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Research Article

**STUDY TO KNOW THE EFFICACY OF AZITHROMYCIN IN
TYPHOID FEVER MANAGEMENT AMONG CHILDREN IN
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Abstract:*Objective: To know the azithromycin efficacy in the typhoid fever treatment in children.**Study design: A descriptive case series.**Place and Duration: In the Pediatric Department of Jinnah Hospital, Lahore for one year duration from January 2018 to January 2019.**Methods: A total of 110 patients included in the study were included in the inclusion / exclusion criteria.**Results: In this study, the most mean age was 8.78 ± 3.87 years and 68 (61.82%) male and 42 (38.18%) female patient. In children with fever efficacy was recorded in and 96 (87.27%) of cases, and only 15 (13.03%) cases could not be managed properly. The results of the analysis proves that azithromycin is a effective and safe drug in the typhoid fever treatment in children.**Conclusion: The outcomes of the analysis shows that azithromycin is a effective and safe drug in the management of typhoid fever in children.**Key words: Typhoid, azithromycin, child.***Corresponding author:****Dr. Arslan Hameed,**

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INTRODUCTION:

Typhoid fever is an acute disease of intestine caused by *Salmonella typhi* bacteria and is an important contributor to morbidity and mortality globally. It is an important health problem. In 2010, the WHO supposed the 17 to 34 million typhoid cases incidence worldwide each year, from 500,520 to 610,077 deaths and from 1.5 to 3 million deaths. Globally, more than 80% cases reported and the most frequently reported region to obtain typhoid fever from 2001 to 2014 was South Asia. There are various analysis with high incidence rate of typhoid fever in children in hospitals of Pakistan. According to one suggestion, in Pakistan every year 265,000 deaths occur and typhoid fever is major reason among them. *Salmonella*, resistant to chloramphenicol, trimethoprim-sulfamethoxazole and ampicillin is known as multidrug resistance (MDR). 82% of these drugs resistance is found in Pakistan. The MDR development of chloramphenicol, ampicillin and trimethoprim-sulfamethoxazole change drugs for use such as ceftriaxone, azithromycin and ciprofloxacin. 3rd-generation cephalosporins and Fluoroquinolones are preferred drugs for the treatment of typhoid fever. However, the increase in resistance to quinolones in recent years has given rise to considerable pressure on public health systems in countries which are developing due to limited treatment facilities. Ceftriaxone is the first line management for these patients. Azithromycin is also promising in these patients because it significantly reduces the rate of relapse compared to ceftriaxone. In another study in Bangladesh, it was found that the efficacy of treatment with azithromycin was 94% of the patients to know the azithromycin safety and efficacy in the management of complicated typhoid fever in children. The emergence of multi-drug resistance in Pakistan and other countries results in the use of

other drugs. Therefore, this analysis was performed to evaluate the azithromycin efficacy in the fever treatment and aid in children with typhoid fever in the best selection of drugs for the enteric fever treatment in children. This drug low cost and its unique dose daily will be affordable for patients.

MATERIALS AND METHODS:

This descriptive case series was held in the Pediatric Department of Jinnah Hospital, Lahore for one year duration from January 2018 to January 2019. In the study total of 110 children in total typhoid fever of both sexes from 3 to 15 years old were selected, supported by IgM positive typhoid fever due to the clinical appearance of fever in children with the diagnosis of typhoid fever. The Typhoid fever disease complications were not discussed in this study. From the children parents, Informed consent was taken and the treatment method was explained. All patients received a single dose of 10 mg / kg / day azithromycin. The patients were checked daily by the researcher and the treatment efficacy was observed. Treatment efficacy was achieved (complete dissolution of the fever 96 hours after treatment (98.6F) and the patients remained feverish for the next 2 days). In a pre-designed format, the data were recorded. Data were entered into SPSS version 15.0 and accordingly analyzed. It was recorded as standard deviation and mean. The treatment efficacy were presented as percentage and frequency. Data were stratified for the fever duration (<3,> 6 days) prior to management.

RESULTS:

The mean age of the patients was distributed, between 6-10 years 11-15 years and 8.78 + 3.87 between 16 (14.55%) 29 (26.36%), 3-5 years, 65 (59.09%). Mean and recorded as sd (Table 1).

Table 1: Age Distribution (n=110)

Age(years)	n	%
3-5	29	26.36
6-10	65	59.09
11-15	16	14.55

The distribution of patients by gender was 69 (62.02%) male and 43 (37.98%) female patients (Table 2).

Table 2: Gender Distribution of The Patients (n=110)

Gender	n	%
Male	68	61.82
Female	42	38.18

Only 14 (12.73%) cases were evaluated in terms of efficacy and efficacy of azithromycin in the typhoid treatment among children and in 96 (87.27%) cases if there was no effective treatment (Table 3).

Table 3: Efficacy of Azithromycin in the Treatment of Typhoid Fever In Children (n=110)

Efficacy	n	%
Yes	96	87.27
No	14	12.73

The efficacy of azithromycin in the treatment of typhoid fever among children with fever was 77 (70%) of cases > 5 days before treatment and 69 of them had fever (89.61%). Two days before the treatment, 33 (30%) of the fever were recorded and 27 of them (81.82%) were treated effectively (Table 4).

Table 4: Stratification of Efficacy of Azithromycin in the Treatment of Typhoid Fever In Children with Regards to Duration of Fever (n=110)

Duration of fever before treatment	No. of cases	%	Efficacy	
			No. of cases	%
>5 days	77	70	69/77	89.61
<2 days	33	30	27/33	81.82

DISCUSSION:

In Pakistan, multi-drug resistance emergence and in other countries results in the use of other antimicrobial medicines. This analysis was performed to evaluate the azithromycin efficacy in the typhoid fever treatment in children and will help in choosing the best drug for enteric fever treatment in children. The drug low cost and its unique dose daily will be very affordable for patients. For decades, antibiotics such as ampicillin, cotrimoxazole and chloramphenicol have been used in the treatment of enteric fever. The emergence of multidrug-resistant *Salmonella* (MDR) strains resistant to ampicillin, cotrimoxazole and chloramphenicol has changed management options. MDR strains of *S. Typhi* have been reported worldwide. Azithromycin has been found to be an effective drug to treat unresolved typhoid fever in children with 92%

efficacy. Studies on azithromycin showed 9.3% treatment failure rates. Two other analysis shows a clinical improvement rate of 83% and 93%. The efficacy of azithromycin in our study was similar to previous studies, ie, 87.27%. In another study by Aggarwal A et al., Assess the safety and efficacy of azithromycin (20 mg / kg / day for six days) for uncomplicated treatment of typhoid fever. The study, which was based on the clinical definition of patients with typhoid fever 110 (92.91%), completed the mean (SD) duration of fever during the presentation 8.9 (5, 6) days. Clinical improvement was seen in 103 (94.05%) patients, and 8 had left the study due to clinical impairment. The average response time was 3.45 ± 1.97 . No serious adverse events were observed. The general well-being evaluated by the investigator and the subjects was good in 96% of the cases at the end of the management. Azithromycin

was found to be safe and effective in the treatment of typhoid fever without complication. Niesta e EFFA et al found that patients with participants with drug-resistant strains were simpler than fluoroquinolone drugs and good results with azithromycin compared with azithromycin compared to other antibiotics for the treatment of enteric fever and concluded that the better performance of azithromycin. The limitation of the analysis was not compared with the other antibiotic. Azithromycin has no side effects of the drug were observed, but considering the other studies mentioned above, it can be considered as a safe drug such as azithromycin and many tests can be performed to compare with other antibiotics. However, this drug low cost and its specific daily dose will be very affordable for patients in our configuration.

CONCLUSION:

The results of the analysis shows that azithromycin is a effective and safe drug in the management of typhoid fever in children.

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