



## Neonatal Sepsis Due to Salmonella Typhi – A Case Report

Authors

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### Abstract

*Sepsis due to Salmonella enterica serovar Typhi is rare in neonates. Salmonellosis is not considered in the differential diagnosis of neonatal sepsis. Though described as a mild and self limiting illness in infants, life threatening complications have also been noted. Here we present the case of a 17 day old male baby who was born at 34 weeks of gestational age through NVD at home and fed on cow's milk since day 1 of life. The case is presented because of its interesting scenario regarding the onset of sepsis and clinical presentation.*

### Introduction

Enteric fever due to Salmonella enterica serovar Typhi and Paratyphi A continues to remain a major cause of morbidity and mortality in developing countries, including India, with the incidence highest in the 5 to 19 years age group<sup>[1]</sup>. In the infantile and neonatal age groups enteric fever is usually mild and unrecognized. However especially among the poorly fed and underweight infants mortality may be high<sup>[2]</sup>.

### Case Report

A 17 days old male baby presented with a history of poor feeding and lethargy for past 4 days with 2 spikes of fever, recurrent episodes of loose watery stool and abdominal distension since the day of admission along with decreased urine output for the last 12 hours. The child was fed on diluted cow's milk since day 1 of life. The family belonged to poor socioeconomic strata with traditional unhygienic practices. Examinations revealed the baby had a poor cry, reflex and

activity was lethargic with cold peripheries. Capillary refill time was > 3sec. There was associated respiratory distress and the baby required oxygen support. However, on auscultation no obvious abnormal breath sounds were audible. A capillary blood gas done which revealed a low pH with low bicarbonate which was suggestive of metabolic acidosis. Routine investigations, blood, urine and stool culture were sent. The stool culture was sent in view of recurrent episodes of loose stool. X-ray chest and abdomen was done along with a lumbar puncture. The baby was empirically started on IV cefotaxim and amikacin along with IV fluids. Sepsis screen was strongly positive with low counts and high CRP (Total count 3,500, CRP 237 micro ESR 19). Urea and creatinine were raised (Urea-104 Creatinine-2.14) most likely due to prerenal AKI on the background of severe dehydration. Serum bilirubin was high. X-ray chest showed pneumonia in the right lower lobe. Abdominal X-ray and USG ruled out NEC. The blood and stool

culture after 72 hours both showed growth of *Salmonella typhi* sensitive to cefotaxim. The baby was treated with same antibiotics for 14 days. The baby continued to improve clinically, oral feeding was established, sepsis screen and other laboratory parameters normalized. The baby was discharged in stable condition following completion of antibiotic course.

### Discussion

*Salmonella* infection is not a commonly thought cause of neonatal sepsis. Literature review of neonatal typhoid fever by Reed et al. [3] suggested two major clinical forms of typhoid fever in infants, one of sepsis neonatorum and the other of asymptomatic fecal carrier. Reports of vertical transmission from mother to fetus or horizontal transfer through fecal contaminated lower birth canal, aspiration or intake of contaminated top feeds or even through oral suctioning in nurseries have been reported [3,4]. Neonates with salmonella sepsis present with signs and symptoms as of any gram negative bacterial sepsis. A review of literature has shown classical signs of enteric fever like high fever, hepato splenomegaly; leucopenia may not necessarily be present in neonates [5]. Instead neonates present with dehydration, lethargy, poor feeding, hypothermia and respiratory distress, jaundice [1]. The baby in our case too showed similar findings. The incubation period of neonatal salmonella sepsis is shorter and is usually only about 48 hours, although it may be up to seven days [6]. In view of this our case was most likely due to horizontal transmission and also the fact that the baby was fed on cow's milk since birth. However the mother's blood and stool couldn't be examined due to refusal of consent. This doesn't rule out vertical transmission completely. Our case shows that though *Salmonella* as a cause of neonatal sepsis is very rare it should be kept in mind in endemic areas especially on the background of poor feeding practices.

### References

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