

Some Observations of the Typhoid outbreak in Sungai Padang, Perlis

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Introduction

Typhoid or Enteric Fever is a common problem encountered by doctors in Perlis. It occurs all the year round and has been to be considered in the differential diagnosis of any pyrexia of unknown origin. From July to September 1974, there occurred an outbreak of Typhoid Fever in a small Village called Sungai Padang that is situated about 10 miles south of Kangar. The outbreak was investigated by the Health Department and was considered to have arisen from a feast or "kenduri" that was held in June 1974. The aim of this paper is to present some of the clinical features of this outbreak.

Number of cases

Altogether, there were 93 cases of typhoid fever, together with 7 relapses.

Sex Ratio

There were 56 males and 37 females cases, giving a male to female ratio of 1.5:1. Other workers have also noted a greater incidence of the disease in males, probably due to the nature of the occupation that will bring them into greater contact with other cases or carriers (Stuart and Pullen, Price).

Age Distribution

The ages of the patients varied from 11 months to 60 years. The maximum cases, however, occurred in patients who were in 10-25 years age group. This is in keeping with other workers findings (Price). Table I shows the age distribution of the various patients.

TABLE I

Age group (in years)	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60
No. of patients	7	11	26	14	8	6	3	5	3	3	6	1

Racial Distribution

Except for 1 child, all the other patients were Malay. This reflects the ethnic distribution of a Malay kampong.

Mode of Onset

Most of the patients were padi-planters without any education. They made poor historians and it was difficult to get an accurate idea of the mode of onset of the illness. Moreover, many of them still harbour a distrust for western medicine and therefore did not come forward for treatment till they really felt ill or were coaxed by the Health authorities to do so. We were, however, able to gather that many cases were mild enough to remain ambulant for long (in one case for 40 days). Others, though extremely ill and toxic, did not come till they were in extremis. We shall now present the different features noted in the patients in some detail.

Skin Manifestations

Only 3 patients showed the presence of rose-spots. This gives an incidence of 3%, though other workers have given a higher incidence than this (10–20% in Price). The spots were probably not seen more frequently as the patients tended to present late in the illness while the spots are more common towards the end of the first week.

There was only 1 case of bed-sores and this was in a young adolescent girl whose parents refused to come to hospital till very late. She made an uneventful recovery.

Temperature

Though the classical description for the fever is the step-ladder type, we actually observed this in very few cases. Most patients had an intermittent type of fever and it reached a maximum of 102–104°F. Christie has mentioned that typhoid fever should be regarded as a febrile illness, but undue emphasis should not be placed on the pattern of the fever.

Several of our patients complained of 10–20 days fever at home but after admission to the ward, they were almost afebrile, showing only low spikes of fever here and there. Probably they had mild attacks of the disease that was remitting spontaneously by the time they were admitted.

Neuromuscular Manifestations

Most patients complained of generalised body-

aches pains. Headache was also a frequent complaint, while 3 patients had typhoid psychosis; two in their initial attack and one during a relapse. Table II shows the incidence of neuromuscular manifestations noted.

TABLE II

Manifestations	No. of patients
Generalised Bodyaches and pains	29
Headaches	16
Dizziness	1
Psychosis	3

Respiratory Manifestations

Respiratory manifestations are a common finding in patients with typhoid fever. This was also the case, in our series. A mild degree of bronchitis was particularly common amongst these, especially in the first week of the illness. Two cases of pneumonia were also seen. No cases of epistaxis were noted, though this is an important feature also. Table III summarises the respiratory manifestations seen in our series.

TABLE III

Manifestations	No. of patients
Coryza	1
Sore-throat	2
Chest pain	2
Bronchitis	17
Pneumonia	2

Gastro-Intestinal Manifestation

Though typhoid fever is essentially a septicaemic illness, a great deal of pathology occurs in the intestine and gastro-intestinal manifestations are therefore quite common. Most authorities quote as constipation being more common than diarrhoea in typhoid fever, but in our series, the findings were

exactly opposite. We have noted this also amongst other patients, and in fact, any patient who presents with a high fever with diarrhoea is normally scrutinized for enteric fever by us. The diarrhoea, however, was not a severe and protracted type but was actually quite mild. Another sign that is helpful in typhoid fever is gurgling that can be elicited in the lower abdomen, especially in the right iliac fossa. Table IV summarizes the main gastrointestinal manifestations.

TABLE IV

Manifestation	No. of patients
Nausea	3
Vomitting	20
Anorexia	22
Abdominal Distension	7
Abdominal Pain	11
Sordes	15
Constipation	8
Diarrhoea	20
Glossitis	2
Parotitis	1
Gurgling	13

Incidence of Hepatosplenomegaly

We noted the presence of hepatosplenomegaly in our series and found the incidence to be as shown in Table V.

TABLE V

Findings	No. of patients
Hepatomegaly only	35
Splenomegaly only	3
Hepatosplenomegaly	54

Thus, it can be seen that 92 of a total of 100 cases showed enlargement of one or the other organ

at least. This is a useful finding to note. Cecil-Loeb's Textbook of Medicine states that a spleen can be palpated in about 75% of patients. The enlargement of the liver and spleen was not gross and it regressed with therapy. Jaundice was noted only in 4 cases.

The white cell count

Most patients had a white cell count in the range of 4,000–10,000/c.mm. Only 7 patients had counts of less than 3,000 while 16 patients had counts exceeding 10,000/c.mm. A relative increase in the proportion of lymphocytes was commonly noted; this was noted in 50 of the patients, who had more than 33% of lymphocytes in their differential count.

Pregnancy and typhoid

One lady who was pregnant had a premature delivery at eight months gestation. The baby was admitted to the hospital but made good progress and was discharged after an uneventful stay in the premature unit. The mother recovered from her attack, but had a relapse some days after discharge. Other workers have also noted typhoid to hasten the onset of labour (Stuart and Pullen).

Morbidity and Mortality of the series

There were no deaths in our series of patients. No definite case of perforation was noted, though one lady had an episode of severe pain in the right iliac fossa some days after admission. She was treated with a drip and suck regime and Chloromycetin and responded very well to this. Another young boy had one episode of intestinal bleeding, but this too, stopped with conservative management.

Relapses

Seven relapses were seen in our series, giving a percentage of 7.5%. All these patients relapsed within two weeks of the first attack. The relapses were as severe as the original attacks and had to be treated with the same intensity. In one instance, (the pregnant lady), the relapse was far worse than the initial attack, the patient presenting with severe typhoid psychosis.

Management

All the patients were nursed in isolation, two special wards being set up for this purpose.

- i) *General Management:* This consisted of correcting dehydration, electrolyte imbalance, anaemia and attention to prevention of bed-sores and other minor complications. In most cases, dehydration was corrected with oral fluids, but two cases were bad enough to need initial intravenous supplementation. Few other patients were transfused with blood, while one had to be given intravenous amino-acids to build him up. Diet for these patients was the hospital typhoid diet; this is a semi-solid diet with no roughage.
- ii) *Drug therapy:* The main drug used was chloromycetin, usually given orally, though in a few cases the succinate preparation was given parenterally in the initial stages. Most workers still find chloromycetin more effective than ampicillin in treating typhoid fever (Robertson et al), though Bactrim is gaining favour with others as a possible alternative.

The dose of chloromycetin for adults was 500 mgm 6 hrly till the patient was afebrile for at least two days, and then it was halved. Duration of therapy was for at least 14 days, though this was prolonged if the fever did not settle properly. For children, the dosage was 50/mgm/kg/day initially, and then halved when the child was afebrile. Higher doses were used for both children and adults if the response was poor. All patients on chloromycetin had regular white cell counts. One patient developed an allergic rash to chloromycetin and was changed over to Bactrim. Another patient had marked leucopaemia after being on chloromycetin for a long time. A bone marrow biopsy was done and found to be normal. He was further managed on ampicillin.

Ampicillin and Bactrim were the alternative drugs used, either singly or in combination with chloromycetin. Table VI gives a break down of the drugs used in the different patients;

The time taken for the fever to settle after initiation of therapy ranged from one to seventeen days, but the average time taken was five days.

The use of Steroids

Prednisolone was given to patient whose fever

did not settle after 5–6 days of therapy with antibiotics or who remained very toxic. Generally a three day course of treatment was given – 30 mgm, 20mg and 10mg on 3 consecutive days for adults – but the regime was often modified to suit the individual patients. No adverse effects were noted with the use of this drug. In all, 22 patients were given steroids.

TABLE VI

Drug	No. of Patients
Chloramphenicol	93
Ampicillin	1
Bactrim	0
Chloramphenicol and Ampicillin	3
Chloramphenicol and Bactrim	2
Chloramphenicol and Bactrim and Penbritin	1

Duration of stay

The average duration of stay for the patients was 25 days, though the longest stay was for 2 months. This period includes the time taken to do 3 consecutive stool clearances on the patient after the cessation of therapy.

Discussion and Conclusion

The data have tried to illustrate some of the common features of typhoid fever as seen in a small outbreak. On the whole, they agree with the findings of other workers, but some important factors stand out. Rose spots are not as common as described, while in our series, diarrhoea was more commonly noted than constipation. Enlargement of the liver and spleen, either alone or in combination is a very helpful sign in patients with fever. Actual leucopaemia is not common, but the count is frequently within the normal large, with a lymphocyte predominance.

We also did not have any mortality in our series, and this is a most encouraging sign. We were also fortunate not to have any dangerous complications like intestinal perforation.

Chloromycetin was found to be an effective

drug in the management of these cases. Ampicillin and Bactrim were useful as adjuncts or alternatives. There was no really serious side-effect noted.

Acknowledgements

- i) We would like to thank the Director General of Medical Services, Malaysia, for his kind permission to publish this paper.
- ii) We also thank Cik Mahani binti Othman for typing the manuscript.

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