but should have a regular follow up.
- Should be referred to haematologist for long-term management.

ITP support group  http://www.itpsupport.org.uk
**ITP** (Platelet count <150 ×10^9/L)

**Acute**
- Low platelets<6-8 weeks
  - No active bleed
  - Platelet count >20X10^9/L
    - No Rx
  - Platelet count 10-20 X10^9/L
    - Refer To Haematologist
      - IVIG/Splenectomy/Steroids

**Chronic**
- Thrombocytopenia>6 months
  - Repeated bruising
  - Platelet count 10-20 X10^9/L
    - Refer To Haematologist
      - IVIG/Splenectomy/Steroids
  - Platelet count >20X10^9/L
    - No Rx

**Investigation (to exclude other cause)**
- Clinical presentation
  - No active mucosal bleeds
  - Active mucosal bleeds-epistaxis/GI bleeds
  - ICH
    - Urgent CT scan
      - Platelet transfusion
      - IVIG/prednisolone
        (Grade C)
    - After D/W Seniors/Haematologist
      - IVIG 0.4 g/kg/day X5 days, or
      - 0.8g-/kg/day D1 and D2 *
    - Steroids-BM essential
      - Prednisolone 4mg/kg/dayX4days
        (Grade A recommendation)

**Investigations**
- FBC
- Peripheral smear
- Coagulation screen
- BM aspiration-if atypical features/treatment especially with steroids
Levels of recommendations:

- Grade A- At least one good quality RCT
- Grade B- well conducted clinical studies but no RCT
- Grade C- expert opinions, reports

Levels of evidence:

- Ia- metanalysis of RCT
- Ib- at least one RCT
- Ila- well designed controlled study
- IIb-well designed quasi –experimental study
- III-descriptive non experimental studies
- IV-expert committee reports or opinions

Reference:
