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ORIGINAL ARTICLE

ANALYSIS OF CEFIXIME IN THE MANAGEMENT OF TYPHOID FEVER: A CLINICAL STUDY

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ABSTRACT:

Background: Typhoid fever (TF) is caused by the gram-negative bacterium Salmonella Typhi. It is also known as enteric fever. Salmonella typhi has flagellae which makes it mobile, is a gram negative non spore bearing bacteria. The present study was conducted to assess the efficacy of third generation cefixime in the management of typhoid fever. **Materials & Methods:** The study consisted of 92 subjects (male- 40, female-52) suffering from typhoid fever. Typhoid fever was defined by fever > 38.5°C for longer than three days and the isolation of S. typhi from blood culture. 5 mg/kg of Cefixime po BD daily was advised in pediatric patients. Adult patients received a dose of 200 mg po, BD daily. Patients were evaluated on day 0, day 5, and day 10. The primary criteria of efficacy were absence of symptoms and signs of infection at day 10 of treatment and negative culture to S. typhi at day 10 of treatment. Results thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant. **Results:** This study included 40 males and 52 females.). This study consisted of 46 students, 12 children, 22 housewife, 10 official and 2 others. Following strains were seen O+ (42), H+ (12), AH+ (21), BH + (11) and H, BH + (7). The difference was significant (P<0.05). In 76 cases no complications were seen. While other side effects reported were rashes (2), nausea (1), diarrhea (6), stomatitis (3), drowsiness (4). **Conclusion:** Cefixime is third generation antibiotic is highly effective and safe drug for treatment of typhoid. The efficacy reported was 83%. Fewer side effects were seen which can be easily manageable.

Key words: Cefixime, Salmonella typhi, Typhoid fever.

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INTRODUCTION

Typhoid fever (TF) is caused by the gram-negative bacterium Salmonella Typhi. It is also known as enteric fever. Salmonella typhi has flagellae which makes it mobile, is a gram negative non spore bearing bacteria. Bacteria can survive for longer periods in hot, humid environment and withstand freezing. The disease is seen in low socio-economic status and poor hygiene. Human beings are natural hosts and reservoir of infection.[1] Infective dose for the disease is about 105-109 organism, with an incubation period ranging from 4-14 days. The clinical symptoms include continuous fever for 3-4 weeks with evening rise of temperature, relative bradycardia, with involvement of lymphoid tissue. Earlier this disease was considered to be severe, fatal disease but with chloramphenicol treatment it was known to be common, readily manageable infection. Later on there were cases of chloramphenicol resistant typhoid in early 1990s which led the invention of cotrimoxazole, ampicillin and amoxicillin.[2]

Because of appearance of multidrug-resistant S. typhi, there was need for newer agent which could be effective in managing TF. Fluoroquinolones have been proven effective, but their role in children is not recommended.[3] Even quinolone resistant strains of S. typhi have been reported. Use of azithromycin with cefixime in adults and children with typhoid fever have been tried and found to be safe and efficacious. Recently, the third generation cephalosporins have shown good activity against S. typhi. They exert bactericidal activity by interfering with bacterial peptidoglycon synthesis after binding to the β-lactam-binding proteins. The Cephalosporins are also thought to

play a role in the activation of bacterical cell autolysins which may contribute to bacterial cell lysis.[4]
The present study was conducted to assess the efficacy of third generation cefixime in the management of typhoid fever.

MATERIALS & METHODS

The study was conducted in year 2014. It consisted of 92 subjects (male- 40, female-52) suffering from typhoid fever. Typhoid fever was defined by fever > 38.5°C for longer than three days and the isolation of S. typhi from blood culture. Patients without intestinal complications or extra-intestinal complications like sepsis, arthritis, multifocal osteomyelitis, pneumonia were included. 5 mg/kg of Cefixime po BD daily was advised in pediatric patients. Adult patients received a dose of 200 mg po, BD daily. Patients were evaluated on day 0, day 5, and day 10. The primary criteria of efficacy were absence of symptoms and signs of infection at day 10 of treatment and negative culture to S. typhi at day 10 of treatment. Results thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I shows distribution of patients. This included 40 males and 52 females. The difference was non significant (P>0.05). Table II shows that this study consisted of 46 students, 12 children, 22 housewife, 10 official and 2 others. The difference was significant (P<0.05). Graph I shows that following strains were seen O+ (42), H+ (12), AH+ (21), BH + (11) and H, BH + (7). The difference was significant (P<0.05). Graph II shows that in 76 cases no complications were seen. While other side effects reported were rashes (2), nausea (1), diarrhea (6), stomatitis (3), drowsiness (4).

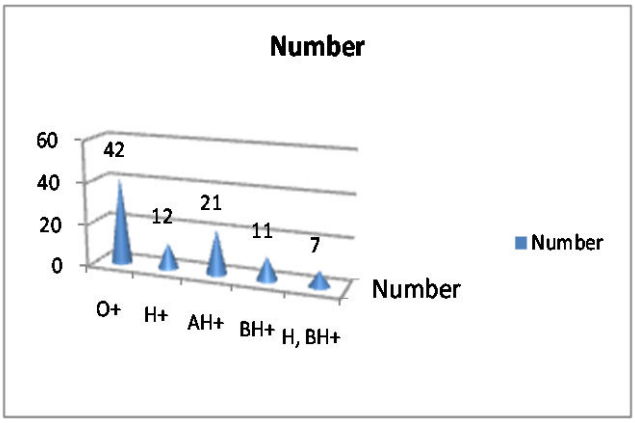
Table I Distribution of patients

Gender	Male	Female
Number	40	52

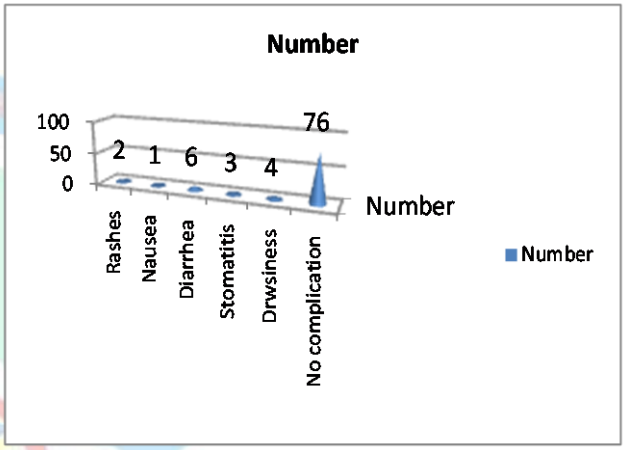
Table II Distribution of patients based on occupation

Occupation	Number	Percentage
Student	46	50%
Children	12	13%
Housewife	22	24%
Official	10	10%
Other	2	3%

Graph I Laboratory confirmation of WIDAL test



Graph II Side effects of Cefixime



DISCUSSION

In developing countries, chloramphenicol has been the drug of choice for the treatment of typhoid fever. But it is associated with high rate of relapses, aplastic anemia of chloramphenicol and multi-drug resistance against it has led to look for other agent that could prevent relapses and chronic carrier state, produce quick remission of the fever and can be administered orally with the smallest number of daily doses.[5]
Cefixime is classified as a 3rd generation cephalosporin as far as activity against gram negative (G-) micro-organisms is concerned, and as a 2nd generation cephalosporin as far as activity against gram-positive (G+) microorganisms is concerned. It has increased activity against some Enterobacteriaceae. It has overlapping activity against Haemophilus influenzae even if it produces b-lactamase and reduced activity against some gram-negative micro-organisms, with special reference to Streptococcus pneumonia.[6]
The present study was conducted to assess the efficacy of third generation cefixime in the management of typhoid

fever. It consisted of 92 subjects (male- 40, female-52) suffering from typhoid fever. This study consisted of 46 students, 12 children, 22 housewife, 10 official and 2 others. A study conducted by Santillan[7] included all school going children in his study.

In our study, following strains were seen O+ (42), H+ (12), AH+ (21), BH + (11) and H, BH + (7). Pariente et al[8] in his study found AH+ to be the prevalent stains among all.

In 76 patients no complications were seen. While other side effects reported were rashes (2), nausea (1), diarrhea (6), stomatitis (3), drowsiness (4). Our results are in agreement with the results of Mweu et al[9] and Akmm[10].

CONCLUSION

Cefixime is third generation antibiotic is highly effective and safe drug for treatment of typhoid. The efficacy reported was 83%. Fewer side effects were seen which can be easily manageable.

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