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ENTERIC FEVER INCIDENCE AND ITS ASSOCIATION WITH SIGNS, SYMPTOMS, CLINICAL OUTCOMES AND AGE OF THE AFFECTED CHILDREN

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Abstract:
Objective: *The objective of our research is to find out the appearance of enteric fever of usual pattern with respect to age in children.*
Methodology: *We carried out a planned research at Services Hospital, Lahore (February 2016 to March 2017) on the patients in the age bracket of 2 – 15 years and suffering from fever for more the than four days without gender discrimination. For diagnosis purpose, two test CBC (Complete blood count) and (typhi dot) were carried out for all patients. Along with positive serology, Patient Performa was filled containing information of patient (clinical signs, biodata, symptoms etc.)*
Results: *Total number of patients in our study was sixty. Ninety percent of patients fifty-four in numbers present fever along with ninety-two percent and fifty-five in numbers show poor appetite. Forty patients (66%) had a fever of low-grade range from 100° F to 102° F and twenty patients (33%) were suffering from high-grade fever above 102 °F and number of patients had white coated tongue were fifty-four (90%). Forty-four (73%) and twelve (20%) patients were declared with Hepatomegaly and Hepatosplenomegaly respectively. As compared to leucopenia Leukocytosis was more usual in children.*
Conclusion: *Poor appetite and low-grade fever are general enteric fever symptom and in hospitals and clinics white coated tongue with hepatomegaly was normally examined for enteric fever. Thrombocytopenia is the expected procedure in the laboratory.*
Keywords: *CBC (Complete blood count), Clinical Presentation, Leukocytosis, Poor Appetite, Enteric Fever and Hepatomegaly.*

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INTRODUCTION:

Bacteria Salmonella typhi, as well as S. Para typhi (A, B, C), is the main cause of the Enteric fever. salmonella bacteria are human infector and infect a human through oro-faecal route [1]. Almost sixteen million people every year become a victim of enteric fever and only south-east Asia contribution is seven million cases out of (16) million, become the reason of 0.6 million casualties every year [2]. It is fact that ninety-three percent of enteric fever distraction appears in south-east Asia causing huge deadliness and misery [3]. Pakistan is also affected by enteric fever due to part of that region [4]. In Pakistan exact ratio of enteric fever, victims are not known due to insufficient research, research papers which are published locally show that enteric fever is a big health issue in Pakistan and its expansion considered to be comparable with south-east Asia. Intense victims with enteric fever are children. Both ages (above &below 5 years) of children are parallel affected in primitive areas. Unhealthy livings, the inferior socioeconomic status of the huge population, non-availability of compact water supply to large zones are major causes, responsible for the spread of fever. Modification of resistance against the friendly virus, spoil, and overwork health care system is an additional warning of casualties and bitterness and makes hurdles in disease control system [8,9]. By early diagnosing of disease and authentic treatment, the doctor could help in controlling of enteric fever. The delay diagnosing of enteric fever could result in diverse health issues and prolong duration [10]. A standardized tool used for the purpose of diagnosing enteric fever are PCR and blood culture and peoples belong to the inferior socio-economic status of the endemic area are not able to afford these tests. however, we totally depend upon the doctor for the diagnostic purpose [11]. The medical staff of third world countries where blood culture and PCR tools are not available should have knowledge of enteric fever laboratory complication and common symptoms shown by different age patients otherwise diagnosis process gets prolong or slip and patient of another disease may get an unnecessary dose and become habitual of drugs. So, our research based upon enteric fever, laboratory as well as clinical features of positive typhi-dot cases presented in hospital.

METHODOLOGY:

We carried out a planned research at Services Hospital, Lahore (February 2016 to March 2017) on the patients in the age bracket of 2 – 15 years and suffering from fever for more the than four days without gender discrimination. Omission criteria were a sore throat with fever, ear discharge, seizures, viral exanthema, pneumonia, burning micturition. After clarifying the objective of the study, we also take written approval from guardians. For purpose of CBC, typhi-dot along with differentials, the blood sample(3cc) was drawn from patients and send to the clinical laboratory. No payment was taken from a patient in lieu of tests. Patients having positive typhi-dot were additionally checked for instant symptoms as well as laboratory symbols. Data regarding patient complaints, laboratory reports, biodata, detailed examination information were filled on Performa. Below (40/kcal) per KG of caloric intake in one day was declared as poor appetite. Tongue having 2/3rd of it as the whitish coat was validated as the white coated tongue. Patient having a fever greater than 102 degrees Fahrenheit set as high-grade fever and below 102 degrees and greater than 100 degrees, Fahrenheit set as low-grade fever. Thrombocytopenia was declared if the platelet count was less than 0.15 million. Malaria MP and detailed analysis of urine for urine tract infection were conducted for those cases having negative typhi-dot. Data feeding as well as analyzing along with statistical package was carried out for SPSS [10]. Calculations of percentage plus frequencies were carried out for categorical and qualitative variables together with symptoms, laboratory results, age group, physical sign, and gender. calculation of standard deviation along with mean was carried out for purpose of age.

RESULTS:

Total number of patients in our study was sixty who full fill our required criteria. Out of sixty patients, thirty-four (57%) and twenty-six (43%) were male and female respectively. (60.25) months was the average age of presentation. Six to nine years of children's have common symptoms and sign of enteric fever (Table – I). Intestinal perforation and poor appetite were least as well as most usual complaints respectively. Total of four patients required admission, out of four three patients has prolonged fever, as well as one patient, suffer from enteric hepatitis. Leftover patients with positive serology were a deal as outdoor cases. White coated tongue was general most clinical finding along with rose spot as least common (Table – II). All patients sixty in number were not given vaccination against enteric fever. General risk element established in our enteric fever patients. Thirty-six (60%) and twenty (33.33%) patients were presented as leukocytosis and leucopenia respectively. Table – II highlight laboratory finding.

Table – I: Age and Physical Symptoms

Age and Physical Symptoms		Number	Percentage
Age Group	2 to 5 Years	16	26.66
	6 to 9 Years	32	53.33
	10 to 13 Years	12	20.00
Physical Symptoms	White Coated Tongue	54	90.00
	Low Grade Fever (100 F - 102 F)	40	66.00
	High Grade Fever (> 102 F)	20	33.00
	Hepatomegaly	44	73.33
	Splenomegaly	36	60.00
	Hepatosplenomegaly	12	20.00
	Jaundice	2	3.33
	Pallor	2	3.33
	Rose Spots	0	0.00

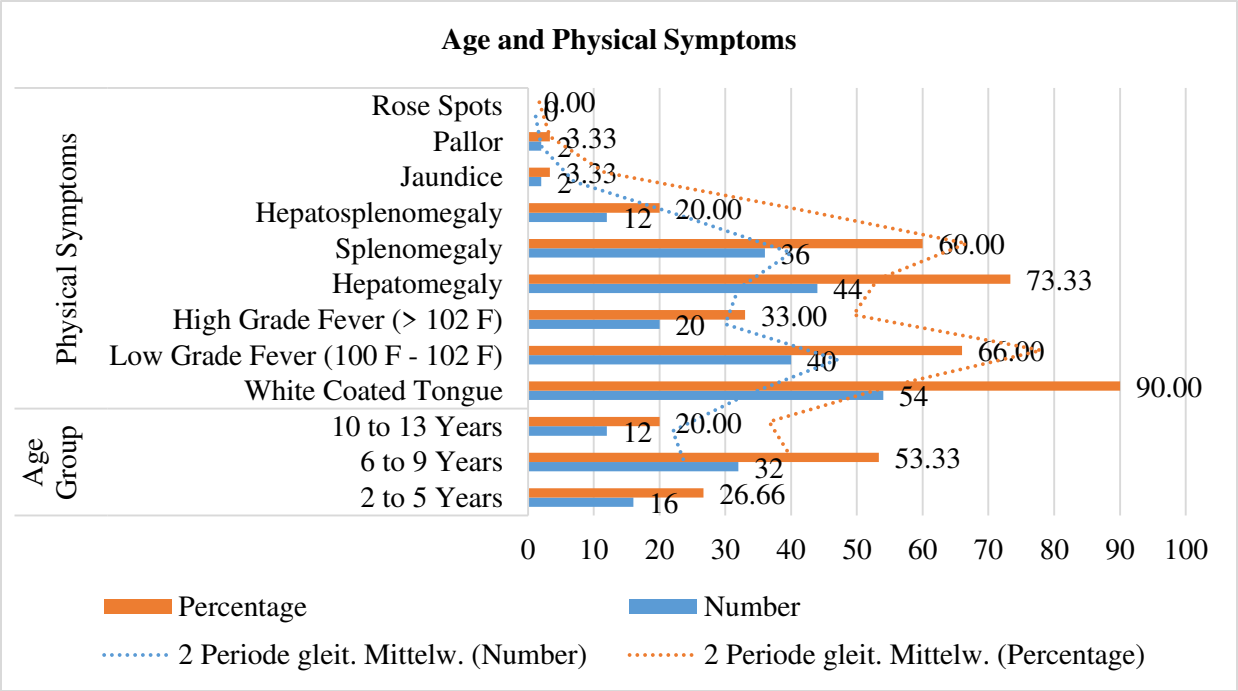


Table – II: Clinical Outcomes

Clinical Outcomes	Number	Percentage
TLC>11000 / cumm	36	60
TLC>5000 / cumm	20	33.33
Hb≤11 g/dl	18	30
Platelets<150,000 / cumm	50	83.33
SGPT>45 IU / L	24	40

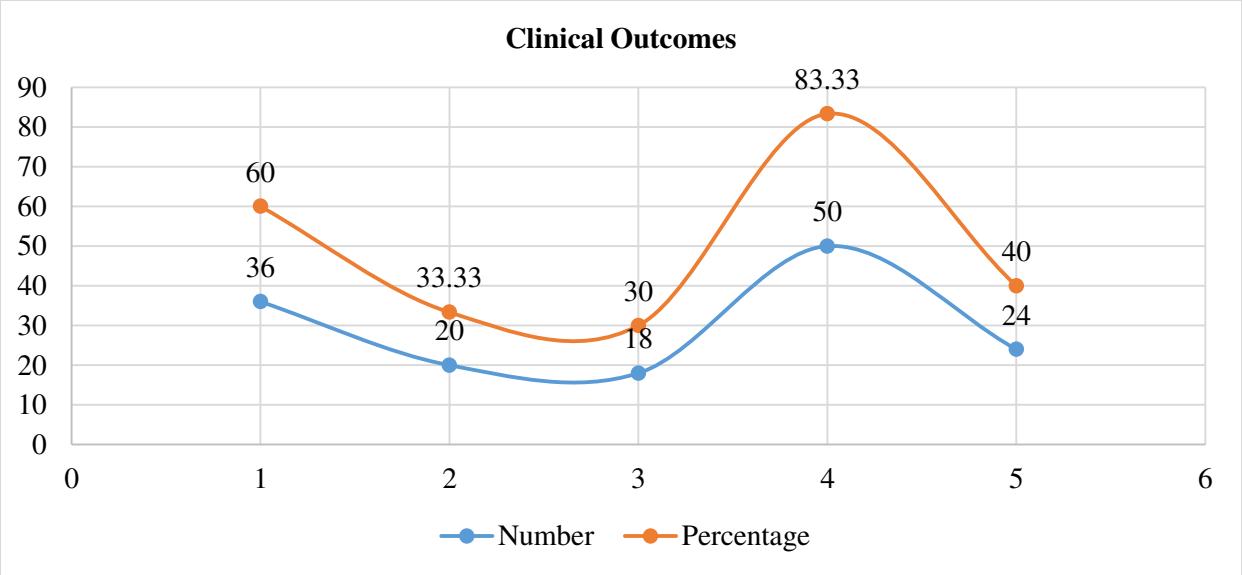


Table – III: Symptoms in Children

Symptoms	Number of Children
Poor Appetite	92
Fever	90
Vomiting	85
Gastroenteritis	76
Abdominal Pain	62
Headache	45

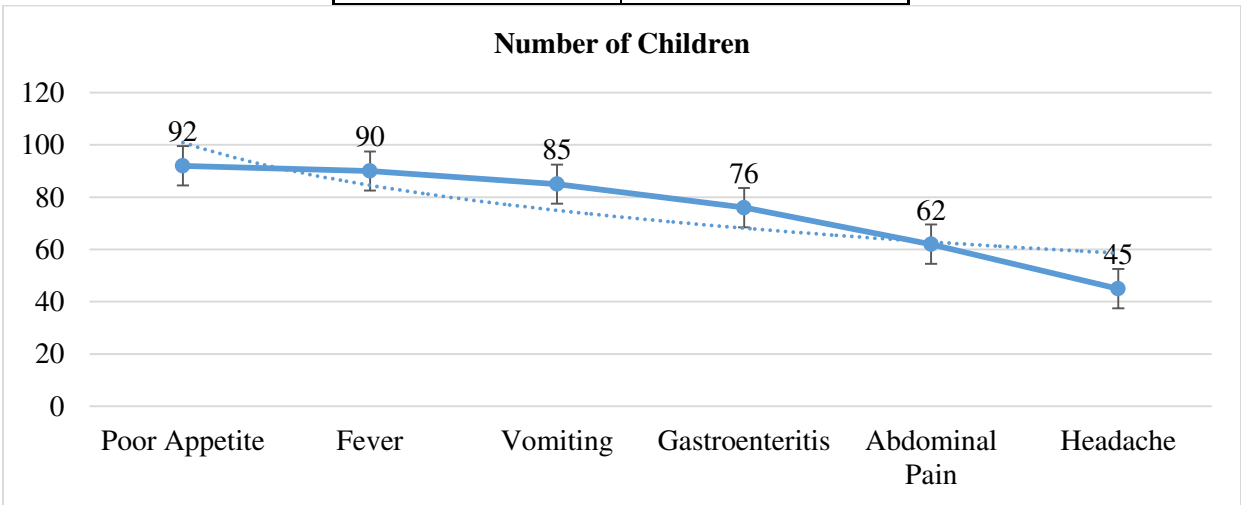
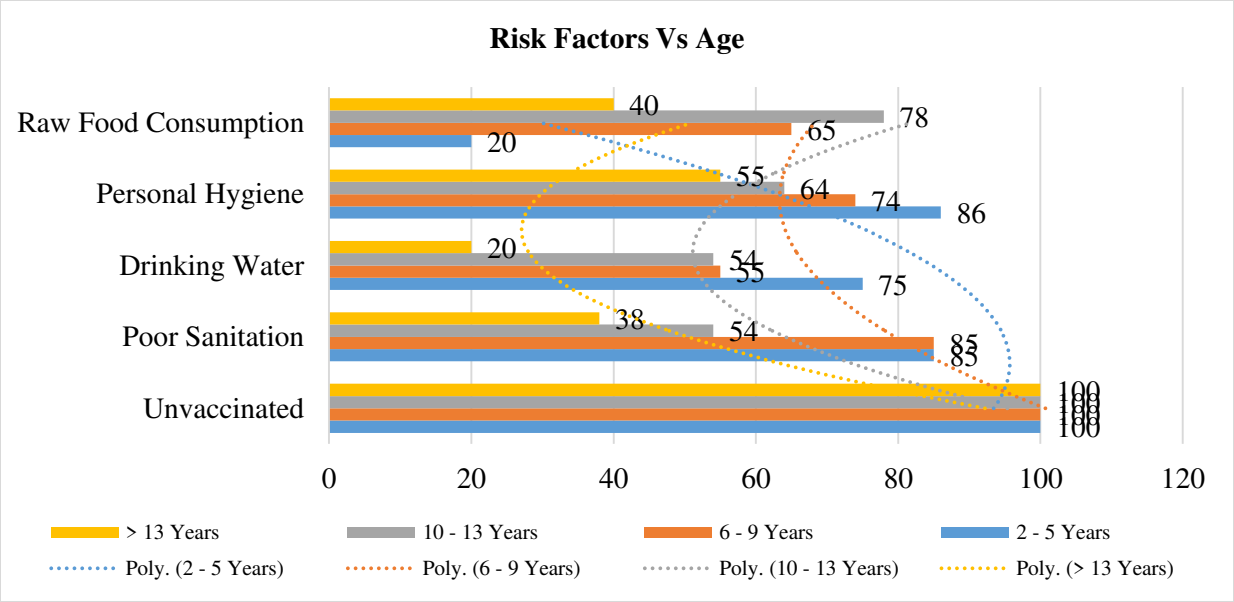


Table – IV: Age Wise Distribution of Risk Factor

Risk Factor	2 - 5 Years	6 - 9 Years	10 - 13 Years	> 13 Years
Unvaccinated	100	100	100	100
Poor Sanitation	85	85	54	38
Drinking Water	75	55	54	20
Personal Hygiene	86	74	64	55
Raw Food Consumption	20	65	78	40



DISCUSSION:

Enteric fever is a general and most important reason for malaise and bitterness between children having age one and five-year disregard of gender in native area. In native areas, the exposition of enteric fever is diverse and dramatic in children as identified in the literature. Clinical examination and diagnosis process of typhoid might be a difficult task. In endemic areas with the objective of patient triage and diagnostic an algorithm could be prepared. In native areas, the algorithm consists of associations, assumptions, conclusion, connection for diagnostic and management. our research shows slight dominance in connection with a male to female ratio 1.30:1 and similar types of outcome were recognized by Verma along with his colleague's study [11]. According to the result of Prajapati Bet al also highlighted that boys were early affected than girls by enteric fever [12]. Our research data demonstrate that cases of typhoid in children of preschool are almost near to that for school-aged boys. Further studies indicate that in high influence area the cases of typhoid in children having age (2 to 5) years was similar in magnitude to that children's having age (5 to 15) years [13, 14]. Our study results show that fever along with poor appetite was general most complaint prevailing in children. These results are rational with recent studies results who also presenting fever as a major complaint in children [15, 16]. However, in our research, we further subdivided fever into two categories as low and high-grade fever and established that as compare to high-grade fever low-grade fever is more casual which deviate from many analysis [17, 18]. Our research data presented that white coated tongue was most general clinical finding succeed by hepatology. This occurs simultaneously with the findings of Butt as well as Abdullah [19, 20]. Meantime other studies presented that Hepatosplenomegaly along with splenomegaly is usual which variance to ours [21]. Potentiality of our results is that we conducted a study on children having five years of age and such age of children do not well progress reticuloendothelial system so they can demonstrate odd as results of our research displayed. Rose spot was also not diagnosed in any patient. In our research total of four patients got admitted, only one patient suffers from enteric hepatitis rest three patients were admitted without any serious issue just because prolonged fever does not reciprocate with oral medication. This proposed that diversities of enteric fever are not casual in children and our study results are similar to the results discover by Kelly-hope and his colleagues [22]. Ambiguous abdominal pain beyond tenderness was diagnosed in huge children. Hazard aspect for fever of typhoid was not our goal but we examine all these as a secondary product in our research and analyze that concerning to hazard aspects our results are correlated with the previous studies and food street consumptions, poor hygiene along with sanitation were casual factors [23 – 25]. As in our research we analyze hazard aspects with respect to age group and constitute that for entire age group vaccination was general hazard factor along with two to five and six to nine year of children are affected with poor sanitation. Ten to above thirteen years of children are equally affected by the utilization of raw food. Our research does not differentiate low as well as high-income families as acknowledge in Sur D et al study [26].

CONCLUSION:

poor appetite along with low-grade fever are general enteric fever symptom and in hospitals and clinics white coated tongue of children with hepatomegaly was normally examine for enteric fever. Thrombocytopenia is the expected procedure in the laboratory.

REFERENCES:

1. Vollaard AM, Ali S, van Asten HAGH, Widjaja S, Visser LG. Risk factors for typhoid and paratyphoid fever in Jakarta. JAMA 2004; 291: 2607–15.
2. Kelly-Hope LA, Alonso WJ, Theim VD, Anh DD, Canh DG. Geographical distribution and risk factors associated with enteric diseases in Vietnam. Am J Trop Med Hyg2007; 76:706–12.
3. Lubgy SP, Faizan MK, Fisher-Hoch SP, et al. risk factor for typhoid fever in an endemic setting, Karachi, Pakistan. Epidemiol Infect. 1998; 120: 129-38.
4. Gasem MH, Dolmans WM, Keuter MM, Djokomoeljanto RR. Poor food hygiene and housing as risk factors for typhoid fever in Semarang, Indonesia. Trop Med Int Health2001; 6: 484–90.
5. Whitaker JA, Franco-Pardes C, del Rio C, Edupuganti C. Rethinking typhoid fever vaccines: implications for travelers and people living in highly endemic areas. J Travel Med 2009; 16: 46–52.
6. Sur D, Ali M, Seidlein LV, Manna B, Jacqueline L Deen, Camilo J Acosta et al. Comparisons of predictors for typhoid and paratyphoid fever in Kolkata, India. BMC Public Health 2007, 7:289
7. Siddiqui FJ, Haider, Bhutta ZA. Risk factors for typhoid fever in children in squatter settlements of Karachi: A nested case–control study.2008; 1: 113-20,
8. Khan MI, Ochiai RL, Soofi SB, Von-Seidlein L, Khan MJ, Sahito SM, et al. Risk factors associated with typhoid fever in children aged 2-16 years in Karachi, Pakistan. Epidemiol Infect. 2012; 140(4):665-72.
9. Siddiqui FJ, Rabbani F, Hasan R, Nizami SQ, Bhutta ZA. Typhoid fever in children:
10. Kanungo S, Dutta S, Sur D. – Typhoid and paratyphoid fever in India J Infect Developing Countries 2008; 2: 454-60.
11. Kothari A, Pruthi A, Tulsi D. Chugh. The Burden of Enteric Fever. J Infect Developing Countries 2008; 2: 253-9.
12. Verma S, Thakur S, Kanga A, Sing G, Gupta P. Emerging salmonella para typhi A.
13. Prajpati B, Rai Gk, Rai SK, Upreti HC, Thapa M, Singh G, et al. Prevalence of salmonella typhi and para typhi infection in children: a hospital-based study. Nepal Med Coll J.2008; 10:238-41.
14. Mubeena RS, Saleem AK, Ameena RS. Prevalence of enteric fever in Karachi. Infect dis J Pak 2006; 15; 103-5.
15. Fangtham M, Wilde H. Emergence of salmonella para typhi A as a major cause of enteric fever: need early detection, prevention measures, and effective vaccines. J Travel Med 2008; 15:344-50.
16. Walia M, Gaind R, Paul P, Mehta R, Aggarwal P, M Kalaivani et al. Age related clinical and microbiological characteristics of enteric fever in India. Trans R Soc Trop Med Hyg 2006; 100: 942-
17. Mandal S, Mandal M, Pal NK. Antibiotic resistance of Salmonella enterica serovar Para typhi A in India.
18. Rahman AKMM, Ahmad M, Begum RS, Ghosh AK, Hossain MZ. Multidrug resistant typhoid fever in Children. J Dhaka Med Coll 2010; 19: 135-43.
19. Black RE, Cisneros L, Levine MM
20. Abdullah FE, Haider F, Fatima K, Irfan S, Iqbal MS. Enteric fever in Karachi: current Antibiotic susceptibility of salmonella isolates. Jcpsp 2012; 22:147-50.
21. Butt T, Ahmad RN, Salman M, Kazmi SY. Changing trends in drug resistance among typhoid salmonellae in Rawalpindi, Pakistan. East Mediterr Health J 2005; 11:1038-44.
22. Miller SI, Pegues DA. Salmonella Species, Including Salmonella typhi in: Madell GL., Bennett JE, Dolin R. Principles and Practice of Infectious Disease. 5th ed. N Y: Churchill Livingstone.2009; 2013-23.
23. Crump JA, Luby SP, Mintz ED. The global burden of typhoid fever. Bull World Health Organ. 2004; 82:346–53.
24. Ochiai RL, Acosta CJ, Holliday MC, Baiqing D, Bhattacharya SK, Domi Typhoid Study Group. A study of typhoid fever in five Asian countries: disease burden and implications for controls. Bull World Health Org.2008; 86(4):260 8.
25. Butt T, Ahmad RN, Salman M, Kazmi SY. Changing trends in drug resistance among typhoid Salmonellae in Rawalpindi, Pakistan. East Mediterr Health J.2005; 11:1038-44.
26. Sinha A, Sazawal S, Kumar R, Sood S, Reddaiah VP, Singh B, et al. Typhoid fever in children aged less than 5 years. Lancet 1999; 354:734-7.