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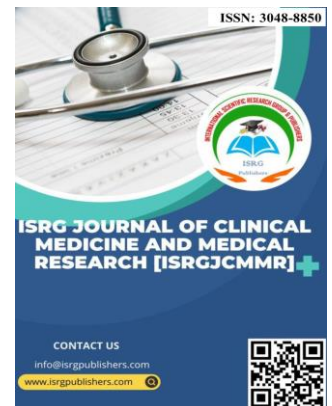
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Effectiveness Study of Levofloxacin in the Treatment of Childhood Typhoid Fever

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Abstract

Background: Typhoid fever, or enteric fever, is a major human infectious disease since centuries, surviving in conditions of poor sanitation, crowding and social chaos. In the developed countries, the incidence is much lower, and most cases are usually from travelers returning from endemic areas **Objective:** The aim of this study was to assess the effectiveness of levofloxacin in the treatment of childhood typhoid fever. **Methods:** This comparative study was carried out among 60 patients presenting with symptoms, signs and laboratory investigations diagnostic of typhoid fever in IPD and OPD of Paediatric department, Dhaka National Medical College Hospital, Dhaka, from April to October 2013. Widal test positive was included for the study & specific antibiotic Levofloxacin was started by randomization using lottery method. Statistical analyses of the results were obtained by using window based computer software devised with Statistical Packages for Social Sciences (SPSS-20.1). **Results:** Majority of the patients time of afebrile after taking antibiotic was 6 days. Almost two third (68.33%) of the patients were receiving treatment for 7 days. Regarding the side effects, it was observed that nearly three fourth (73.3%) of the patients had nausea. Vomiting was found in 8(13.3%) patients. Diarrhoea was found in 2(3.3%) patients. Abdominal discomfort was found in 17(28.3%) patients.

Conclusion: Levofloxacin is effective in the treatment of childhood typhoid fever. Nausea and abdominal discomfort were the more common side effect.

Keywords: Levofloxacin, resource poor, Typhoid fever

INTRODUCTION

Typhoid fever (typhoid or paratyphoid fever) caused by *Salmonella* serotype Typhi (S Typhi) or *Salmonella* serotype Paratyphi (S Paratyphi) remains endemic in many areas of the developing world, causing over 26 million infections and over 200,000 deaths annually¹. The incidence is highest in south-central Asia and South East Asia over 100/100,000 cases/year, with the highest burden of disease in children aged 2-15 years^{2, 3}. S Typhi represents the commonest cause of bacteraemia in this age group⁴.⁵ Early recognition and management of typhoid fever is needed to avoid the severe complications and possible fatality⁶. If not treated properly, enteric fever carries a mortality rate of 30%, whilst appropriate antimicrobial treatment reduces the mortality rate to as low as 0.5%⁷. Levofloxacin is a third generation fluoroquinolone drugs. The role of levofloxacin on intestinal bacteria and Enterobacteriaceae are strong, such as *Shigella*, *Salmonella*, *E. coli*, etc. Fluoroquinolones are the drug of choice for the treatment of typhoid fever⁸. Application of levofloxacin in the pediatric field has different controversy. In recent years, levofloxacin has been widely used in pediatrics, yet no serious reactions, including cartilage involvement reported⁹.

Materials & method

This comparative study was carried out on children age belonged to 1 – 12 years presenting with symptoms, signs and laboratory investigations diagnostic of typhoid fever in IPD and OPD of Paediatric, Dhaka National Medical College Hospital, Dhaka, Bangladesh during the period from April 2013 to October 2013. The diagnosis of typhoid fever was based on fever for more than 7 days; positive Widal test and exclusion of other febrile illnesses were enrolled in this study. Typhoid fever associated with other disease and patient who were already receiving antibiotics were excluded from the study. The collected data were entered into the computer and analyzed by using SPSS (version 20.1) to assess the effectiveness of levofloxacin in the treatment of childhood typhoid fever. The study was approved by the institutional ethical committee.

Results

Majority 21 (35.0%) patient's time of afebrile after taking antibiotic was 6 days (Table 1)

Table 1: Distribution of the study patients by time of afebrile after taking antibiotic (n=60)

Time of afebrile after taking antibiotic	Number	percentage
3 days	7	11.7%
4 days	14	23.3%
5 days	18	30%
6 days	21	35%

Almost three fourth (73.3%) patients had nausea. Vomiting was found 8(13.3%) patients. Diarrhoea was 2(3.3%) patients, abdominal discomfort was 17(28.3%) patients and skin rash was 2(3.3%) patients. (Table 2)

Table 2: Distribution of the study patients by side effects after taking antibiotic (n=60)

Side effects	Number	percentage
Nausea	44	73.3%

Vomiting	8	13.3%
Diarrhoea	2	3.3%
Abdominal discomfort	17	28.3%
Skin rash	2	3.3%

Almost two third, 41 (68.33%) patients were receiving treatment for 7 days. (Table 3)

Table 3: Distribution of the study patients by treatment duration (n=60)

Treatment duration	Number	percentage
10 Days	19	31.7%
7 Days	41	68.33%

DISCUSSION

In this current study it was observed that time of afebrile after taking antibiotic 6 days in 35.0% patients. This finding is consistent to the finding of Frenk et al. (2000) who observed the mean afebrile period was 3.9±1.0 days in case of Levofloxacin¹⁰. Levofloxacin are generally well tolerated. Side effects include nausea, vomiting, dyspepsia, abdominal pain, diarrhoea, headache, dizziness and asthenia; rarely tremor, anxiety, tachycardia, hypotension, hypoglycaemia, pneumonitis, rhabdomyolysis etc. Sheng (2010) mentioned in his study that gastrointestinal symptoms (nausea, vomiting, diarrhea, abdominal pain etc.) observed 60.53%, respiratory symptoms (cough, sore throat, etc.) observed 31.58% and headache observed 26.32%¹¹. In our study we observed that nearly three fourth (73.3%) of the patients had nausea. Vomiting was found in 8(13.3%) patients, Diarrhoea was found in 3.3% and abdominal discomfort was found in 28.3% patients.

Conclusion

Majority of the patient's time of afebrile after taking antibiotic was 6 days. Levofloxacin is effective in the treatment of childhood typhoid fever. Nausea and abdominal discomfort were the more common side effect.

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Conflict of Interest

Authors declare no conflict of Interest.

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