

## Nursling Pyrexia Is Precarious; Dreadful Infection Peradventure!

Asafeya A<sup>1\*</sup>, Archa Rajendran<sup>1</sup>, Dr. Britto Duraisingh<sup>2</sup>, Dr. Selvaraj<sup>3</sup>, Dr. S. Haja Sheriff<sup>4</sup>

<sup>1</sup>Pharm. D Intern students, Nandha College of Pharmacy-Erode, Tamilnadu, India

<sup>2</sup>Clinical Pharmacist, Pharm. D., M.Sc(C&PT), Ganga Medical Centre & Hospitals (P)Ltd, Coimbatore, Tamil Nadu, India

<sup>3</sup>Neonatologist & Paediatrician, D.C.H., D.N.B (Paed), Ganga Medical Centre & Hospitals (P) Ltd, Coimbatore, Tamil Nadu, India

<sup>4</sup>Professor & H.O.D of Pharmacy Practice, M.Pharm, Ph.D., Nandha College of pharmacy, Tamilnadu, India

### Case Report

#### \*Corresponding author

Asafeya A

#### Article History

Received: 21.06.2018

Accepted: 07.07.2018

Published: 30.07.2018

#### DOI:

10.21276/sajp.2018.7.7.4



**Abstract:** We report a case of neonatal fever can declare peradventure infection. In this case, severe sepsis manifested as pyrexia and eventually progressed to acute osteomyelitis. The presence of fever in the neonatal period demands urgent evaluation from health care providers since signs and symptoms of a serious bacterial infection in this age group can be non-specific. Current practice guidelines recommend that febrile neonates should be presumed to have serious bacterial infection and undergo a sepsis evaluation and hospitalization until the results of diagnostic testing are known.

**Keywords:** pyrexia, sepsis, thrombocytopenia, acute osteomyelitis, neonate.

### INTRODUCTION

Fever is extremely common paediatric presentation and has many different causes. Fever is not an illness but rather a sign. Fever is defined as a core body temperature greater than 38<sup>0</sup>C (100.4<sup>0</sup>F) in infants younger than 28 days. Fever is a normal response to infection in adults, but only about half of newborns with an infection have a fever. Fever is an objective sign of an infection in a newborn. It is produced by the action of pyrogens on the thermoregulatory centre of the hypothalamus. Neonatal sepsis remains one of the leading causes of morbidity and mortality both among term and preterm infants. Our intention is to declare pyrexia is important sign of severe infection [5].

### CASE REPORT

A 14 days old term / LGA born baby with birth weight of 4kg was admitted with fever and poor feeding since two days. Admission weight was 3.64 kg and weight loss was less than 10%. Child was Exclusively breastfed till date. Baby was suspected to have sepsis and started on IV ampicillin and cefotaxime and IV fluids after blood culture and investigations.

#### Severe sepsis with coagulopathy

Investigations revealed leucopenia (3900cells/cumm), severe thrombocytopenia (26000cells/cmm) and highly raised CRP (214mg/l). Hence severe sepsis suspected and antibiotics switched over to vancomycin and ceftazidime and ordered for PT, aPTT& electrolytes. Baby developed abdominal distension and abdominal wall erythema after admission. USG abdomen showed evidence of exudative ascites. Inview of raised aPTT thrombocytopenia and ascites, possibility of primary viral infection suspected and evaluated. IgM Scrub typhus, Chickungunya and Dengue were negative.

Dengue IgG antibody was positive for both mother and baby. Mother was asymptomatic during antenatal and postnatal period. Baby was transfused with one unit of FFP inview of raised aPTT (44.7sec) following which aPTT (29.6sec) normalized.

#### Left distal femoral Osteomyelitis

Baby developed ascites and abdominal erythema followed by edema of left thigh. Ascites reduced but left thigh edema persisted even after weight loss and normalization of aPTT following FFP transfusion. Baby developed erythema over left thigh and vulva edema. CRP showed raising trend (196-226mg/l) after initial 5days of decline and total count increased to 33700 from leucopenia (3900cells/cumm) and platelets showed thrombocytosis (5.34lakhs) from thrombocytopenia (26000cells/cmm) and baby had poor movements of left leg hence osteomyelitis suspected. As USG and MRI showed evidence of osteomyelitis baby was taken up for surgery and antibiotics were continued.

The baby was transferred to mother side and antibiotics continued at bed side and monitored with serial CRP which showed declining trend and became negative (3.4mg/l) on 25<sup>th</sup> day of IV vancomycin and ceftazidime. Blood culture and pus culture were negative. Repeat X-ray showed evidence of periosteal reaction around the left femur. Left thigh swelling reduced gradually IV antibiotics continued for 28 days and then discharged with advised to continue oral antibiotics for two weeks.

## DISCUSSION

A thorough history and clinical examination, hospitalization and sepsis evaluation are essential in the evaluation of febrile infants. Neonatal sepsis is the most important cause of morbidity and mortality in developing countries. Neonatal sepsis is a clinical syndrome of bacteremia characterized by systemic signs and symptoms of infection in the 1<sup>st</sup> month of life [2].

Neonatal sepsis encompasses systemic infections of the newborn including septicemia, meningitis, pneumonia, arthritis, osteomyelitis and urinary tract infection of the newborn. Although the discovery of inflammatory mediators that are elevated during the early stages of infection and has the potential to improve diagnostic capabilities in infants [6].

In order to improve the outcome associated with neonatal sepsis, it is necessary for a diagnostic test to be rapid and sensitive to decrease delay in treatment. At the same time in order to avoid unnecessary exposure to antibiotics and invasive procedures, a test with higher specificity is needed [1].

CRP is one of the most extensively studied, most available, most frequently used laboratory tests for the diagnosis of neonatal sepsis. CRP is an acute phase reactant synthesized by the liver [4]. Serial CRP measurements may also be helpful in monitoring the response to treatment in infected neonates and thus may help clinicians guide the duration of antibiotic therapy. CRP can be considered as a “specific” but “late” marker of neonatal infection [3].

The mechanism of thrombocytopenia is a complex process involving the activation of platelets, procoagulants and anticoagulants, various complement, cytokines and endothelial cells [8]. Thrombocytopenia and platelet destruction are common in severe infection. It might be due to suppression of bone marrow and peripheral destruction of platelets, the later induced by platelet antibodies. Patients should be monitored for hemorrhagic manifestations and thrombocytopenia [7].

The diagnosis of osteomyelitis in this baby was based on clinical signs and symptoms, laboratory, radiological findings. Diagnosis of osteomyelitis in the neonates can be challenging and is often delayed as it is rare in the neonatal period and frequently presence with

nonspecific signs of illness [10]. In this case MRI of the affected limb confirmed the suspicion of neonatal osteomyelitis in this baby [9].

## CONCLUSION

Infection in the newborn creates a significant burden due to its impact on neonatal mortality and long term morbidity. In spite of ongoing efforts in early diagnosis, treatment, and prevention, neonatal sepsis still remains an enigmatic area for neonatologists due to changes in epidemiology and the lack of ideal diagnostic markers. The need for a biomarker with high diagnostic accuracy and reliability is paramount as a guiding tool for physicians to assess the risk of infection and need for antibiotic therapy.

## ACKNOWLEDGEMENT

We express our heartfelt gratitude to Ganga Medical Centre & Hospitals Pvt Ltd, Coimbatore and Department Of Pharmacy Practice, Nandha College of Pharmacy.

## REFERENCES

1. Sinclair J. Early diagnosis of neonatal sepsis. Year book of paediatrics. 1982:11-13.
2. López Sastre JB. Neonatal sepsis of vertical transmission: An epidemiological study from the "Grupo de Hospitales Castrillo". J. Perinat. Med. 2000;28:309-15.
3. Kawamura M, Nishida H. The usefulness of serial C-reactive protein measurement in managing neonatal infection. Acta paediatrica. 1995 Jan;84(1):10-3.
4. Pourcyrous M, Bada HS, Korones SB, Baselski V, Wong SP. Significance of serial C-reactive protein responses in neonatal infection and other disorders. Pediatrics. 1993 Sep 1;92(3):431-5.
5. Hofer N. Neonates' presenting with temperature symptoms: role in the diagnosis of yearly onset sepsis. Pediatr Int. 2012; 54:486-90.
6. Gerdes JS. Diagnosis and management of bacterial infections in the neonate. Pediatric Clinics. 2004 Aug 1;51(4):939-59.
7. Uhrynowska M, Niznikowska-Marks M, Żupańska B. Neonatal and maternal thrombocytopenia: incidence and immune background. European journal of haematology. 2000 Jan;64(1):42-6.
8. Castle V, Andrew M, Kelton J, Giron D, Johnston M, Carter C. Frequency and mechanism of neonatal thrombocytopenia. The Journal of pediatrics. 1986 May 1;108(5):749-55.
9. Weissberg ED, Smith AL, Smith DH. Clinical features of neonatal osteomyelitis. Pediatrics. 1974 Apr 1;53(4):505-10.
10. Dodwell ER. Osteomyelitis and septic arthritis in children: current concepts. Current opinion in pediatrics. 2013 Feb 1;25(1):58-63.