UNUSUAL PRESENTATION OF AN USUAL CAUSE OF THROMBOCYTOPENIA

SOUTHERN RAILWAY HQ HOSPITAL, PERAMBUR

DR. KUMARAN DNB PG
5 months old female infant hailing from Thoothukudi brought by her mother referred from outside for decreased platelet count

**HOPI**

An apparently normal child till 3 months of age then developed

**H/o Fever 10 days**

**H/o Black colored stools** on day 7 of illness 2 episodes

**H/o GTCS** on the same day - 1 episode baby hospitalised
On next day - **Progressive abdominal distension, respiratory distress, oliguria** treated with iv fluids

Symptoms improved with in 24 hrs
Investigations showed dengue NS1, IgM & IgG positive

**CBC** - thrombocytopenia (12000 cells/µl) with lymphocytic leucocytosis

LFT, RFT, S.Eletrolytes , UrineR/E , Stool R/E-WNL
PT , aPTT - WNL
Child had severe persistent thrombocytopenia (7000-15000 cells/µl) for more than 10 days

FURTHER INVESTIGATIONS.....

S. ferritin (721 ng/ml) & S. TGL-464 mg/dl
S. Fibrinogen (1.7 gm/L)
Bone marrow - reactive nomocellular. (23/01/13)
Hospitalised for 17 days
1 blood & 3 FFP transfusions
iv antibiotics, zinc, MV drops.

IVIG 5 days started on D 10
Child discharged with zinc & MV drops
Advice: review after 10 days

Review CBC – thrombocytopenia
Baby referred to our hospital
IN OUR HOSPITAL

• Baby received in our hospital on 12-02-13

• No H/o vomiting / loose stools/jaundice
• No H/o poor feeding/lethargy/ poor wt gain
• No H/o other bleeding manifestations
• No H/o incessant cry/dysuria/ear discharge.
• No significant past H/o.
• Antenatal, Natal & Post natal H/o: uneventful
• Diet H/o: till now on exclusive breast feeds
• Normal Developmental milestones.
• Immunized up to the age.
• **Family H/o**

No H/o similar complaints in the family

• **Socio economic H/o:** Lower middle class.

• **Contact H/o:** No contact with TB
GENERAL EXAMINATION:
Child awake, alert, playful.
No pallor, icterus, cyanosis, lymphadenopathy.
No petechiae, purpura, rash, SCH.

Vitals: Stable
Anthropometry: WNL

SYSTEMIC EXAMINATION: WNL
B/L fundus- Normal study
IMP: Persistent thrombocytopenia

Post viral (Dengue) persistent thrombocytopenia
To R/O

• Autoimmune thrombocytopenia

• Malignancy

• HIV

• congenital thrombocytopenic syndromes

• Hemophagocytosis
INVESTIGATIONS

(12/02/13)

• Dengue IgG, IgM – Positive
• PS for Mp/Mf- Negative
• CBC: Hb-10.9 g/dl;
  Hct-32%;
  RBCs-4.1M/µl
  TC-14190 cells/µl
  DC- P11 M05 L84%
  Platelets- 26400 cells/µl
• Serum TGL – 320 mg/dl (N: 40 to 165)
LFT, RFT, S.Eletrolytes , UrineR/E , Stool R/E-WNL
PT , aPTT - WNL
DCT- negative
USG Abdomen- normal study
• **PERIPHERAL SMEAR (13/02/13)**

RBC’s - normochromic normocytes; normal in count.

WBC’s - normal in count; no immature & blast cells.

Platelets - Decreased in number.  
*(Thrombocytopenia)*
• HIV screening negative for both parents
<table>
<thead>
<tr>
<th>CBC</th>
<th>12/02</th>
<th>13/02</th>
<th>14/02</th>
<th>02/03</th>
<th>08/03</th>
<th>18/03</th>
<th>25/03</th>
<th>02/04</th>
<th>09/04</th>
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<tbody>
<tr>
<td>Hb (g/dl)</td>
<td>10.9</td>
<td>10.4</td>
<td>9.2</td>
<td>9.6</td>
<td>10.1</td>
<td>10.6</td>
<td>10.9</td>
<td>10.8</td>
<td>11.1</td>
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<tr>
<td>Hct (%)</td>
<td>32</td>
<td>29</td>
<td>27</td>
<td>29.2</td>
<td>31.8</td>
<td>33</td>
<td>35</td>
<td>34</td>
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<tr>
<td>RBC (M/µl)</td>
<td>4.1</td>
<td>-</td>
<td>-</td>
<td>3.3</td>
<td>3.5</td>
<td>3.6</td>
<td>-</td>
<td>3.75</td>
<td>-</td>
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<tr>
<td>TC (cells/µl)</td>
<td>14190</td>
<td>9000</td>
<td>10400</td>
<td>7900</td>
<td>11400</td>
<td>18010</td>
<td>13400</td>
<td>9700</td>
<td>11500</td>
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<tr>
<td>DC (P/M/L)</td>
<td>11/05/84</td>
<td>06/07/87</td>
<td>07/03/90</td>
<td>10/05/85</td>
<td>26/01/73</td>
<td>07/03/90</td>
<td>19/04/77</td>
<td>13/02/85</td>
<td>20/05/75</td>
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<tr>
<td>MCV (fl)</td>
<td>78</td>
<td>-</td>
<td>-</td>
<td>87.7</td>
<td>92</td>
<td>92</td>
<td>-</td>
<td>89.6</td>
<td>-</td>
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<tr>
<td>MCH (pg)</td>
<td>27</td>
<td>-</td>
<td>-</td>
<td>28.8</td>
<td>32</td>
<td>32.1</td>
<td>-</td>
<td>28.8</td>
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<tr>
<td>MCHC (g/dl)</td>
<td>34</td>
<td>-</td>
<td>-</td>
<td>32.9</td>
<td>29.2</td>
<td>29.5</td>
<td>-</td>
<td>32.1</td>
<td>-</td>
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<tr>
<td>PLC (cells/µl)</td>
<td>26400</td>
<td>13000</td>
<td>17000</td>
<td>11400</td>
<td>39200</td>
<td>32400</td>
<td>28000</td>
<td>15000</td>
<td>6000</td>
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Rx:
• Tab. Prednisolone 5mg 1 BD
• Tab. Folic acid 1 mg 1OD
• Iron drops 1 ml BD
• On day 10 of admission, sub conjunctival hemorrhage in left eye..
• Platelet count 6000 cells/µl
So one platelet transfusion done
21/02/13 to 27/02/13

Re-evaluation in cancer institute Adayar.
Baby clinically stable
Investigations :
   Hb, TC, DC - WNL
   Platelets  - 50,000cells/µl
   IgM Dengue- positive
   TORCH- Negative
   Bone marrow- hypercellular; No atypical& blast cells

Impression: Persistent post viral thrombocytopenia with no evidence of malignancy.
(09/03/13)

S/B consultant Haematologist (Dr. Pushpa)

**Peripheral smear**

RBCs- occasional microspherocytes, all RBCs flattened

WBCs – normal in count ; few WBCs seen engulfing RBCs *(erythrophagocytosis)*

Platelets - Decreased in number *(Thrombocytopenia)*

- Serum Ferritin – 129 ng/ml (N: 13 to 150)
- Serum TGL – 320 mg/dl (N: 40 to 165)
DISCUSSION

PERSISTENT THROMBOCYTOPENIA AFTER DHF
Possible mechanisms

a) Bone marrow suppression by virus
b) Immune mediated clearance of platelets
c) Spontaneous aggregation of platelets to vascular endothelial cell pre-infected by virus inducing aggregation, lysis and platelet destruction
d) Anti-platelet antibodies

(Ref: INDIAN PAEDIATRICS, nov 2006)
Discussion

2° hemophagocytic syndrome (IAHS):
Acute onset pancytopenia with high spiking fever, lymphadenopathy & hepatosplenomegaly
Others: Purpura , mucosal bleeding
   Elevated FDP, prolonged PT, aPTT
Hypofibrinogenemia
Fall in ESR
Diagnostic guidelines

• 1 or 2 of following criteria:
  1) molecular (PRF, SAP mutations)
  2) 5 out of 8 of the following:
     a) Fever
     b) Splenomegaly
     c) Cytopenia (= 2 cell lineages; Hb 9 g/dl, platelet 100000/µl, neutrophils 1000/µl)
     d) Hypertriglyceridemia (=265 mg/dl) & or Hypofibinogenemia (=150 mg/dl)
e) Hemophagocytosis in BM, spleen or LN without malignancy
f) Low or absent NK cell cytotoxicity
g) Hyperferritinemia (=500 ng/ml)
h) Elevated soluble CD25(IL-2alpha chain=2400 U/ml)
• Familial disease/known genetic defect
• Clinical and laboratory criteria (5/8 criteria)
• Fever
• Splenomegaly
• Cytopenia = >2 cell lines
  ◦ Hemoglobin <90 g/l (below 4 wks < 120 g/l)
  ◦ Platelets <100 x 10⁹/l
  ◦ Neutrophils <1 x 10⁹/l
• Hypertriglyceridemia and/or hypofibrinogenemia
  ◦ Fasting triglycerides = >3 mmol/l
  ◦ Fibrinogen <1.5 g/l
• Ferritin > 500 lg/l
• sCD25 = >2400 u/ml
• Decreased or absent NK-cell activity
• Hemophagocytosis in bone marrow, CSF or lymph nodes

• Our case

Hypertriglyceridemia (=265 mg/dl)
Hyperferritinemia (=500 ng/ml)
• STUDIED two children with persistent thrombocytopenia after DHF for more than 1 month

• *Persistent thrombocytopenia in both cases responded to IV Methyl predinosolone.*
Management of Severe Refractory Thrombocytopenia in Dengue Hemorrhagic Fever with Intravenous Anti-D Immune Globulin

Gaurav Kharya, Satya Prakash Yadav, Satyendra Katewa, Anupam Sachdeva.

The authors present their experience of usage of intravenous anti-D in 5 children with DHF and severe refractory thrombocytopenia (<10,000/mm³). It was administered in a dose of 50 to 75 µg/kg.

Mean platelet count was 6800/mm³ before and 33,600, 44,600, and 79,000/mm³ after intravenous anti-D administration at 24, 48, and 72 hours, respectively.

Intravenous anti-D can possibly be a treatment option for refractory thrombocytopenia in DHF.
Present status of child

• Child is active, well thriving, gaining milestones appropriate for age
• No active bleeds, no organomegaly, no lymphadenopathy
• On prednisolone 5mg bd and close observation
• Mother counselled for prevention of falls and injuries
Take home message

Thrombocytopenia in dengue usually lasts for 5-7 days.

But in rare instances it may last for more than 3 months as in our case.

We are presenting this case because of its rarity.