



CODEN [USA]: IAJPBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.3572307>Available online at: <http://www.iajps.com>

Research Article

**PREVALENCE OF TYPHOID FEVER IN SOUTH PUNJAB
MULTAN REGION**¹Dr Aiman Sattar, ²Dr Nida Maryam, ³Dr Javeria Kabir¹D/O Abdul Sattar, WMO at THQ Taunsa Sharif Distt D G Khan., ²D/O Muhammad Majeed, WMO at CMH Sialkot., ³D/O Muhammad Kabir Qureshi, WMO Cardiac Center Bahawalpur.**Article Received:** October 2019**Accepted:** November 2019**Published:** December 2019**Abstract:**

Health is a challenge for Pakistani Government and Population. There are many diseases which are commonly present in the society and typhoid fever is one of them. It is caused by typhoid salmonella and is widely present in Multan Region. From food and water source it enters in the body and causes fever, pain in abdomen, diarrhea, headache, nausea and some time constipation. The study was conducted in Multan Region from June 2018 to June 2019. The sample size was 180 patients. The age group of the patients was from children to senior citizens and both genders were included. Laboratory reports confirmed typhoid bacteria. Treatment plan for typhoid fever includes antibiotics and supplementary medicines. The incidence of typhoid fever can be reduced if clean and safe drinking water is available in the community and health awareness programs can help to reduce the prevalence rate by adopting hygienic conditions in living places. Vaccination against typhoid fever is available and it helps to decrease the disease morbidity.

Key Words: Salmonella bacteria, hygienic condition, Typhoid fever, sanitation, Antibiotics**Corresponding author:****Dr. Aiman Sattar,**

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Please cite this article in press Aiman Sattar et al., **Prevalence of Typhoid Fever in South Punjab Multan Region.**, Indo Am. J. P. Sci, 2019; 06(12).

INTRODUCTION:

Typhoid fever was widely present in the world in Past but with the passage of time the developed world have adopted many strategies to reduce the diseases by modifying the life style and adopting cleanliness. Improved sanitation and safe drinking water is a step towards better health. Developing countries like Pakistan has the problem of sanitation and access to the clean drinking water is also limited. Typhoid fever was considered fatal in the past but now treatment on time has reduced the mortality. The mode of spread of typhoid bacteria in Pakistan is associated with water and food. The drinking water which is contaminated with municipal waste is considered the main cause of disease. The population unhygienic life style and poor hand washing technique has also increased the risk of getting typhoid. The persons without washing hands with soap or sanitizers can become cause for spread of bacteria to healthy population by handling food and water. The disease develops gradually after the bacteria intake and the symptoms of the typhoid observed in the patients were fever, abdominal pain, headache and diarrhea. Typhoid is a public health problem and its prevalence can be reduced by adopting clean life style, good hygienic condition in the society, availability of clean drinking water and washing food before use can help to reduce the risk of getting disease.

The typhoid is caused in the population by Salmonella typhi and the source of bacteria may be the food or the contaminated water consumption. The frequent high grade fever and muscular pains are observed in the patients of typhoid. It is more common among children because of their unhygienic habits of washing hands after going to toilet.

Typhoid can be controlled in the areas where its outbreak is frequent by providing the underground sanitation system and also by providing access to clean drinking water. Laboratory tests are used to confirm the bacteria and also the carriers of bacteria can be identified.

The disease is curable and can be treated effectively but if the condition becomes chronic it can be fatal for the patient health.

METHODOLOGY OF RESEARCH:

The aim of the study was to identify the prevalence of the typhoid fever in Multan region and the causes of the spread of disease. The patients with confirmed typhoid bacteria from histopathology reports were included .Total sample size was 180 patients and the study time period was from June 2018 to June 2019.The study was conducted in Nishter Hospital Multan. The patients were from the areas which were under developed having poor sanitation condition and availability of clean drinking water was limited. They were suffering more as compared to the people who were living in good conditions. Children were at high risk and accounted in high frequency in study.

RESULTS AND DISCUSSIONS:

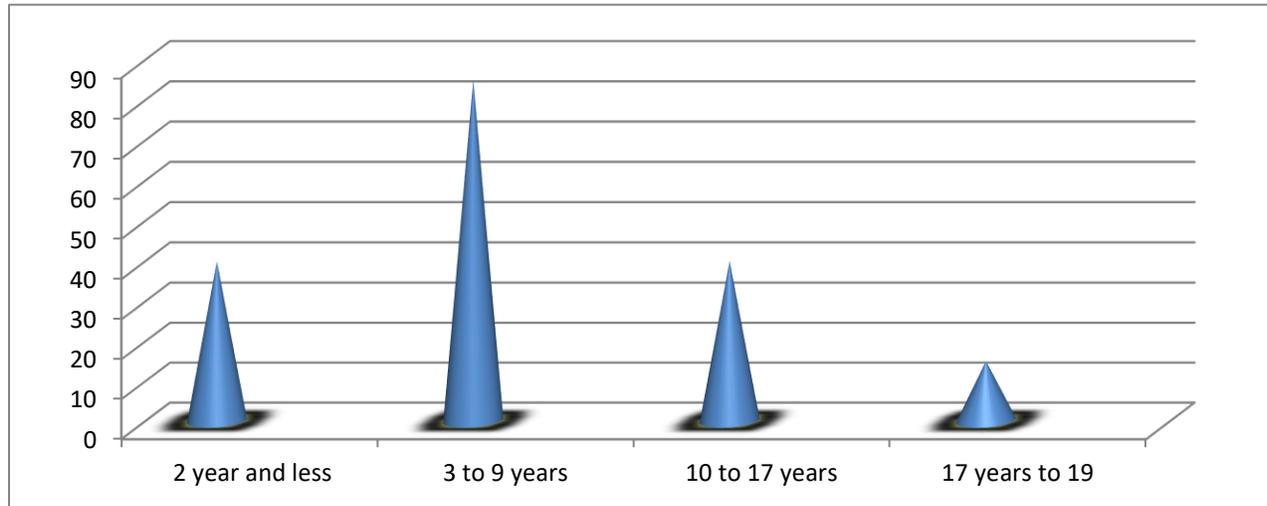
Multan is hub of south Punjab .Although it is big city but its slums and vicinity areas have sanitation problem and lacking basic facilities of life like access to clean drinking water, basic infrastructure and paved roads. The poor hygienic condition and poor living standard are the causes of many diseases and typhoid fever is one of the common diseases in such area. Causes of transmission of typhoid bacteria are food and water source. Food when used unwashed in raw form or it was cooked or handled by the typhoid carrier, can cause the transfer of bacteria to health persons and also drinking of contaminated water can become the cause of bacteria transfer. Literacy rate and living standard in slum is poor. The children grow up in unhygienic condition and they are at higher risk of getting the disease. In the study children were found more vulnerable to disease. In table 1 the distribution of age group of the patients is presented. From the table 1 it is clear that the children less than two years accounts 22% of the total and from 3 to 9 years it accounts 47% of the total sample and from the table it is obvious as the age grows the diseases risk reduces. This might be with age children become aware of washing hands properly and maintaining the personal hygiene.

Table 1 Age group of Participants

Age of the participants	No#	Percentage
2 years and less	40	22%
3-9 year	85	47%
10- 17 years year	40	22%
17 year and above year	15	8%

Graphic illustration indicates that children are suffering more due to their poor living standard and handling of food

and water



After clinical and physical examinations the laboratory tests were suggested to the patients for confirmation of the disease and making treatment plans according to the symptoms.

The prescription of antibiotics depends upon the age, condition and weight of the patient.

During the clinical examination following conditions were present in almost all the patients and are considered the common signs for typhoid disease.

Table 2 Symptoms of typhoid fever

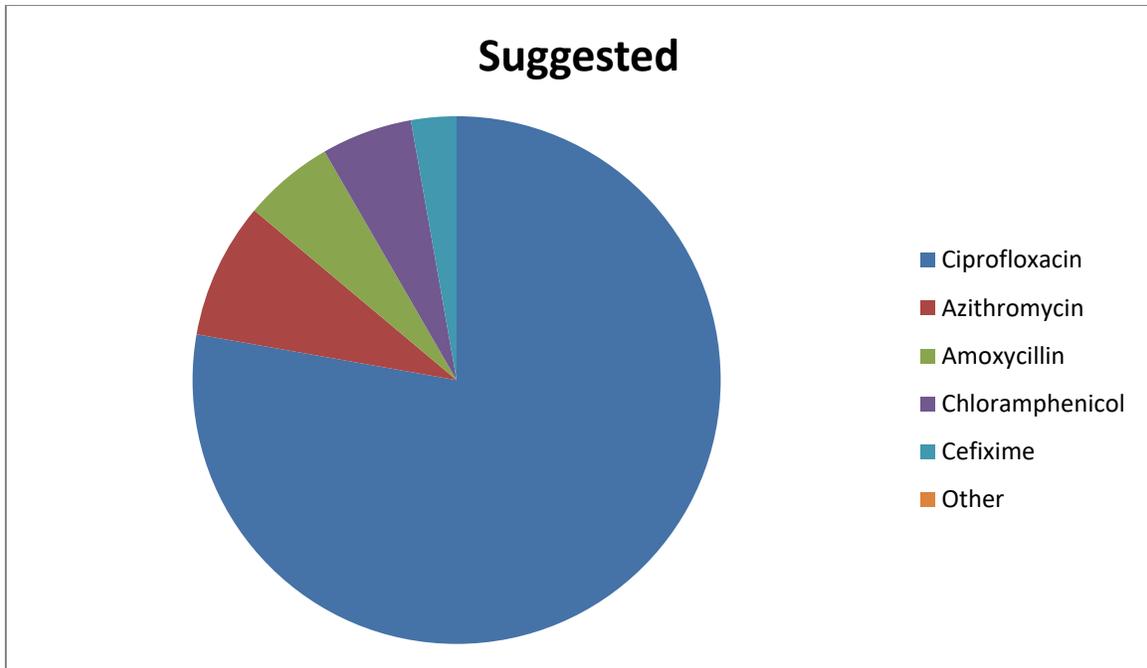
Symptoms	Observed	Not observed
Fever High grade	yes	
Nausea/Vomiting		No
Presence of Headache	yes	
Anorexia		No
Pain in Abdomen	yes	
Presence of Constipation	Yes	
Complain of Diarrhea	yes	
Perforation of intestine		No
Complain of Bradycardia		No
Red spots/rash	Yes	

The common antibiotics given by the consultants and health professionals were as follow

Table 3 Use of Antibiotics

Antibiotics Option	Suggested	Percentage
Ciprofloxacin	140	77%
Amoxicillin	15	8.3 %
Azithromycin	10	5%
Cefixime	10	5%
Chloramphenicol	5	2%
Other	0	0

Following graph shows the antibiotic suggestion by the physicians to the patients suffering from typhoid.



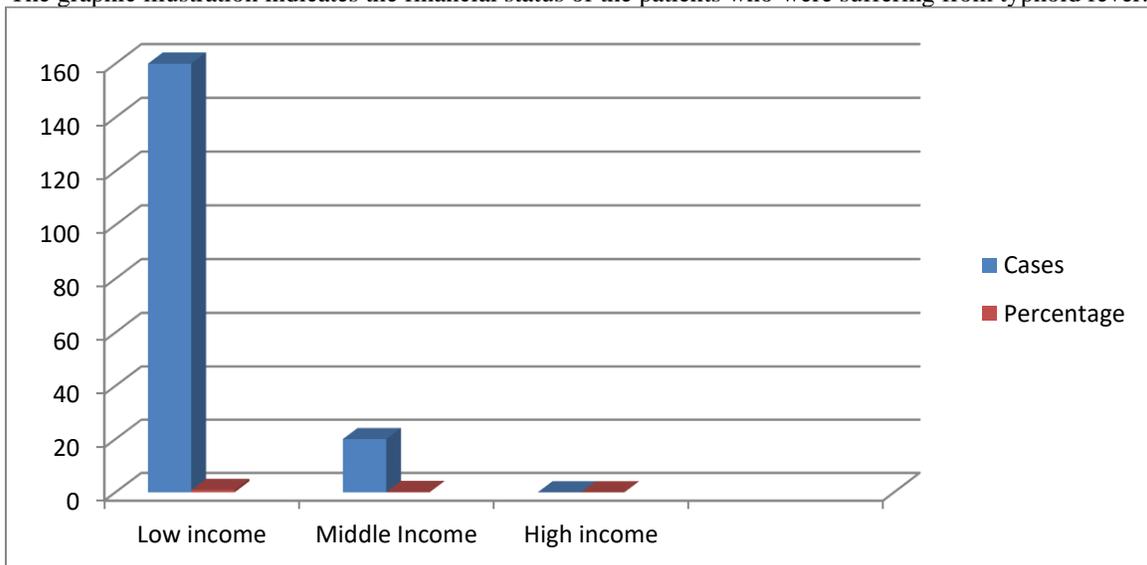
Personal information of the patients was also noted with their consent. The patients who seek medical health from public sector hospitals usually belonged to low income and from middle income group. They were living in condition which depicts their poverty and source of causing many diseases like typhoid.

Access to clean drinking water was limited and sanitation system was also lacking in their areas. From the table 3 it is clear that patient’s majority belonged to poor income group and was living in unhygienic conditions.

Table 3 Financial Status of the patients

Income level	No#	Percentage
Low income group	160	88%
Middle Income group	20	12%
High income	0	0%

The graphic illustration indicates the financial status of the patients who were suffering from typhoid fever.



From the study it was made clear that the people who came with complain of typhoid fever were from lower income group and also their education level was low. They were living in poor hygienic environment and also they have adopted bad habits which were causing typhoid fever. They were not washing hands with soap after going to toilets and also they ate raw food without washing it. Open drain system has made the water polluted and makes it unsafe for drinking. In the survey all the habits associated with cleanliness were included and when

asked from the respondents it was found that they were lacking in many good habits. Cleanliness is the main concern of Muslim community and one should practice it at individual and at collective level. Government should also provide safe drinking water to community and also make sure improvement in sanitation and infrastructure for better health of the citizens. Government also provides vaccination for typhoid when its outbreak is reported .Education and hygienic awareness programs can help to reduce the risk of outbreak and morbidity of the disease.

Table4 Presence of Healthy Habits among patients

Factors	Present	Missing
Hands washing	30 %	70%
Soap use for hand wash	15%	85%
Availability of Clean Drinking Water	30%	70%
eating raw food	60%	40%
Eating food cooked at home	80%	20%
Eating food cooked outside	20%	80%
Use of washed food	30%	70%
Toilets access	45%	55%
Sanitation	40%	60%
Cleanliness of external environment	30%	70%
Hygiene of patient	25%	75%
Medical health education	10%	90%
health facilities Availability	60%	40%
Education Availability	70%	30%

CONCLUSION:

From the study it was concluded that clean environment with basic health facilities can ensure the good health of the community. Typhoid fever from the society can be controlled with the help of vaccination program, awareness campaign about personal and external hygiene and drinking clean water.

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