

## Original Research

### Assessment of clinical profile of patients with typhoid fever

Ashish Gopal

Associate Professor, Department of General Medicine, Autonomous State Medical College, Firozabad, Uttar Pradesh, India

#### ABSTRACT:

**Background:** Typhoid fever is a bacterial infection due to *Salmonella typhi*. The present study was conducted to assess clinical profile of patients with typhoid fever.

**Materials & Methods:** 107 cases of typhoid fever of both genders were studied for clinical features and blood culture and Widal test was performed.

**Results:** Age group 20-30 years had 20 males, 15 females, 30-40 years had 18 males and 12 females, 40-50 years had 15 males and 8 females and 50-60 years had 12 males and 7 females. Common clinical features were fever seen in 102, headache in 62, constipation in 34, abdominal pain in 78, vomiting in 56, diarrhea in 22, cough in 19 and anorexia in 5. Widal test showed that 98 cases found to be positive and 9 negative.

**Conclusion:** Authors found that common clinical features were fever, abdominal pain, headache, constipation and vomiting.

**Key words:** Fever, abdominal pain, typhoid.

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**Corresponding Author:** Dr. Ashish Gopal, Associate Professor, Department of General Medicine, Autonomous State Medical College, Firozabad, Uttar Pradesh, India

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#### INTRODUCTION

Enteric fever is a collective term that refers to severe typhoid and paratyphoid. Typhoid fever, also known simply as typhoid, is a bacterial infection due to *Salmonella typhi* that causes symptoms which may vary from mild to severe and usually begin six to thirty days after exposure.<sup>1</sup> Often there is a gradual onset of a high fever over several days. Weakness, abdominal pain, constipation, and headaches also commonly occur. Diarrhea is uncommon and vomiting is not usually severe. Some people develop a skin rash with rose colored spots. In severe cases there may be confusion.<sup>2</sup> Without treatment symptoms may last weeks or months. Other people may carry the bacterium without being affected; however, they are still able to spread the disease to others. Typhoid fever is a type of enteric fever along with paratyphoid fever. Other findings include bradycardia, splenomegaly and hepatomegaly.

Between the third and fourth week of infection 10-15% of patients may have gastrointestinal bleeding, intestinal perforation, encephalopathy and shock.<sup>3</sup>

If left untreated, typhoid fever has a mortality rate close to 10 or 15% reducing to one or two percent with adequate and timely antibiotic treatment. Some reviews report that in children under four years lethality is 10 times higher than in older children.<sup>4</sup> By 2010, worldwide, typhoid fever caused about 21.7 million cases and 217,000 deaths; for paratyphoid fever the estimation was 5.4 million affected.<sup>5</sup> The present study was conducted to assess clinical profile of patients with typhoid fever.

#### MATERIALS & METHODS

The present study comprised of 107 cases of typhoid fever of both genders. Approval for the study was obtained from institutional ethical committee. All were

informed regarding the study and their consent was obtained.

Data such as name, age, gender etc. was obtained. A thorough clinical examination was performed in all patients. 10 ml blood sample was collected for culture and Widal test. Blood for culture was inoculated into the blood culture bottles. The remaining blood samples were centrifuged and the serum was used for immediate Widal testing. Positive blood cultures were processed

further according to standard procedures gram negative isolates suspicious for *S. Typhi* were confirmed by API20E and serology. Widal tube agglutination test was done using a dilution series of 1:40–1:1280 for O and H antigens. Results were tabulated and subjected to statistical analysis. P value less than 0.05 was considered significant.

**RESULTS**

**Table I Distribution of patients**

Age group (Years)	Males	Females
20-30	20	15
30-40	18	12
40-50	15	8
50-60	12	7
Total	65	42

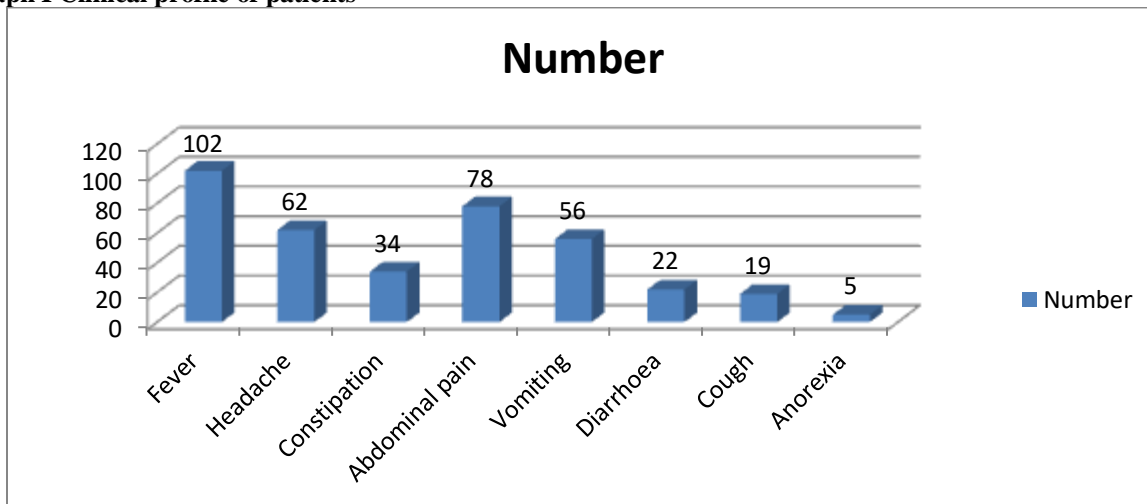
Table I shows that out of 107 patients, males were 65 and females were 42. Age group 20-30 years had 20 males, 15 females, 30-40 years had 18 males and 12 females, 40-50 years had 15 males and 8 females and 50-60 years had 12 males and 7 females.

**Table II Clinical profile of patients**

Clinical profile	Number	P value
Fever	102	0.01
Headache	62	
Constipation	34	
Abdominal pain	78	
Vomiting	56	
Diarrhoea	22	
Cough	19	
Anorexia	5	

Table II, graph I shows that common clinical features were fever seen in 102, headache in 62, constipation in 34, abdominal pain in 78, vomiting in 56, diarrhea in 22, cough in 19 and anorexia in 5. The difference was significant (P< 0.05).

**Graph I Clinical profile of patients**



**Table III Blood Culture & Widal test findings**

Blood culture	Widal test	
	Positive	Negative
Positive	85	7
Negative	13	2
Total	98	9

Table III shows that widal test showed that 98 cases found to be positive and 9 negative.

## DISCUSSION

Enteric fever is a serious systemic infection caused by Gram negative bacteria; *Salmonella enterica* serotype typhi and *Salmonella enterica* serotype Paratyphi.<sup>6</sup> This disease is endemic to low- and middle-income countries. It is more common in the continents of Asia and Africa due to inadequate hygiene and the lack of safe drinking water.<sup>7</sup> It is transmitted through the oral/fecal route. These microorganisms colonize the small intestine, invade the gastrointestinal mucosa and then spread to the liver, spleen and bone marrow.<sup>8</sup> The severity of the infection depends on the initial infective dose, virulence and the host immune response. Diagnosing typhoid fever among the many causes of fever in sub-Saharan Africa is a huge challenge. With declining malaria rates and more widespread deployment of *Haemophilus influenzae* and pneumococcal vaccines in many parts of the continent, the relative proportion of typhoid fever patients among patients with severe febrile illness presenting for care is likely to increase.<sup>9</sup> The current gold standard for diagnosis of typhoid fever is blood culture. However blood culture requires a well- equipped laboratory, skilled staff, and may take up to seven days. In the light of limited laboratory facilities in many developing countries, the diagnosis of typhoid fever remains a challenge.<sup>10</sup> The present study was conducted to assess clinical profile of patients with typhoid fever.

In this study, out of 107 patients, males were 65 and females were 42. Age group 20-30 years had 20 males, 15 females, 30-40 years had 18 males and 12 females, 40-50 years had 15 males and 8 females and 50-60 years had 12 males and 7 females. Choudhari et al<sup>11</sup> included 50 patients of enteric fever. The mode of presentation, clinical course, treatment history, laboratory investigations reports, antibiotic administered response to therapy and the complications were recorded. The maximum patients show the Fever and abdominal pain as the main symptoms. Other symptoms include the chills, headache, constipations, diarrhoea, vomiting, myalgia, cough etc. Maximum resistance for chloramphenicol, amoxicillin, and ampicillin was seen as compared to ceftriaxone and ciprofloxacin. Also Maximum sensitivity is also seen in Ceftriaxone.

We found that common clinical features were fever seen in 102, headache in 62, constipation in 34,

abdominal pain in 78, vomiting in 56, diarrhoea in 22, cough in 19 and anorexia in 5. Widal test showed that 98 cases found to be positive and 9 negative. Thriemer et al<sup>12</sup> found relationship of typhoid fever cases with rainfall, temperature, and religious festivals. The performance of the WHO case definitions for suspected and probable typhoid fever and a local cut off titre for the Widal test was assessed. 79 of 2209 participants had invasive bacterial disease. 46 isolates were identified as typhoid fever. Apart from a longer duration of fever prior to admission clinical signs and symptoms were not significantly different among patients with typhoid fever than from other febrile patients. The sensitivity and specificity of the WHO case definition for suspected and probable typhoid fever were 82.6% and 41.3% and 36.3 and 99.7% respectively. Sensitivity and specificity of the Widal test was 47.8% and 99.4 both forfor O-agglutinin and H- agglutinin at a cut-off titre of 1:80. Typhoid fever prevalence rates on Pemba are high and its clinical signs and symptoms are non-specific. The sensitivity of the Widal test is low and the WHO case definition performed better than the Widal test.

The shortcoming of the study is small sample size.

## CONCLUSION

Authors found that common clinical features were fever, abdominal pain, headache, constipation and vomiting.

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