Enteric fever—a review of clinical records

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Introduction:- Enteric fever is an endemic disease in Kathmandu Valley. The disease flares up to an epidemic proportion from time to time. The present study is intended to review and analyse the clinical records of cases admitted in Infectious Disease Hospital, Teku, Kathmandu. One hundred cases of enteric fever admitted in the hospital from Bhadra 2040 (Aug/Sept.1983) to Chaitra (Feb/March, 1984) were reviewed. The reviewed cases included only those from whom *Salmonella* species were isolated by Central Health Laboratory, Teku. The objectives of the study was to review and analyse the existing records and present them in a systematic and comprehensive manner so that the review could be utilized in the management and control of the disease in future.

Enteric fever case load in the hospital:- Total number of admissions and proportion of enteric fever cases amongst those admitted in the hospital are summarized in table I. The data show

Table 1
Enteric fever cases admitted in Infectious
Disease Hospital, Teku, Kathmandu, Nepal

Year	Total Number of Admission	Number of Enteric fever cases*	Percentage	Remarks
2036 (1979/80)	6,287	63	1.00	
2037 (1980/81)	4,229	76	1.79	
2038 (1981/82)	4,337	98	2.25	
2039 (1982/83)	4,625	152	3.28	
2040 (1983/84)	6,892	345	5.00	

*The number include clinical as well as laboratory confirmed cases.

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that enteric fever cases constitute 5% of total admissions in 2040 (1983/84). There have been relative as well as absolute increase of cases admitted during the past five years. This may be due to increasing diagnostic facilities and/or increased consciousness amongst people to seek hospital admissions for the treatment of fever cases. Seasonal fluctuation of the disease is shown in table II.

It appears that the disease occurs all the year round with a peak at Ashad (June/July) the month of the onset of raining season. The lower case load in the months December through March (cold season) might be significant.

Epidemiology:- The epidemiological informations available in clinical case records are limited to age, sex, address and the time of admission and discharge from the hospital. There are provisions for other epidemiological informations such as occupation, religion, marital status etc; but they are not usually recorded. General education status of the patient is perhaps an important item to be recorded but there is no provision for that in the record. The summary

Table II
Seasonal distribution of enteric fever cases admitted.
in the Hospital in the year 2040 (1983/84)

Months	No. of cases	Remarks
Baishak (April/May)	49	
Jestha (May/June)	46	
Ashad (June/July)	58	
Shrawan (July/August)	28	
Bhadra (August/September)	47	
Aswin (September/October)	31	
Kartik (October/November)	30	
Marg (November/December)	20	
Poush (December/January)	9	
Magh (January/February)	5	
Falgun (February/March)	12	
Chaitra (March/April)	10	
Total:-		345

of available epidemiological information is presented in table III. The table shows that the incidence of disease in the age group 15-24 yrs is the highest (46%) followed by 27% in the age group 5-14 yrs and 20% in the age group 25-34 yrs respectively. It appears that the disease is the commonest in young adult population. Male seem to be affected more (60%) than the females in this series. Further observations would be needed to verify the statement. The distribution of cases in urban and rural areas was 45% and 55% respectively.

Table III
Age and sex incidence

Age (Years)	No. of cases
<1	0
1 - 4	2
5 - 14	27
15 - 24	46
25 - 34	20
35 and above.	5
Total:-	100
Sex	
Male	60
Female	40
Total	100

Symptoms:- Presenting complaints of the patients are listed in table IV. The predominant complaints of the patients were fever (99%) and headache (59%). Only one out of hundred cases in this series did not complain of fever. Most of the patients had more than one complaint. The frequency distribution of such combinations of complaints were not worked out although it might be useful to do so. The only patient who died in this series had the complaints of fever, abdominal pain and palpitation. No other patient had complained of palpitation.

Signs:- Pyrexia seems to be the most consistent sign which were recorded in over 95% of cases (Table V), relative bradycardia did not seem to be a remarkable sign although some individuals showed the tendency. Splenomegaly, liver enlargement and abdominal tenderness were found approximately in one third of cases. Combinations of the signs and their distributions were

not worked out. Rose spots were not recorded at all. It seems that either they did not exist in this part of the world or the physicians were not that keen to record when they actually saw them.

Table IV

Symptoms

Symptoms	%
Fever	99
Headache	59
Cough	29
Constipation	25
Pain abdomen	23
Diarrhoea	22
Loss of appetite	22
Vomitting	16
Nausea	10
Chest Pain	7
Dizziness	4
*Palpitation	1

*The only patient who complained of palpitation expired. This was the only fatal case in the present series of 100 cases.

Table V

Signs

Pyrexia (°F)	%	Pulse/minute	%
< 99	5	80	2
99- 100.9	25	80 - 99	30
101- 102.9	40	100 - 119	34
103- 105	30	120 - 140	30
Above 105	-	Above 140	4
		%	
	Splenomegaly	30	
	Liver enlargement	35	
	Abdominal Tenderness	31	
	Chest Signs	14	
	Drowsiness	4	
	Rose Spots	-	

*At the time of admission in the hospital.

Laboratory findings:- Laboratory investigations include routine examinations of blood for T.C., D.C., Hb / and E.S.R., microscopic examination of blood for malaria parasite, microscopic examination of urine and stool. In addition, blood cultures were done in almost all suspected cases. Urine, stool and other cultures were done on selected cases. Serological tests are not yet available. The laboratory data are presented in Table VI. The data show that the majority of cases had W.B.C. count within the normal range. 28% had less than 5,000 per cmm. Leucopenia might be important sign for a few individuals. The data of haemoglobin seems to be a reflection of undernutrition status of general population. E.S.R. was high in majority of cases. It might be due to the presence of more than one diseases in majority of cases. Salmonella typhi was the predominant species isolated in blood and stool cultures, 20 patients whose blood cultures were negative had positive cultures of stool or others. Urine cultures were all negative.

Table VI
Laboratory findings

i. W.B.C. Count/Cmm	No. of cases	%
<5,000	28	28
5,000 - 10,000	67	67
Above 10,000	5	5
Total:-	100	100
ii. Haemoglobin Gm./100 c.c.	No. of cases	%
< 8	1	1.1
8 - 10	12	13.3
10.4 - 12	40	44.5
12.1 - 14	25	27.8
Above 14	12	13.4
Total:-	90	100.0

iii E.S.R. (Wintrobe) in mm in 1st hr.	No. of cases	%
< - 10	2	2.4
11 - 20	10	11.8
21 - 40	26	30.5
41 - 60	42	49.4
above 60	5	5.9
Total:-	85	100.0

Culture	S. Typhi	S. Paratyphi 'A'	No growth	Total
Blood	65	15	20	100
Urine	-	-	42	42
Stool	11	-	7	18
Others	4	5	2	11

Table VII
Treatment

Drugs used	No. of cases
Chloramphenicol	100
Ampicillin	17
Chloroquin	11

Note:- Ampicillin or Chloroquin or both were used in addition to Chloramphenicol.

No. of days taken to bring down the pyrexia to normal level
(98.4 °F) after the commencement of chloramphenicol

No. of days:-	0 - 1	2	3	4	5	6	7	8+	Not known	Total
No. of cases:-	X	4	13	14	14	18	6	28	3	100
Result:					1 %					
Discharged with improvement			-		96					
Discharged on request			-		2					
Left against medical advice			-		1					
Expired			-		1					
Total:-					100					

Treatment:- Chloramphenicol was given to all cases after the isolation of the organisms. In addition, a few cases received ampicillin or chloroquine or both. In 72 cases pyrexia came down to normal level within a week after the commencement of chloramphenicol. However, there were 28 cases who had delayed response to chloramphenicol. One would be tempted to ask wheather this could be due to i) inadequate blood level of different brands of chloramphenicol or ii) the emergence of drug resistant strains. Further work is being carried out in this respect.

Result:- The mortality rate was one percent in this series. The rest were discharged with improvments with the exception of one case who left against medical advice.

Summary:- One hundred clinical records of laboratory confirmed enteric fever cases were reviewed. The data were analysed and presented with some comments. Some inadequacies of epidemiological and clinical informations were pointed out. Finally, the importance of analysis of existing records which is the main purpose of the paper was emphasized.

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