

An infant with Recurrent Infections –What should we think

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A 4 months old male child of a non-consanguineous parents was admitted in Dhaka Shishu Hospital on 26.01.2016 with the complaints of cough and cold for 1 month, fever for 5 days, reluctant to feed for 2days. He had several histories of recurrent cough and fever for which he needed hospitalization. This was his 4th hospital admission. He was on exclusive breastfed.

During admission we found that the child was febrile (temp-102^oF), Tachypneic (R/R-68/min). There was chest in drawing with bilateral coarse crepitation. Heart rate was 148/minute without any added sound. Liver was just palpable. His weight was 4.8kg, height was 56cm which was on 50th centile and milestone of development was age appropriate. He was conscious and there were no features of meningeal irritation.

With these features we diagnosed him as a Recurrent Bronchopneumonia patient.

Sequence of events according to time line—

The child was first admitted in Dhaka shishu Hospital on 23.11.15 at his 2 month of age with fever and convulsion and was diagnosed as pyogenic meningitis and treated with conventional antibiotics for 14 days. After improvement he was discharged on 05.12.16.

After 4 days of discharge he was again admitted to Hospital on 9.12.15 with the diagnosis of Pneumonia and treated with antibiotic for 7 days and then discharged.

On 28.12.15 he was readmitted in hospital for the third time and diagnosed as Bronchopneumonia with UTI. This time child was evaluated for immunodeficiency and discharged on 11.01.16.

Fifteen days after this episode he was admitted again on 26.01.16 and discharged on 02.02.16 which described early.

Investigations done in different admissions

CBC Report				
Admission	1 st admission	2 nd admission	3 rd admission	4 th admission
Hb %	8.5gm/dl	7.6gm/dl	12.8gm/dl	11.9gm/dl
WBC	2900/cmm	16300/cmm	14000/cmm	18200/cmm
PLT	270000	587000	300000	410000
Neutrophil	62%	65%	64%	61%
Lymphocyte	33%	34%	28%	36%

CXR Report			
Admission	2 nd admission	3 rd admission	4 th admission
CXR	Right upper lobe consolidation	Bi lateral patchy opacities	Right upper and middle lobe consolidation

CSF Analysis revealed features of pyogenic meningitis with high leukocyte count (160/mm³) and high protein count (200mg/dl) on 1st admission

Blood C/S revealed no growth in different occasions as patient got antibiotics before admission.

CRP was high in all admission.

Urine analysis showed growth of Enterococcus on 3rd admission

Echocardiography – Normal study

MT Test – Negative

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Immunological Investigations

Immunoglobulin assay

Immunoglobulin	Result	Reference value
IgG	4.85 gm/L	7-16gm/L
IgM	2.13gn/L	0.4---2.3gm/L
IgA	0.23gm/l	0.7—4.0gm/L

Primary Immunodeficiency panel**Lymphocyte subset (TBNK) Analysis—Flow cytometry**

Markers	Result (%)	Ref. Value (3m-12m)	Result cell/UL	Ref. Value (3m-12m)
T cell Markers				
CD3+	63.91%	51.8-74.2	4474	2284-4776
CD8+	0.71%	12.8-27.1	50	524-1543
CD3+, CD4+	38.28%	34.9-53.1	2723	1523-3472
CD4+, CD8+ ratio			54.24	1.48-3.77
B cell Markers				
CD19+	0.80%	17-37.2	57	776-2238
NK cell Markers				
CD16+, CD56+	13.59%	4-15	967	230-801
Other cell Markers				
CD45	50.39%	Up to 60%	7112	3320-7006

Treatment given

During last three months several antibiotics were given like Injection Ceftazidim, Ceftriaxone, Flucloxacillin, Meropenem, syrup Clarithromycin.

Syrup cotrimoxazole was given as prophylactic antibiotic.

Besides antibiotics, Injection Pentaglobulin was given during his third hospital admission.

Our treatment plan-

- Prophylactic antibiotic for certain period.

- During infection antibiotic plus Pentaglobulin combindly can be given.
- Avoidance of live vaccine.
- Killed vaccines is safe , therefore these vaccination can be completed.
- We may give Stem cell transplantation (not available in our country)
- Gene Therapy (not available in our country)
- Patient should be kept under a routine Follow-up.

Conclusion

Serious infection or recurrent infections in early age need evaluation for primary immunodeficiency. Doctor's should think of this sorts of immunodeficiency cases.

References

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