A clinical profile and associated factors with typhoid fever in children at tertiary health care center

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Abstract

Background: Typhoid fever, caused by Salmonella enterica serovar Typhi (S. Typhi) and Salmonella enterica serovar Paratyphi A (S. Paratyphi A), has been estimated to cause approximately 27 million infections each year worldwide Aims and Objectives: To study Clinical profile and associated factors with Typhoid fever in Children at tertiary health care centre. Methodology: This was a cross-sectional study carried out in Children suffered from Typhoid fever at tertiary health care during one-year period i.e. January 2015 to January 2016. All the patient were diagnosed as typhoid fever if presented with fever (temperature>38C) for at least 3 days and their blood culture vielded S. typhi or Typhidot[®] test. During one year total 40 patients were enrolled into study. Result: In our study we have found that The majority of the patients were in the age group of 9-12 i.e.40%, 6-9 were 30%, 3-6-17.5%, <3 were 12.5%. The majority of the patients were Male were 60%, Female were 40%. The most common clinical features were Fever in 87.5%, Vomiting in 72.5%, Diarrhea in 62.5%, Coated tongue in 57.5%, Hepatomegaly in 37.5%, Splenomegaly in 32.5%, Constipation in 22.5%, Abdominal pain in 17.5%. The most common associated factors studied in our study were Unsafe drinking water -72.5%, followed by Un-hygienic food -62.5%, Poor SES -52.5%, Overcrowding -47.5%, Non-availability of medicated soap for hand washing -32.5%, Nails not cut -27.5%, Malnourished-22.5%, Partially immunized / Unimmunized -17.5%, History of travelling -12.5%. Conclusion: It can be concluded form or study that the most common clinical features were Fever, Vomiting, Diarrhea, Coated tongue and organomegaly. The most common associated factors in our study were Unsafe drinking water, Un-hygienic food, Poor SES, Overcrowding, non-availability of medicated soap for hand washing, Nails not cut, Malnutrition, Partially immunization / Immunization, History of travelling etc.

Key Words: Typhoid fever, SES (Socio Economic Status), Overcrowding, Malnutrition, Safe drinking water, unhygienic foods.

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Received Date: 18/03/2017 Revised Date: 06/04/2017 Accepted Date: 11/05/2017 DOI: https://doi.org/10.26611/1014222



INTRODUCTION

Typhoid fever, caused by *Salmonella enterica* serovar Typhi (S. Typhi) and *Salmonella enterica* serovar Paratyphi A (S. Paratyphi A), has been estimated to cause approximately 27 million infections each year worldwide¹. The disease is common in parts of Asia particularly among children². Fatality rates in the preantimicrobial era ranged from 7 – 26% of hospitalised cases^{3,4,5}. The introduction of chloramphenicol, and subsequently, other antimicrobial agents, led to a marked reduction in the occurrence of severe and fatal disease^{4,5}. Despite improvements in treatment, some patients, particularly the very young and elderly, and those receiving inadequate antimicrobial therapy, continue to develop severe and life threatening disease^{5,6,7}. Since the early1990s multidrug-resistant (MDR) strains of *S*. Typhi and *S*. Paratyphi A (resistant to chloramphenicol, trimethoprim/sulphamethoxazole and ampicillin) have not only caused epidemics, but have become endemic across some parts of Asia^{2,8}

MATERIAL AND METHODS

This was a cross-sectional study carried out in Children suffered from Typhoid fever at tertiary health care during

How to cite this article: Sanjay Pundalik Baviskar, Anant Ganpath Bendale. A clinical profile and associated factors with typhoid fever in children at tertiary health care center. *MedPulse International Journal of Pediatrics*. May 2017; 2(2): 12-14. http://medpulse.in/Pediatrics/index.php one-year period i.e. January 2015 to January 2016. All the patient were diagnosed as typhoid fever if presented with fever (temperature>38C) for at least 3 days and their blood culture yielded S. typhior Typhidot[®] test. During one year total 40 patients were enrolled into study. All the necessary data was collected like Age, Sex, Clinical feature, associated factors were recorded like drinking water, Socio Economic Status was calculated by BG prasad's method. food, environmental conditions like overcrowding, personal care like hand washing, nail cutting was noted, Nutritional status was assessed by Growth charts in under five children and BMI in children more than 5 yrs. The immunization history (Routine plus of Typhoid) was assessed by immunization card or by asking history of it to parents or care takers.

RESULT

Table 1: Age wise distribution of the patients						
	Age (Yrs.)	Percentage (%)				
	<3	5	12.5			
	3-6	7	17.5			
	6-9	12	30			
	9-12	16	40			
	Total	40	100			

The majority of the patients were in the age group of 9-12 i.e. 40%, 6-9 were 30%, 3-6-17.5%, <3 were 12.5%.

Table 2: Sex wise distribution of the Patients								
	Sex	No.	Percentage (%)					
	Male	24	60					
	Female	16	40					
	Total	40	100					

The majority of the patients were Male were 60%, Female were 40%.

Tab	le 3	8: D	istril	buti	on	of	the	pati	ents	as	per	the	Clini	cal	feat	ure

Clinical feature	No. (n=40)	Percentage (%)
Fever	35	87.5
Vomiting	29	72.5
Diarrhea	25	62.5
Coated tongue	23	57.5
Hepatomegaly	15	37.5
Splenomegaly	13	32.5
Constipation	9	22.5
Abdominal pain	7	17.5

The most common clinical features were Fever in 87.5%, Vomiting in 72.5%, Diarrhea in 62.5%, Coated tongue in 57.5%, Hepatomegaly in 37.5%, Splenomegaly in 32.5%, Constipation in 22.5%, Abdominal pain in 17.5%.

Accession of factors	No.	Percentage
Associated factors	(n=40)	(%)
Unsafe drinking water	29	72.5
Un-hygienic food	25	62.5
Poor SES	21	52.5
Overcrowding	19	47.5
Non-availability of medicated soap for hand washing	13	32.5
Nails not cut	11	27.5
Malnourished	9	22.5
Partially immunized / Unimmunized	7	17.5
History of travelling	5	12.5

The most common associated factors studied in our study were Unsafe drinking water -72.5%, followed by Unhygienic food -62.5%, Poor SES -52.5%, Overcrowding -47.5%, Non-availability of medicated soap for hand washing -32.5%, Nails not cut -27.5%, Malnourished-22.5%, Partially immunized / Unimmunized -17.5%, History of travelling -12.5%.

DISCUSSION

According to recent WHO estimates the global burden of typhoid is 21 million cases per year, with mortality rate of 1-4%⁹. A vast majority of these episodes occur in developing countries where typhoid fever is endemic. Quickly emerging and swiftly spreading drug-resistant strains have deteriorated the situation by inflating the morbidity and mortality figures¹⁰⁻¹³. With changing expenditure pattern on health, health related behaviors, hygienic conditions and other social trends, a change in risk factors or strength of association of risk factors with typhoid fever can be expected¹⁴. Taking this into consideration, efforts are being made in endemic regions to detect any change in known risk factors or identify new modifiable risk factors¹⁵⁻¹⁷. In our study we have found that The majority of the patients were in the age group of 9-12 i.e.40%, 6-9 were 30%, 3-6-17.5%, <3 were 12.5%. The majority of the patients were Male were 60%, Female were 40%. The most common clinical features were Fever in 87.5%, Vomiting in 72.5%, Diarrhea in 62.5%, Coated tongue in 57.5%, Hepatomegaly in 37.5%, Splenomegaly in 32.5%, Constipation in 22.5%, Abdominal pain in 17.5%. The most common associated factors studied in our study were Unsafe drinking water -72.5%, followed by Un-hygienic food -62.5%, Poor SES -52.5%, Overcrowding -47.5%, Non-availability of medicated soap for hand washing -32.5%, Nails not cut -27.5%, Malnourished-22.5%, Partially immunized / Unimmunized -17.5%, History of travelling -12.5%. These findings are similar to They found Fahad Javaid Siddiqui et al^{18} 88 typhoid fever patients, diagnosed by positive blood culture, between June 1999 and December 2001. Simultaneously, they enrolled 165 age-matched

neighborhood controls. Multivariate analysis done through conditional binary logistic regression analysis technique showed that increasing number of persons in the household (odds ratio [OR] = 1.9; 95% confidence interval [CI] 1.2–3.1), non-availability of soap near hand washing facility (OR = 2.6; 95% CI 1.1–6.3), non-use of medicated soap (OR = 11.2; 95% CI 1.3–97.6) and lack of awareness about contact with a known case of typhoid fever (OR = 3.7; 95% CI 1.6–8.4) were independent risk factors of the disease.

CONCLUSION

It can be concluded form or study that the most common clinical features were Fever, Vomiting, Diarrhea, Coated tongue and organomegaly. The most common associated factors in our study were Unsafe drinking water, Unhygienic food, Poor SES, Overcrowding, non-availability of medicated soap for hand washing, Nails not cut, Malnutrition, Partially immunization / Immunization, History of travelling etc.

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