UNUSUAL PRESENTATION OF AN USUAL CAUSE OF THROMBOCYTOPENIA

SOUTHERN RAILWAY HQ HOSPITAL, PERAMBUR

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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 persistant thrombocytopenia (7000-15000 cells /µl) for more than 10 days

FURTHER INVESTIGATONS.....

S.ferritin(721 ng/ml) & S.TGL-464 mg/dl

S.Fibrinogen (1.7gm/L)

Bone marrow - reactive nomocellular.(23/01/13)

Hospitalised for 17days

1blood & 3FFP 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

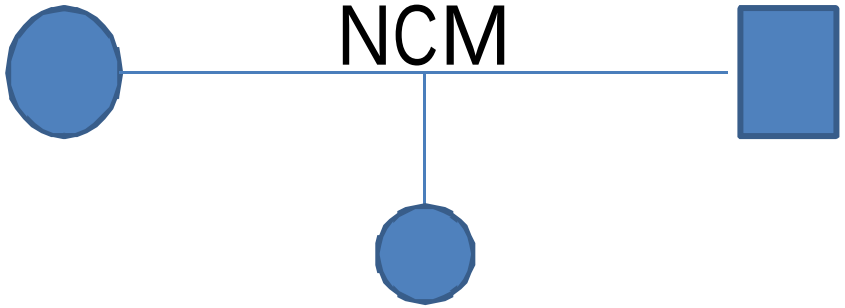
IN OUR HOSPITAL

- 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

CBC	12/02	13/02	14/02	02/03	08/03	18/03	25/03	02/04	09/04
Hb (g/dl)	10.9	10.4	9.2	9.6	10.1	10.6	10.9	10.8	11.1
Hct (%)	32	29	27	29.2	31.8	33	35	34	35
RBC (M/µl)	4.1	-	-	3.3	3.5	3.6	-	3.75	-
TC (cells/µl)	14190	9000	10400	7900	11400	18010	13400	9700	11500
DC (P/M/L)	11/05/84	06/07/87	07/03/90	10/05/85	26/01/73	07/03/90	19/04/77	13/02/85	20/05/75
MCV (fl)	78	-	-	87.7	92	92	-	89.6	-
MCH (pg)	27	-	-	28.8	32	32.1	-	28.8	-
MCHC (g/dl)	34	-	-	32.9	29.2	29.5	-	32.1	-
PLC (cells/µl)	26400	13000	17000	11400	39200	32400	28000	15000	6000

Rx:

- Tab. Prednisolone 5mg 1 BD
- Tab. Folic acid 1 mg 1OD
- Iron drops 1 ml BD

- On day 10 of admission, sub conjunctival hemorrage 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, neutrphils 1000/µl)

d) Hypertrigycidemia (=265 mg/dl)& or Hypofibinogenemia (=150 mg/d)

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 10^9/l
  - Neutrophils <1 x 10^9/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

Hypertrigycidemia (=265 mg/dl

Hyperferritinemia (=500 ng/ml)

ARTICLES

- INDIAN PEDIATRICS
- Volume 43 – November 17, 2006
- *N.Dinesh, V.D.Patil*
- Studied two children with persistent thrombocytopenia after DHF for more than 1 month
- *Persistent thrombocytopenia in both cases responded to IV Methyl predinosolone.*

Pediatric Hematology and Oncology, 28:727–732, 2011

- *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