

Salmonella Paratyphi B septicemia in a Neonate

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ABSTRACT

Septicemia is a major cause of death in neonates especially in developing countries. We report a case of septicemia in a neonate due to *Salmonella* Paratyphi B. The baby responded well to therapy and recovered completely.

Key words:

Neonatal septicemia, *Salmonella* Paratyphi B

INTRODUCTION

Salmonellosis is a major cause of bacterial enteric illness. Young children are more prone to infection and are at increased risk of severe complications like septicemia and meningitis.^[1] Even though there are case reports of neonatal septicemia due to *salmonella*,^[2] *Salmonella enterica* serotype Paratyphi B causing neonatal sepsis in India is rare.^[3] We report here a case of neonate with *Salmonella enterica* serotype Paratyphi B septicemia.

CASE REPORT

A 6-day-old baby girl presented with fever and blood in stools and vomitus since 1 day. She was a term, small for gestational age, delivered by normal vaginal delivery with a birth weight of 1.55 kg in a private hospital born to a economically poor and severely anemic mother. She was supplemented with top up feeds along with breast milk and was discharged on 3rd day. Antenatal and perinatal history was uneventful. Her Apgar score was not available. On examination she was febrile (101°F), pulse rate 160 beats/min and respiratory rate 50 breaths/min. She appeared dehydrated. Her systemic examination was unremarkable. A diagnosis of neonatal sepsis was made and baby was started empirically on intravenous piperacillin/tazobactam 80 mg/kg body weight 8th hourly and cefotaxime 60 mg/kg body weight 8th hourly. The drug was chosen based on the sensitivity pattern of the prevalent bacteria usually causing sepsis in the hospital nursery.

Screening for sepsis was done. Laboratory investigations revealed increased C-reactive protein-169.8 mg/L, serum urea 227 mg/dl and serum creatinine was 3.6 mg/dl. Hemogram showed Hb 15.7 gm%, white blood cell count on admission was 24,200/cumm with 54% neutrophils and 40% lymphocytes 6% monocytes and platelet count of 92,000/mm³ suggesting sepsis and prerenal failure.

Blood collected at the time of admission flagged positive after 8 hours by BD BACTEC 9120 (Becton Dickinson). The isolate, Gram-negative bacilli is identified as *Salmonella enterica* serotype Paratyphi B (Agglutinating serum, Remel Europe, Ltd) which was sensitive to ampicillin, ceftriaxone, co-trimoxazole, ciprofloxacin, cefotaxim, ceftriaxone and piperacillin/tazobactam. Stool culture was negative. CSF culture was not done as there were no symptoms of meningeal irritation. Treatment was continued with same antibiotics. Baby's condition improved with 5 days of treatment and was discharged on 9th day. Subsequently, the mother gave history of typhoid fever 3 years back. Mother's stool was cultured to rule out carrier state. Mother's stool culture yielded *Salmonella enterica* serotype Paratyphi B with the same antibiotic sensitivity pattern. Blood culture and Widal test were negative. Mother was advised to take treatment for carrier state and repeat stool culture after treatment. But she did not turn for follow-up.

DISCUSSION

Neonatal septicemia is a major cause of morbidity and mortality in developing countries. Survival depends on the urgent prompt diagnosis and institution of therapy.

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The possible routes of acquiring neonatal Salmonellosis are by vertical transmission, feco-oral route, environmental transmission through contaminated top feeds, via breast milk and transplacental route.^[2,4,5] In this case could be through perineal contamination during delivery or through feco-oral route as mother was a carrier.

Gastric acidity represents the initial barrier to *Salmonella* colonization and conditions that increase gastric pH significantly increase susceptibility to infection. Neonates and young infants have hypochlohydria and rapid gastric emptying, which contributes to their increased vulnerability to symptomatic Salmonellosis. In infants who typically take fluids, the inoculum size that can produce disease is also comparatively smaller because of faster transit through the stomach.^[6]

Neonatal salmonellosis can be identified with a high index of suspicion. *Salmonella* species are a cause of early onset sepsis in neonates and identifying the source of infection is highly important in such cases.

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