



CODEN [USA]: IAJ PBB

ISSN : 2349-7750

## INDO AMERICAN JOURNAL OF PHARMACEUTICAL SCIENCES

SJIF Impact Factor: 7.187

<http://doi.org/10.5281/zenodo.4066817>Available online at: <http://www.iajps.com>

Research Article

### CLINICAL FEATURES OF ENTERIC FEVER IN DIFFERENT AGE GROUPS

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Article Received: August 2020

Accepted: September 2020

Published: October 2020

**Abstract:**

**Objective:** To know the clinical manifestations of enteric fever on the basis of age difference in <5 years and  $\geq 5$  years old children.

**Methods:** This study was conducted to know the clinical profile of enteric fever patients admitted in pediatric unit of District Headquarters Hospital, Jhang for one-year duration from March 2019 to March 2020. A total of 36 patients between the age of 9 months to 12 years with fever with Widal positive and/or with culture grown salmonella were included.

**Results:** The mean age of presentation was  $5 \pm 3$  years. The ratio of men to women was 2: 1. The frequent clinical symptoms were fever (100%), vomiting (38.8%), abdominal pain (27.77%), cough (27.77%), diarrhea (19.44%), hepatomegaly (80.55%), splenomegaly (47.22%), relative bradycardia (13.88%) and rose spots (8.33%). None of the patients were constipated. In the age group <5 years, diarrhea was more frequent, while the relative bradycardia was observed in the age group  $\geq 5$  years. Of all the first-line antibiotics in 31 (86.11%) ceftriaxone, in 4 (11.11%) ciprofloxacin, cefotaxime in one (2.7%) were given. Treatment failure with first-line antibiotic was reported in 30.5% patients. Complications occurred in 6 (16.66%) patients, including 2 (33.32%) had serious inflammation, 1 (16.67%) each had osteoarthritis, splenitis abscess and shock. 34 (94.44%) children recovered, 1 died and 1 was lost to follow. Recovery was faster in the <5 years group compared to  $\geq 5$  years. 30% of our patients had third-generation resistance cephalosporin as first-line antibiotics.

**Conclusion:** Diarrhea was more common in the age group <5 years, whereas relative bradycardia was only seen in the age group  $\geq 5$  years. In any case, there was no constipation. Clinical symptoms such as fever vomiting, abdominal pain, cough, diarrhea, enlarged liver Both age groups had splenomegaly and rose stains.

**Key words:** Intestinal Fever, Relative Bradycardia, Diarrhea.

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Please cite this article in press Tariq Mahmood et al, *Clinical Features Of Enteric Fever In Different Age Groups.*, Indo Am. J. P. Sci, 2020; 07(10).

**INTRODUCTION:**

Intestinal fever is still endemic in poor countries around the world, although it has been eradicated in developed countries thanks to well-organized sanitation and protected waters<sup>1-2</sup>. The five Fs most concerned about the spread of typhus are food, fingers, flies, casts, and droppings. Intestinal fever is mainly caused by typhi, followed by salmonella para typhi A<sup>3-4</sup>. It is transmitted with the feces by the oral route. Infected people and healthy vectors are the main sources of infection. Common clinical symptoms of intestinal fever are fever, vomiting, abdominal pain, diarrhea, cough, hepatomegaly, anemia, and thrombocytopenia<sup>5-6</sup>. A similar clinical picture is also observed in dengue and malaria fever. Intestinal fever is more common in children over 5 years of age, and complications have been observed in more than 1/3 of patients<sup>7</sup>. However, in children under 5 years of age, clinical symptoms may vary, so it is important to know the clinical symptoms of typhoid fever and whether there is difference in the clinical picture of typhoid fever on the basis of age difference<sup>8-9</sup>. This study was conducted to know the clinical profile of enteric fever patients admitted in pediatric unit of District Headquarters Hospital, Jhang for one-year duration from March 2019 to March 2020. A total of 36 patients were included in the study.

**METHODS:**

This study was conducted in the pediatric unit of District Headquarters Hospital, Jhang for one-year duration from March 2019 to March 2020. All patients enrolled were 9 months to 12 years of age and had Widal positive fever and / or with salmonella grown in a culture. A total of 36 patients participated in the study. Informed consent was withdrawn from the parents. All patients were interviewed in detail with the clinical examination. All patients underwent tests such as CXR, complete blood count, liver and kidney function tests, stool and urine tests, broad scan, and blood culture on admission prior to study inclusion. Other tests, such as the slide for MP and IgM dengue, were performed to rule out other causes of the fever. Common clinical and laboratory features were noted. Patients with other causes of fever, such as malaria and dengue, were excluded. Patients were divided into 2 age groups <5 years and ≥5 years, and clinical symptoms were observed depending on age difference.

**RESULTS:**

The mean age of presentation was 5 (5.0 ± 3.0) years, 17 (47.2%) patients were <5 years old, and 19 (52.8%) were ≥ 5 years old. The male to female ratio was 2: 1 (Table 1).

**TABLE-1: Total No of Males and Females in<5 Years and >5 Years (no=36).**

<5 years			>5 years		
Sex	Number	%age	Sex	Number	%age
Males	12	70.59	Male	12	63.16
Females	05	29.41	Female	07	36.84

The various clinical features are presented in Table 2.

Clinical Feature	No. of Patients (%)
Fever	36 (100.0)
Hepatomegaly	29 (80.55)
Splenomegaly	17 (47.22)
Vomiting	14 (38.88)
Abdominal pain	10 (27.77)
Cough	10 (27.77)
Diarrhea	7 (19.44)
Relative bradycardia	5 (13.88)
Rose spots	3 (8.33)

A comparison of the clinical features of the age groups <5 years and ≥5 years is presented in Table 3.

	< 5 years (%)	> 5 years (%)
Male	12 (70.59%)	12 (63.16%)
Female	5 (29.41%)	7 (36.84%)
Vomiting	8 (57.14%)	6 (42.86%)
Abdominal pain	4 (40%)	6 (60%)
Diarrhea	5 (71.43%)	2 (28.57%)
Cough	4 (40%)	6 (60%)
Hepatomegaly	13 (48.15%)	14 (51.85%)
Splenomegaly	8 (50%)	8 (50%)
Rose spots	1 (33.33%)	2 (66.67%)
Relative bradycardia	0	5 (100%)
Duration of fever (days)	14.8 ± 13.8	9.1 ± 4.6
Duration of 1 <sup>st</sup> line antibiotics	15.6 ± 4.9	14.9 ± 11
Duration of 2 <sup>nd</sup> line antibiotics	7.7 ± 2.1	11.8 ± 3.2
Recovery (days)	6.1 ± 2.1	9.4 ± 4.5

Children aged <5 years recovered much faster than children in the age group > 5 years (mean 6.1 ± 2.1 days versus 9.4 ± 4.5, respectively). Diarrhea has been mainly observed in the 5 year age group where relative bradycardia was mainly seen in the ≥5 year age group. The widal test was positive in 30 (83.4%) patients, of which O-titer was elevated in 29 (80.6%), H-titer was elevated in 24 (66.7%), AH was elevated in 5 (13.8%) and 1 (2.8%) had elevated BH titer. Isolated *S. Typhi* infection was found in 31 (86.11%), and isolated *S. Para typhi* infection in 5 (13.88%) patients. Blood cultures were positive in 8 (22.22%) patients. 4 (11.11%) patients had both Widal and blood cultures positive. Of all the first-line antibiotics used, ceftriaxone was used in 31 (86.11%) patients, ciprofloxacin in 4 (11.11%) and cefotaxime in 1 (2.77%). Second-line antibiotics were required in 11 (30.5%) patients, including amikacin in 5 (13.88%) patients, ofloxacin in 3 (8.33%), and ciprofloxacin in 3 patients. Multi-drug resistance was found in 1 (12.5%) of 8 patients with positive blood culture results. Complications occurred in 6 (16.66%) patients, 2 of whom (33.32%) had serous inflammation, and 1 each had osteoarthritis, spleen abscess and shock. 1 patient died, 1 lost observation, and all others fully recovered.

### DISCUSSION:

Very little data are available on age-related clinical symptoms in children, with only one study by Wales *et al.* In most studies, children with intestinal fever were over 5 years of age at presentation with children under 5 years of age within a range of 22.5% - 24.8%<sup>10-11</sup>. In our study, children under 5 years of age accounted for 47.2% of all patients with intestinal fever, which may be due to poor hygiene and nutrition under 5 years of age<sup>12-13</sup>. In our study, men were more often ill than women, according to the study by Mubeen *et al.* On the other hand, Abdel Wahab *et al.* Found an equal distribution between boys and girls. Fever, vomiting, abdominal pain, hepatomegaly, and spleen enlargement were the most common clinical signs of intestinal fever in children

in our study, as described by Malik *et al.* And others. Relative bradycardia was not the main feature of

intestinal fever in our study, as reported by Kumar *et al.* However, it is more common in children over 5 years of age. Only one case of multi-drug resistance has been observed<sup>14</sup>. Complications of intestinal fever were observed in [18.18%] of patients, less frequently than in other studies in which complications were observed in over 30% of patients. Commonly reported complications of intestinal fever include bone marrow suppression, paralytic illusion, gastrointestinal complications, pneumonia, cholecystitis, endocarditis, osteomyelitis, CNS complications, and spleen abscess. Likewise, in our study, common complications were pleural effusion, spleen abscess, and osteitis. Other complications were

noted in our patients were synovitis and shock. Mortality was minimal in our study as described in other studies<sup>15</sup>.

### CONCLUSION:

Diarrhea was more common in the <5 years group, while relative bradycardia was only seen in the > 5 years group. In any case, there was no constipation. Clinical signs of fever, vomiting, abdominal pain, cough, diarrhea, hepatomegaly, spleen enlargement and rose blotches were present in both age groups.

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