

Enteric Fever Below 2 Years of Age

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Typhoid fever continues to be a major health problem in India. The disease is considered less common in children below 5 years of age(1,2), but later reports indicate an increasing prevalence in this age group (3,4). The clinical features of the disease in infants and young children are nonspecific, vary significantly, are usually severe and take a longer time for recovery (5). Lately we have been getting cases of typhoid fever among young children. Hence this retrospective study was undertaken to find out its prevalence among hospitalized children and the clinical profile in children below 2 years of age.

Subjects and Methods

Case records of patients with typhoid fever in the age group 0-2 years admitted to the Pediatric Ward of Christian Medical College, Ludhiana, during May 1989 to April 1994 were examined. Complete data on the clinical profile and laboratory investigations was analyzed.

The diagnosis of typhoid fever was made on the clinical presentation and supported by one or more of the following laboratory parameters:

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laboratory parameters: isolation of *Salmonella typhi* from the blood culture or a single 'O' and 'H' Widal titre of $\geq 1:160$.

Results

A total of 409 cases of typhoid fever were admitted to the pediatric ward during these 5 years, of which 42 (10.9%) were below 2 years of age. Of these 42 children, a majority 36 (85.7%) were between 13 to 20 months of age. Only 6 (14.3%) cases were seen in infancy, all of whom were more than 6 months of age. The clinical presentation of these patients is listed in *Table 1*.

Salmonella typhi was isolated from 18 (42.9%) cases, of which 11 (61%) showed *in vitro* resistance to the three primary drugs (chloramphenicol, ampicillin and cotrimoxazole). Widal was positive in 26 (61.9%) cases.

Fifty per cent of the patients had leucocytosis ($>10,000/\text{cu mm}$) while leucopenia ($<5000/\text{cu mm}$) was present in only 8 (19.1%) patients. Complications were seen in 4 (9.5%) patients, of which 2 each (4.8%) had encephalopathy and ileus. Gastrointestinal hemorrhage or perforation was not seen in any patient.

Discussion

An increase in the incidence of typhoid fever in young children has been reported earlier(3,4,6,7). Earlier reports are however, limited to pre-school children. In the present study 10.9% of the total admitted cases of typhoid fever were below 2 years of age. A study from Africa reported that 50% of cases of typhoid fever in children <5 years of age occurred in children <2 years(8). In contrast only occasional cases of typhoid fever, <2 years of age, are reported from India(3,4).

Moderate to high grade fever of more than 5-10 days duration was the common

TABLE I—Clinical Features In Patients with Enteric Fever

Clinical Features	Number n=42	(%)
<i>Symptoms</i>		
Fever	42	(100.0)
Cough	17	(40.5)
Diarrhea	15	(35.7)
Vomiting	12	(28.6)
Anorexia	8	(19.0)
Altered sensorium	2	(4.8)
<i>Convulsions</i>		
Convulsions	2	(4.8)
Hepatomegaly (>2 cm)	36	(85.7)
Splenomegaly	26	(61.9)
Toxemia	9	(21.4)
Dehydration	5	(11.9)
Abdominal distension	4	(9.5)
Respiratory signs	4	(9.5)
<i>Complications</i>		
Coated tongue	2	(4.8)
Enteric encephalopathy	2	(4.8)
Paralytic ileus	2	(4.8)

est presentation. Non-specific symptoms like cough, diarrhea, vomiting and anorexia were also common. Hepatomegaly was more frequently seen than splenomegaly. Leucopenia(7,9), commonly observed in older children was seen in only 19% of the cases. Leucocytosis (50%) was seen more commonly.

This study shows a relatively high prevalence of typhoid fever in children below 2 years of age. Pediatricians need to

have a high index of suspicion even in children below 2 years who present with prolonged fever and hepatosplenomegaly. In view of a high prevalence of typhoid fever in young children, it may be advisable to recommend vaccination against the disease at an early age.

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