Changing Spectrum of Typhoid

Pages with reference to book, From 50 To 52

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Abstract

To determine the changing spectrum of typhoid fever, a study was conducted on 240 cases of typhoid fever, admitted over a period of 4 years. The classical 'Stepladder fever' and 'relative bradycardia' were less commonly seen. Presentation as hepatitis, psychosis, meningism, myocarditis, polyneuropathy and diarrhoea were encountered in a small number of patients. Reversible proximal myopathy occurred in four patients and all of them recovered completely over a period of 2-3 weeks. The total leukocyte counts were within normal range in most of the cases. Bone marrow cultures were positive in all untreated and partially treated patients. All strains of Salmonella typhi in this study were sensitive to ofloxacin ceftriaxone and ciprofloxacin. (JPMA 46:50, 1996).

Introduction

Enteric fever has a worldwide distribution[1]. It is particularly prevalent in developing countries, due to poor public health education and failure to maintain personal and communal hygiene[2]. Although an improvement in the environmental sanitation has reduced its incidence in industrialized nations, it is still endemic in our country[3]. Typhoid is a severe debilitating and potentially life threatening illness. It is generally one of the most challenging problems in medical therapeutics. As it results in high morbidity and mortality, reappraisal of presentation, course, complications and treatment is required[4]. Many reports from developing countries show that the clinical presentation1 diagnosis and treatment of typhoid have significantly altered.[1,4,5]

Patients and Methods

To. determine the changes in clinical spectrum of typhoid, all patients diagnosed primarily as typhoid fever in medical units of mh Postgraduate Medical Centre, Karachi over a period of 4 years (1989-1992) were included in this study. Criteria ofinclusion was eitherpositive blood culture or four fold rise in the antibodies titre. A detailed account of clinical features was recorded on a proforma, especially designed for this purpose.

Laboratory tests included a complete blood picture, urine analysis, blood urea, serum creatinine, blood smear for malarial parasite and liver function tests. Widal test was performed on admission and repeated after two weeks. Only 95 samples were cultured due to limited resources and non-availability of sufficient facilities. Blood and bone marrow specimens were cultured simultaneously to determine the comparative yield of Salmonella typhi or paratyphi. Five ml of blood was collected in thioglycolate broth. Bone marrow aspiration was done according to Keeling's methods[6]. About 1 ml of bone marrow aspirate was directly transferred to the culture bottle containing 25 ml of 'brain heart infusion broth'. Culture bottles were incubated at 3 7°C, for seven days. In the intervening period, sub-cultures were made every 24 hours (upto 72 hours) on sheep blood agar, MacConkey's agar and Salmonella Shigella agar plates and then incubated at 37°C on the 7th day of incubation. Bacilli were further identified according to the standard techniques[7]. Antimicrobial sensitivity pattern of all isolates was done by standard disc diffusion method[8]. The susceptibility or resistance was judged on the basis of

measurement of zones of growth inhibition around individual discs.
The significance of difference between two groups was calculated according to Hill s method[9].

Results

A total of 204 (130 males, 74 females) proven cases of typhoid were included in this study The maximum number of patients were inthe age group 5 to 20 years and 70%belonged to the poor socio-econornic class. Patients reported throughout the year (1991) with a peak in May (14%) and June (16%) A second peak was noted in October and November (Figure).

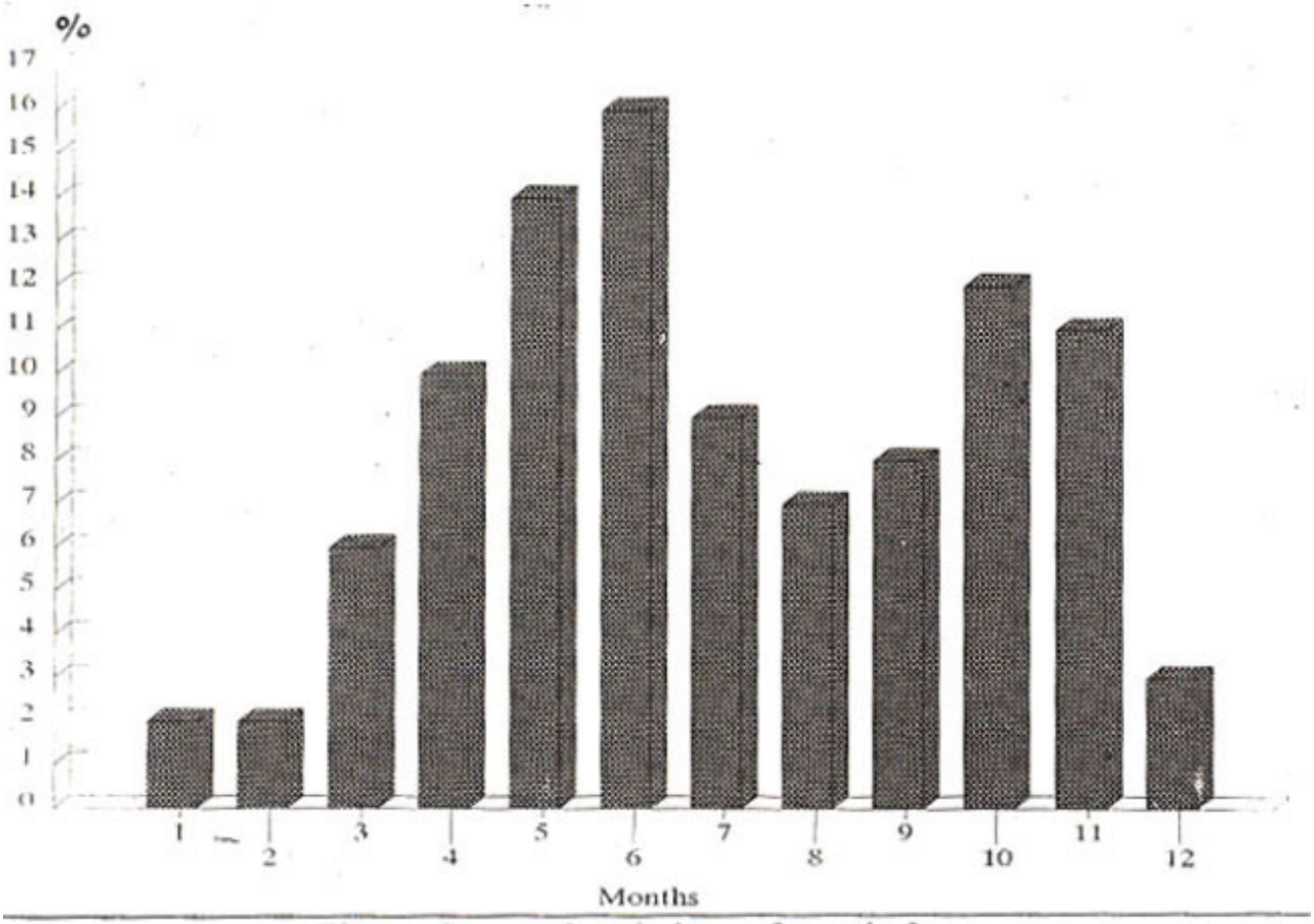

Figure. Seasonal variations of enteric fever.

The mode of onset of entenc fever was insidious in 60% and sudden with high grade fever in 22% cases. The rest presented as gastroenteritis, toxic shock, hepatitis, bronchitis, psychosis and meningitis. All patients had pyrexia ranging front 100°F to 103°F

Table I. Frequency of common symptoms and s

Clinical feature	No of cases	%
Fever	204	100
Headache	144	71
Nausea and Vomiting	142	70
Abdominal discomfort	135	66
Diarrhoea	82	40
Loss of appetite	82	40
Loss of weight	71	35
Bodyache	50	24
Constipation	47	23
Cough	43	21
Bleeding per rectum	40	20
Burning micturition	29	14
Confusion	17	8
Epistaxis	17	8
Joint pain	15	7
Lethargy	14	7
Chills	12	6
Palpitations	7	3
Neck pain	6	3
Pain in right hypochondrium	6	3
Muscle cramps	4	2
Vertigo	4	2
Temperature	104	100
Splenomegaly	102	50
Relative bradycardia	71	35
Coated tongue	70	34
Tender abdomen	61	30
Hepatomegaly	58	28
Toxaemia	56	27
Dehydration	41	20
Tachycardia	30	15
Jaundice	12	6
Lung crepitation	11	5
Rose spots	8	4
Abdominal distention	8	4
Altered consciousness	7	3
Meningeal irritations	6	3
Lymphadenopathy	4	3
Anaemia	4	3
Inability to rise from squatting (Proximal myopathy)	4	3

Table I shows the frequency of symptoms and signs of typhoid while Table II gives the details of complications (23.5%).

Table II. Frequency of common complications in the 204 cases.

Complications	No of cases	%
Relapse	9	4
Typhoid hepatitis	7	3
Typhoid myocarditis	6	3
Intestinal hemorrhage	5	2
Delirium	5	2
Proximal myopathy	4	2
Intestinal perforation	4	2
Psychosis	4	2
Meningism	3	1
Arthritis	1	0.5
Nephritis	1	0.5
Osteomyelitis	1	0.5
Total	48	23

The laboratory tests showed raised ESR in 71(35%) and leukopenia in 36 (18%) cases. Leukocyte count was normal in 150 (73%) and 18(9%) had relative leukocytosis. In those with liver involvement bilirubin was 4.5 rng/dl mainly conjugated, alkaline phosphatase 49-146 U/L(Normal39-117 U/L) and SGPT 80-170 U/L (normal upto 40 IU). Blood urea and serum creatinine were normal. Muscle enzymes were raised in all fourcases of typhoid myopathics. Of 30 caseswith cardiac manifestations, 12 showed ECG changes sueh as arrhvthniias and T wave abnormalities. Eleven of the 43 patients with cough had abnormalities in chest x-ray.

Of 95 who had blood and bone marrow cultures performed,, 49%) had a positive blood culture, whereas, all 95 had a positive bone marrow culture (Table III).

Table III. Distribution of 95 bacteriologically confirmed cases of enteric fever.

History of prior antibiotics therapy	No of cases	Positive culture	
		Blood	Marrow
Negative	25	23*(92%)	25** (100%)
Positive	70	15 (21%)	70 (100%)
Total	95	38 (40%)	95 (100%)

*P 0.01 - highly significant as compared to cases partially treated with antibiotics.

** Percentage given in parentheses.

Seventy-nine (83%) cases had typhoid and 16 (17%) paratyphoid. Blood culture was positive in 23 (92%) of 25 untreated and in 15 (21%) of 70 partially treated cases The duration of pvrexia was less than one week in 15, 1-2 weeks in 40 and more than 2 weeks in 40 patients. The isolation rate fromblood culture was 67% in the first week of fever, 37% in the second week and 32% in the third week, whereas, marrow culture gave positive results in 100% of cases, irrespective of duration of pyrexia.

All the 95 isolates of Salrnonellae were sensitive to ofloxacin, ciprofloxacin and ceftriaxone which gave a 100% cure rate. On culture and sensitiviW, 74 (78%) cases were sensitive to amoxycillin and cefotaxime, 70 (74%) to Ce farnandol and cefazolin, 57 (60%) to cotrimoxazole and minocycline, 55 (58%) to azactarn, 46 (48%) to tobramycin, 38(40%) to kanamycin and 29 (30%) to gentamicin.

Majority of the patients had been treated by general practitioners and referred to our hospital only when they did not respond or took a serious turn. One hundred and eight cases were managed conservatively with 2 gram of chioramphenicol per day, for 14 days. In 12 cases amoxycilline was substituted as a result of apparent non-response. Four cases expired including 3 children aged 5,8 and 11 years and one adult aged 67 years. Causes of death included peripheral circulatoiy failure, intestinal perforation and myocarditis. In 84 cases the treatment was ofloxacin (30). ceftriaxon (29) and ciprofloxacin (25), with 100% cure rate. Steroids were not used in any case.

Discussion

Typhoid fever, endemic in Pakistan, has a high mothidity and mortality. Its diagnosis can often be missed due to an unusual presentation, there fore. its clinical spectrum requires reappraisal from time to time. Although most of the clinical features were similar to those reported[1,2,3,5], a number of differences were noticed in this study. The classical pattern of step-ladder fever associated with relative bradycardia was not seen in most patients. Twenty-two percent cases had sudden onset of high grade fever and of these majority were clinically diagnosed as septicaemia. Diagnoses of viral hepatitis, gastroenteritis, bronchitis, psychosis, meningitis, myocarditis, polyneuropathy and proximal myopathy were also made based on the presenting signs and symptoms. Only 60% of the cases presented with conventional features.

Diarrhoea was found more common than constipation even in adults. Neuropsychiatric manifestations were less frequent as compared to 45% cases reported from India2,10,11. The frequency of intestinal hemorrhage and perforation was also much lower than otherreported series[1,4,12].

Typhoid hepatitis an important complication should particularly be considered as a differential diagnosis in cases with fever, jaundice and hepatomegaly[13]. Reversible proximal myopathy (a new clinical syndrome)[14], occurred in about 2% of this series and all the 4 patients recovered, completely over a period of 2 to 3 weeks.

This study demonstrates that compared to blood culture bone marrow aspirate culture significantly increases the chances of bacteriological confirmation in enteric fever[15,16]. Suppression of bacteremia by prior adminstration of antibiotics, pmbably accounted for low efficacy of blood cultures in this study.

Salmonella typhi was the most common organism isolated. In our country where water supply, sanitation and sewage disposal are still inadequate, infection due to Salmonella typhi which predominantly spreads by water, is far more common. All the strains of Salmonella in this study were sensitive to ofloxacine, ciprofloxacine and ceftriaxone. The increase in resistance rate to chloramphenicol, amoxycillin and cotrimoxazol is due to unrestricted antimicrobial use in ourcountry[3,17].

The clinical spectrum of typhoid fever has changed worldwide[1,4,5]. The classical symptoms of step-

ladder fever, relative. bradycardia, diarrhoea, hepatomegaly and jaundice are not commonly encountered. Low efficacy of blood culture and increased drug resistance have also been noted. This alteration in the presentation of typhoid fever could be attributed to environmental factors which could presumably be responsible for the clinical picture and biological recovery. Bone marrow culture is the most important investigation fora confirmed diagnosis and the second generationquinolones are the drugs of choice for a complete recovery.

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