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Research Article

**ACUTE AND CHRONIC TYPHOID FEVER: A
COMPARATIVE ANALYSIS BETWEEN ADULTS AND
CHILDREN PATIENTS OF HYDERABAD REGION, SINDH,
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Jamshoro²BS-Microbiology, Institute of Microbiology, University of Sindh, Jamshoro³BS-Microbiology, Institute of Microbiology, University of Sindh, Jamshoro**Article Received:** January 2020 **Accepted:** February 2020 **Published:** March 2020**Abstract:**

Among the most common infections in developing is the Typhoid fever which occurs as a result of poor hygienic conditions at multiple levels in food and water management process. It is caused by bacteria known as Salmonella Typhi diagnosed by widal test, typhidot test and blood culture with different sensitivity and specificity levels. This work was conducted in year 2012 in 4 different hospital labs at Hyderabad City of Sindh Province of Pakistan. Typhoid positive cases in males and females and children and adults were separated and similarly the -ve cases too and then compared using chi-square at 0.05 significance level. There were total 285 patients evaluated for typhoid fever out of which 131 cases were positive while 154 cases were negative. There were 122 males and 163 females while there 121 acute and 10 chronic cases. Significant difference was seen between two genders with P-value 0.00002 and similarly the difference was also significant for acute and chronic cases between children and adults p-value 0.00001.

Conclusion: significant difference was observed between males and females, children and adults and acute and chronic cases.

Key Words: Acute Typhoid, Chronic infection, Typhi dot, Salmonella Typhi

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INTRODUCTION:

Typhoid fever or salmonella Typhi Infection is very old in its origin responsible for systemic illness of various intensity resulting into significant morbidity and mortality[1]. Its main mode of transmission is the use of contaminated water, infected food and poor sanitation while appropriate use of antibiotic therapy can reduce the associated morbidity and mortality by combating with bacterial resistance while improvement in sanitation can play a sound preventive role [2]. Vaccine against typhoid as a measure of prevention is very successful Vi-PS which is a Vi polysaccharide for children below 2 years while Ty21a for children >6 years [3]. The WHO recommended TCVs vaccine that is Typhoid conjugate vaccines has shown superiority over the previously mentioned vaccines (Vi-PS and Ty21a) in safety profile as well as effectiveness along with immunogenicity [4]. Vaccination provides a good coverage for 2-5 post vaccination years against this illness while Azithromycin a macrolide antibiotic is the most recommended and prescribed by the physicians as a tool against the MDR typhoid fever [5]. Studies from various corners of the world report the prevalence of typhoid fever ranging from 4% to more than 13% [6-8]. The prevalence of this disease in Pakistan was reported to be 21.04% in a study from Balochistan Province but it may differ in other areas [9]. Asia accounts for 93% (274/100,000) of the global mortality due to typhoid fever with the death rate in Pakistan due to typhoid fever in children is 451.7 per 100,000 cases while India is more than double ahead in this miserly condition from Pakistan with a child mortality of 980 per 100,000 children suffering

from the typhoid fever[10]. This work further explored the gender and age wise comparative view in the typhoid patient population at Hyderabad city of Sindh Province of Pakistan.

METHODOLOGY:

Patients presenting with suspected typhoid fever were included in this study irrespective of age and gender while other cases of fever suspected for RTIs or UTIs etc were excluded and the diagnostic test used was Typhidot. Selection of patient was made through consecutive type sampling from 4 major general hospitals of the Hyderabad city over 3 months' time. Data was filled on a specific study proforma while various comparisons were made using chi-square between various groups on SPSS 22nd version keeping a significance level at p-value 0.05.

RESULTS:

There were 285 cases of fever evaluated 42.80% (122) were males 77(27.02%) of which were positive for typhoid and 45(15.78%) were typhoid negative whereas 57.20% (163) were females out of which 54(18.95%) were positive for typhoid and 109(38.25%) were typhoid negative, the difference was statistically significant at p-value 0.00002 [Table-1, figure- 1]. Over all there were 154 cases negative while 131 cases were positive for typhoid fever in total out of which 13(9.92%) were children with 7(5.34%) and 6(4.58%) as acute and chronic cases respectively while there were 118(90.08%) adults cases 114(87.02%) acute cases and 4(3.05%) as chronic cases with statistically significant difference p-value 0.00001 [Table-2, Fig.-2].

Table.1: Comparison between male and female patients

| S. No | Parameters | Typhoid Positive | Typhoid Negative | Row Total | X ² | p-value |
|-------|--------------|------------------|------------------|-------------|----------------|---------|
| 1. | Males | 77(27.02%) | 45(15.78%) | 122(42.80%) | 24.07 | 0.00002 |
| 2. | Females | 54(18.95%) | 109(38.25%) | 163(57.20%) | | |
| 3. | Column Total | 131(45.97%) | 154(54.03%) | 285(100%) | | |

Table.2: Comparison between child and adult typhoid fever patients

| S. No | Parameters | Acute | Chronic | Row Total | X ² | P-Value |
|-------|--------------|-------------|-----------|-------------|----------------|---------|
| 1. | Children | 7(5.34%) | 6(4.58%) | 13(9.92%) | 24.6 | 0.00001 |
| 2. | Adults | 114(87.02%) | 4(3.05%) | 118(90.08%) | | |
| 3. | Column Total | 121(92.37%) | 10(7.63%) | 131(100%) | | |

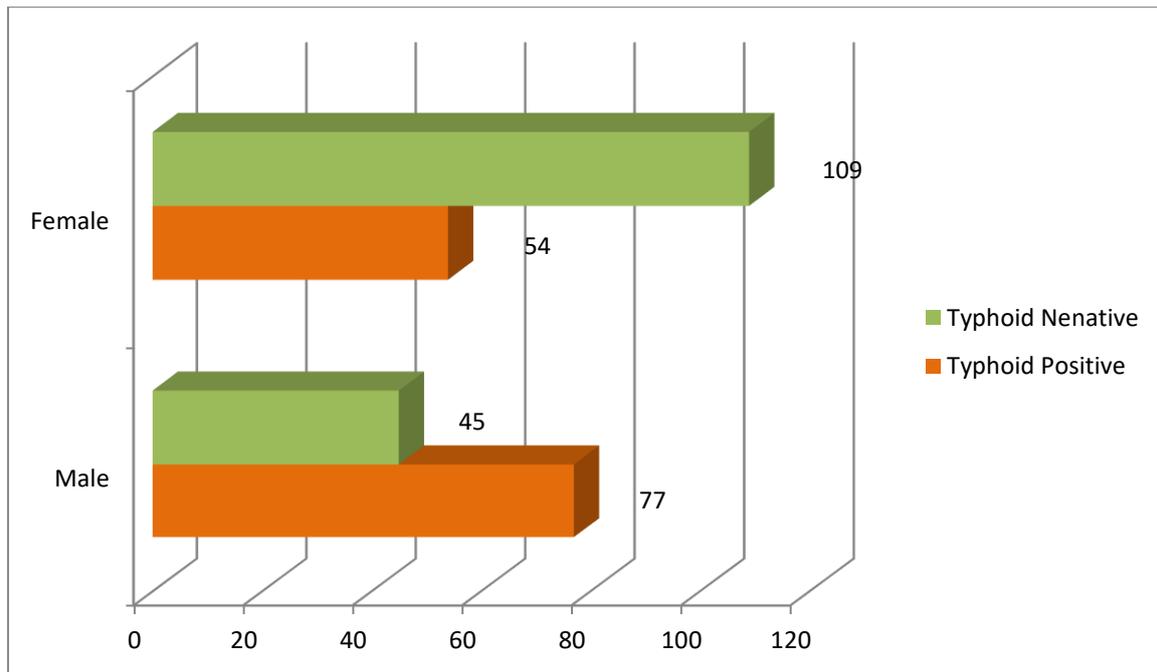


Fig.-1: Bar chart representation of difference between male and female patients

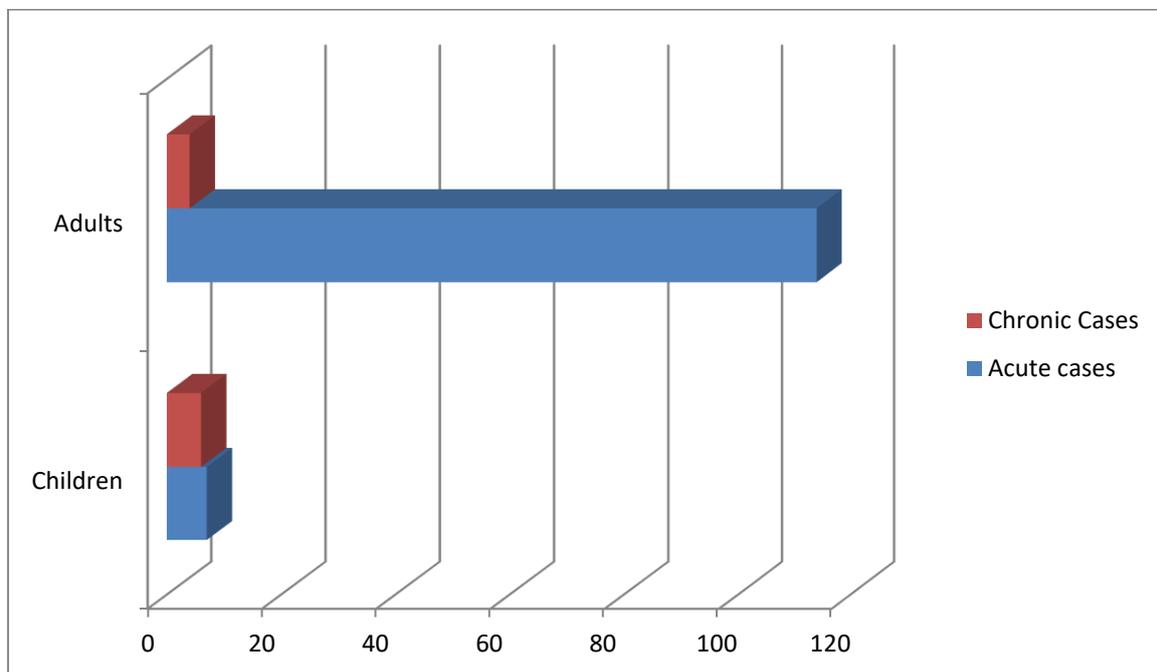


Fig.-11: Bar chart of difference among children and adult patients

DISCUSSION:

Pakistan, India and other neighboring countries all have poor sanitary control specially drinking water and un hygienic conditions responsible for high prevalence of such diseases [11]. The trend for vaccination against Typhoid fever is increased in western countries and thus the associated morbidity and mortality got reduced as well but our indo-Pak region is still waiting for the government to start this vaccination as the majority of the population has low socio-economic status to afford [12]. Faiz Rasul *et al* (20017) also reported that females are more affected by typhoid (52.62%) in comparison

to males counterpart (47.38%) that is consistent to our results similarly they also found that adults are more affected by this infection than children which is also in accordance our results however their 82.46% cases were reported to visit in July to September [13]. Study by Rohit Modi *et al* (2016) on 98 typhoid patients also found the majority of patients 55.10% (54) belonging to female gender while males were reported as 44.90%(44) that was also consistent to present study[14].

Results from Limenih Habte *et al* (2018) were also in agreement with our study results in terms of

female preponderance, They found 55.8% (235) females and 32.8% (138) males victimized by the salmonella typhi and adults were more affected possibly due to the fact adults are more visitors outside the home [6]. There were many pit falls in our study as lack of follow up from these patients, cure rates and any complications and different antibiotics used and their comparative efficacy but it was not the among the study objectives. However it is recommended that detailed study must be conducted covering each and every aspect of this disease. As a matter of common observation private healthcare setups are more effective than the public hospital in services as well as quality but at the cost of money so the common man is only dependent on the government. It is the need of the time to make the public awareness programs to promote the vaccination and sanitation for the prevention of this disease.

CONCLUSION:

Significant difference was observed between males and females, children and adults and acute and chronic cases

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