

Clinical study of enteric fever at a tertiary care centre

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Abstract

Background: Enteric fever remains a serious public-health related problem in the developing countries. Salmonella typhi and Salmonella paratyphi A have demonstrated a changing antibiotic susceptibility pattern and also there is an emergence of multi drug resistant strains. **Objective:** Present study was done to study and evaluate the clinical profile and antibiotic response among typhoid fever cases in a tertiary care setting. **Methods:** It is a retrospective study of adult typhoid fever patients done at our tertiary care centre over a period of one year. Diagnosis of patients was done on the basis of clinical presentation, Widal test and blood culture. Blood culture samples were collected from suspected enteric fever patients and tested microbiologically by standard procedure. Antibiotic susceptibility test was performed by Kirby-Bauer disc diffusion method and results were interpreted by National Committee for Clinical Laboratory (NCCLS) guideline. The sensitivity pattern of the blood culture was noted. The mode of presentation, response to antibiotic therapy, complications and duration of hospital stay were recorded. Defervescence was defined as the number of days required for abatement of fever after starting the antibiotics. **Results and Conclusion:** The study comprised of 55 patients and their records were evaluated, 44 study subjects were males and 11 study subjects were females. Fever was the most common symptom and was present in all the patients. Headache was present in 31 (56.4%) patients and generalized body ache was present in 26 (47.3%) patients while Splenomegaly in 21 (38.2%) patients and hepatomegaly in 20 (36.4%) patients were the common presenting clinical signs. The average duration of hospital stay was 7.9 days. A maximum sensitivity of 98.2% was observed with ceftriaxone, whereas resistance to ciprofloxacin was common (20 %). The outcome was favourable with 52 (94.5%) patients recovering from the illness. Relapse of the disease was seen among three (5.45%) patients.

Keywords: Enteric fever, salmonella typhi, salmonella paratyphi.

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Received Date: 21/06/2015 Revised Date: 28/06/2015 Accepted Date: 01/07/2015

Access this article online	
Quick Response Code:	Website: www.statperson.com
	DOI: 02 July 2015

INTRODUCTION

Enteric fever occurs in several parts across the world where there is a substandard water supply and sanitation. In India, enteric fever is endemic with the morbidity ranging between 102 - 2219 per 100000 people.¹ Enteric fever is a systemic illness which is characterized by fever, abdominal pain, and also non-specific symptoms like headache, nausea, vomiting and anorexia. When enteric

fever is caused by Salmonella enterica serovar Typhi, it is called as typhoid fever and when caused by S. enterica serovar Paratyphi A, B, or C, it is known as paratyphoid fever^[2]. Treatment of enteric fever with appropriate antibiotics is essential. Development and the rapid dissemination of drug resistance to chloramphenicol, cotrimoxazole and ampicillin have complicated the treatment of enteric fever. Treatment options for multidrug-resistant strains are limited to use of third generation cephalosporins or fluoroquinolones³. Present study was done to study and evaluate the clinical profile and antibiotic response among typhoid fever cases in a tertiary care setting.

METHODS

It is a retrospective study of adult typhoid fever patients done at our tertiary care centre over a period of one year. Diagnosis of patients was done on the basis of clinical presentation, Widal test and blood culture. Blood culture samples were collected from suspected enteric fever

patients and tested microbiologically by standard procedure. Antibiotic susceptibility test was performed by Kirby-Bauer disc diffusion method and results were interpreted by National Committee for Clinical Laboratory (NCCLS) guidelines. The sensitivity pattern of the blood culture was noted. The mode of presentation, response to antibiotic therapy, complications and duration of hospital stay were recorded. Defervescence was defined as the number of days required for abatement of fever after starting the antibiotics.

RESULTS

The study comprised of 55 patients and their records were evaluated, 44 study subjects were males and 11 study subjects were females. Average age of presentation was 26.4 years. Fever was the most common symptom and was present in all the patients. Headache was present in 31 (56.4%) patients and generalized body ache was present in 26 (47.3%) patients while Splenomegaly in 21 (38.2%) patients and hepatomegaly in 20 (36.4%) patients were the common presenting clinical signs. The average duration of hospital stay was 7.9 days. A maximum sensitivity of 98.2% was observed with ceftriaxone, whereas resistance to ciprofloxacin was common (20 %). The outcome was favourable with 52 (94.5%) patients recovering from the illness. Relapse of the disease was seen among three (5.45%) patients. Complications were reported in two cases, one of the cases had myocarditis while the other had Bleeding per rectum.

Table 1: Presenting complaints in Enteric Fever Patients

Symptom	Number of subjects	Percentage
Fever	55	100
Headache	31	56.4
Generalised body ache	26	47.3
Vomiting	11	20
Diarrhoea	11	20
Pain in abdomen	5	9.1
Constipation	4	7.3
Dry cough	3	5.5

Table 2: Drug Sensitivity Patterns in Enteric Fever Patients

Drug	Number of subjects	Percentage
Ceftriaxone	54	98.2
Ciprofloxacin	44	80
Aminoglycosides	50	90.9
Chloramphenicol	51	92.7
Ampicillin	44	80

DISCUSSION

Enteric fever caused by *Salmonella typhi* or other enteric fever salmonellae (*S. paratyphi* A, B, and C) infect only humans and are transmitted through the oro-faecal route. Rapid population growth, limited water supply, increased urbanization, inadequate human waste treatment, and

overburdened health care systems have all made disease control difficult and have contributed to endemicity of the disease. The main method for control of enteric fever in such a situation is disease recognition and appropriate treatment. However, the emergence of resistance in enteric fever salmonellae to multiple first line antimicrobial agents poses a major threat to this strategy^{4,5}. Present study describes the clinical profile and antibiotic response among typhoid fever cases in a tertiary care setting. In our study, Fever was the most common symptom and was present in all the patients. Headache, generalized body ache, Splenomegaly and hepatomegaly were the common presenting clinical symptoms and signs. The average duration of hospital stay was 7.9 days. Similar results have been reported by other studies in Indian subcontinent^{6,7}. The antibiotic sensitivity pattern in the patients reflected a high level of drug resistance to fluoroquinolones at 20%. Decreasing sensitivity of *Salmonella bacilli* to ciprofloxacin has been reported by studies from Rajasthan and Kolkata^{8,9}. It indicates the improper and indiscriminate use of antibiotics. Sensitivity to chloramphenicol was high (92.7%). Similar observations have been reported in other studies done in Kolkata and North India^{9,10}. There was also high sensitivity found to amino glycosides and ampicillin in our study. Ashwini Kumar *et al*⁶ have also reported similar results. Thus, there was a high degree of sensitivity reported to conventional antibiotics whereas ciprofloxacin showed significant cases of drug resistance. Therefore, rational use of drugs is the needed so that we can avoid the problem of drug resistance. Treatment based on antibiotic sensitivity reports should be encouraged.

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Source of Support: None Declared
Conflict of Interest: None Declared