

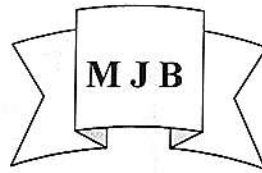
Typhoid Fever Complications in Babylon

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Abstract

635 patients with acute febrile illnesses admitted to Merjan teaching hospital during the period from Jan. 1996 to March 1997. Blood culture had been performed on all these patients and Salmonella typhi were isolated in 65 patients (Isolation rate of 10.25 %) .

The age incidence of these 65 cases ,range from (11 – 35) years , with a mean of 18.8 years . 29 are males and 36 are females .

The complications during the course of the disease were studied in these 65 patients, and bowel haemorrhage & perforation are still present. We had noticed oral soreness and oral ulceration in two female patients with Typhoid fever .

الخلاصة

اجرى اختبار زرع الدم على 635 مريض مصاب باعراض الحمى و ارتفاع درجة الحرارة و هؤلاء هم من ضمن المرضى الراقدين في ردهات مستشفى مرجان التعليمي و للفترة من كانون ثاني 1996 لغاية اذار 1997 و قد تم عزل ميكروب السالمونيلا تايفي من 65 عينة دم لمرضى مصابين باعراض الحمى المعوية اى بدرجة عزل تصل الى 10.25 % و كانت الاعمار تتراوح من 11 عام الى 35 عام و بمعدل يصل الى 18,8 عام وكان بينهم من الذكور 29 و من الاناث 36 . و لقد قمنا بدراسة حدوث المضاعفات عند هؤلاء المرضى واللذين تم عزل ميكروب حمى التايفوئيد من خلال فحص عينات زرع الدم و لقد تبين بان من اهم المضاعفات هي حصول ثقب الامعاء و حالة نزيف من اسفل الجهاز الهضمي

Introduction

Typhoid fever is one type of generalized infection caused by salmonella typhi and para typhi (A , B , & C) . The natural history of typhoid fever established first in 1856 by William Budd , in 1880 Eberth described the typhoid bacillus. The term Enteric fever was first introduced in 1869 (1,2).

Typhoid fever remains a prevalent disease in developing countries as a result of adverse socio-economic factors . Variant presentations of typhoid fever had been demonstrated which include, mild , abortive type ;

meningotyphoid ; nephrotyphoid ; pneumo- and pleuro – types ; hemorrhagic typhoid & hepatic typhoid .(3)

In typhoid bacteraemia , we have a large decrease in neutrophils count, which is mostly due to altered adhesiveness of neutrophils to endothelial lining of blood vessels .(4) Furthermore Salmonella is a facultative intracellular parasite and can invade macrophage & survive and resist inactivation ; and in addition the major finding uncomplicated cases of typhoid

fever was the negative leucocytes migration inhibition test .(5)

For diagnosis of typhoid fever all serologic tests are non-specific, poorly standardised , often confusing and difficult to interpret .(6),(7), (8) .We depend on blood culture and / or bone marrow culture for diagnosis of typhoid fever and we study the complications in this condition .

Patients and Methods

Patients , whom they are included in this study , are those with enteric fever , admitted to Merjan teaching hospital from the period Jan. 1996 to March 1997. The diagnosis of typhoid fever was made by history , clinical examination and positive isolation of salmonella from the blood &/ or marrow .In fact , 636 patients with acute febrile illnesses admitted to Merjan hospital over a period of 15 months and all had blood culture and in 15 patients bone marrow culture had been performed .Other investigation include :urine analysis ,complete blood pictures , standard agglutination for Brucellosis , liver function test including liver enzymes transaminase & alkaline phosphatase , CXR and U/S of the abdomen were done on the patients when ever they were indicated .

Brain-heart infusion broth culture methods are done & the media is incubated at 37 degree centigrade . Subculture is done on Mac Conkey agar after 24 hr. and 96 hrs incubations at 37 C . Salmonella suspected colonies were purified in pure culture and identified by set of biochemical tests used for enteric fever .,Serotyping for enteric fever are also done by slide agglutination with standard polyvalent " O " of Salmonella phase I as well as phase II Salmonella " anti H " . (9) ,(10) ,(11) .

Results

The rate of Salmonella isolation in our hospital ' lab. is a round 10.25 % .

Only in two patients Salmonella paratyphi A & Salmonella paratyphi B were found on blood culture , whereas the remaining 63 patients Salmonella typhi were isolated & in 15 of these Salmonella were isolated from the bone marrow .

The ages of these 65 patients range from (11- 35) years with a mean of 18.8 years.

There is female preponderance in the studied cases , as there is 29 males & 36 females.

The incidence of complications during the course of the disease were studied with the following results :

- Bowel perforation occurred in three of these patients (one is female and two are males) , it make an incidence of about 4.6% .Two of these three patients had received prednisolone as additional treatment .
- Three patients also had developed mild to moderate bowel hemorrhage and associated with sever bloody diarrhea, one patient received blood transfusion.
- Sub clinical hepatitis noticed in four patients (three males and one female) and characterized by hepatomegaly and raised transaminase values in the range of (65 -250 iu/l) .
- Acute nephritis with puffiness of the face & oedema of both lower extremities happened in two male patients (3.1 %) . In both , complete recovery had been anticipated after treatment of the acute illness .
- During the period of our study we observed that two female patients had suffered for the first time sever oral soreness & ulceration which had disappeared after treatment for typhoid .
- C N S complications seen in three patients and they include : confusion, drowsiness , ataxia,

meningism ,delusions, disturbed level of consciousness and in one patient we had noticed mild hearing difficulty .CSF examination not done as all of them showed recovery after treatment .

- Two patient (3.1 %) developed marked weight loss and cachexia , associated with moderately severe normochromic normocytic anemia And both these patients

were female ,and two units blood transfusion were given for each one of them .

- The overall incidence of typhoid complication is about 32.3 % , no mortality was recorded in our studied patients. The following table demonstrate the mentioned complications :

Complications	Number of cases	Percentage
Bowel hemorrhage	3	4.6 %
Bowel perforation	3	4.6 %
Both hemorrhage& perforation	2	3.1 %
Hepatitis	4	6.1 %
C N S	3	4.6 %
Oral	2	3.1 %
Cachaxia , anemia	2	3.1 %
Nephritis	2	3.1 %
Total	21	32.3 %

Table I to demonstrate the incidence of Complications of typhoid fever in 65 patients.

Discussion & Conclusions

It seems that the most frequent complication and the principle cause of mortality in enteric fever is bowel perforation of the terminal ileum .(12) . In one study (13) ,the overall frequency

of intestinal perforation was 3 % with an overall mortality rate of 39.6 % and the patients in this study were all had been subjected to urgent laparotomy.

At present time the main treatment of bowel perforation is surgical& there is no place for conservative therapy and by an observation we had noticed that the mortality was high in those patients ,who received conservative measures . The site of perforation is usually at the terminal ileum and it might be multiple .The diagnosis of bowel perforation in an endemic area should be made by clinical examination and once it

is diagnosed surgery is preferred to medical treatment .(14) The two most important factors which increase, the incidence of perforation in our studied patients might be dietary factors (high roughage diet) , the use of steroids ,and furthermore a delay in the diagnosis and treatment might contribute to the higher incidence of perforation .In a study of cases of typhoid fever complicated by bowel perforation, mesenteric, lymph nodes histology showed hyporeactivity in both the T-cells , B-cells zones and this suggestion could be an explanation and basis for the pathogenesis of perforation.(15). In another prospective study of 63 patients with perforated typhoid enteritis managed operatively,over a 3 years period at university hospital and of these 43 males & 20 females and their ages range from (5 – 15 years) , their main presenting symptoms were fever , abdominal pain , vomiting and either diarrhea or constipation . All patients were subjected to surgery . The overall mortality rate in this study was 20 % and adversely influenced by increasing the duration of

perforation, presence of shock and faecal peritonitis . Early surgery after prompt and adequate resuscitation is life saving .(16) Also the survival rate of patients is high in patients undergoing surgery within 24 hrs . (17) (18) (19)

It had been demonstrated that typhoid fever presents a challenge to the paediatric surgeons not only because of complications requiring laparotomy with high mortality rate , but also the absence of criteria predicting the occurrence of complications in the course of typhoid fever . (20)

In about 5% of patients , intestinal bleeding will occur usually after the second week of illness. Bleeding occurs from ileal ulcers and may present as malena or bright red blood in stool . Brisk bleeding develops rarely, but it is an occasional cause of death .(21) (22)

In our studied cases bowel bleeding noticed in about 4.6% and it was mild to moderate and controlled by conservative measures . Also we have two patients developed both bowel perforation & bleeding .

Typhoid hepatitis is a rare complication & presentation of typhoid and salmonella hepatitis is usually indistinguishable from acute viral hepatitis and even hepatitis might be atypical in its presentation & hepatic abscess can be caused by salmonella typhi .(23) (24) (25) And the studied cases usually shows subclinical hepatitis characterized by hepatomegaly and raised transaminases value .

In one study the neurologic and psychiatric complications of enteric fever were noticed in 15% of patients . (26) Different kinds of presentations were described . Typhoid status is a febrile state of semiconsciousness accompanied by curious mattering delirium or coma vigil is seen in typhoid fever. (27) Also rare features including, transient parkinsonism, acute psychosis and catatonia Postinfective polyneuropathy also had been reported following an attack of typhoid fever. (28)

It seems that the most common neurologic complications is encephalopathy, and in the studied 65 cases the incidence of CNS complications is 4.6 % ranging from meningism to severe ataxia .

During the course of the study we noticed that two patients developed acute nephritis and one of them had generalized oedema associated with mildly impaired renal function . Although , it is very rare ; generalized oedema in the absence of nephritis in a nine years old child with typhoid fever . (29)

Cachexia and moderate anemia can be a late sequel of typhoid fever. Two young females had developed oral ulceration which interfered with their

oral feeding .No oral ulceration had been reported, but cutaneous ulcers were reported in two children aged 10 years and 3 years with typhoid fever. (30)

It had been postulated that in typhoid fever , we might have damage to the efferent pathway of sweat glands in the skin causing post typhoid anhidrosis .(31)

References

- 1- Wijlson JCT , Treatise on continued fever ,1881, Wood , New York.
- 2- Faik Hameed Al-Haddad, J Fac Med Baghdad, 1987 , 29 , 2 , 161
- 3- Christie AB , Infectious diseases epidemiology and clinical practice , 3rd ed. , Edinburgh –Churchil Livingstone ,1980, 47.
- 4- Patrick Sissons , Andrew Carmichael , The immunology of infectious diseases , in Medicine Group (Monthly add on Journal) ,1996 ,1, 1.
- 5- Premarathy Rajagopalas , R Kumar, A. N. Malaviya, clin. Exp. Immunol. ,(1981) , 44 , 68 .
- 6- Steven A. Schroeder , JAMA, Oct. 21, 1988, 208, 4 , 839.
- 7- Myron M, Am. J. Trop. Med. Hyg., 1978, 27, 4 , 795.
- 8- Abbasi Abdridha, J. Comm. Med. , 1994,7 , 2 ,113.
- 9- Gilles R. R.& Dodds , Bacteriology illustrated, 5th. Ed. , Churchil – Livingstone, 1984 .
- 10- Gupta S., The short textbook of medical microbiology ,3rd ed. , Jappe Brothers, India, 1988 .
- 11- Sachdey K. N. , Clinical pathology & Bacteriology ,7th ed , Jappe Brothers India, 1988.
- 12- Santillana M , World J Surg. ,1991Mar- Apr ;,15, 2 , 170.
- 13- Van-Basten JP ,Stockenbragger R., Typhoid perforation , a review of literature since 1960 , Trop- Geogr. Med J., 1949, 46 6 , 335 .
- 14- Kayabali- I, Gokera I H , Kayabal M, Int. Surg. Ankara Cbeci, Turkey 1990 Apr. – June , 75 2, 96 .
- 15- Peiris – JS , J- Trop. Med. – Public health,Srilanka ,1993 Mar, 24, 10 , 119.
- 16- Gupta V. , Shukla V K , Gupta S , Postgrad. Med J , India, 1994 Jan , 70 ,819 ,19.
- 17- Richen J. , Trop Doct. London school of Hygienic & Trop. Med.,1991 Oct, 21 ,4 ,149.
- 18- Van der Wert JS , Cameron FS , Typhoid perforation of the ileum , A review of 59 consecutive cases seen at Agogo Hospital, Ghana,between 1982-1987 , Trop. Geogr. Med,1990 Oct , 42 ,4 , 330 .
- 19- Wilson SJ , Green R , Britto E , Mahmood A. , J Trop Doct, Musscat, Sultunate of Oman, 1993 Jul. , 23 3 ,133 .
- 20- Kizilcan F, J Paed . Surg., Turkey, 1993 Nov. ,28 ,11, 1490 .
- 21- Edelman R, Levine M M , Rev. Inf. Dis. , 1985, 8 , 244 .
- 22- C . Wyngaarden & Smith , Typhoid fever in Cecil's textbook of medicine , W. B. Saunder Company, 8 th ed. , Vol.,1988 , 2, 1641.
- 23- El-Newihi HM , Alamy ME , Reynold T B, Hepatplogy, 1996 Sept. ,24 3, 516.
- 24- Gioannini P , Cariti- G , Minerva – Gastro-enterology – Dietal ,1996 Sept. ,42 , 3 , 153 .
- 25- Giorgio- A, Tarantion – L, De Stephano- G, Ital. – J Gastro-enterology 1996 Jan. ,28 ,1 ,31 .
- 26- Daoud- AS,, J Trop Med. Hyg.1996 Oct. ,79 , 370 .

- 27- Abraham Verghese , Typhoid Status Revisited , Am. J Med., 1985 Sept. ,79, 370 .
- 28- Abdulmutalib Abdul Karim , Amir Al- Ansari , Iraqi Med J 1991 , 40, 254 .
- 29- Madariogo M ,Vildpsola H, LaineJC, Kruger H , Rev. Gastro-enterology- Peru,1995 Jan.- Apr. , 15 , 1 ,79 .
- 30- Karlhikeyan – G, Mahaderan – S , J Trop Hyg ,1994 Oct , 97 ,5 ,298.
- 31- Raveenthiran –V , Postgrad. Med J,1995 Jan , 71 ,873 , 435.
- 32- Nand N, Angiology,1995 Nov., 47 , 11,1095.
- 33- Probha A, Indian-J- Med Science, 1995 Feb. , 49 ,2 , 28 .
- 34- Rajeshwari- K, Indian Paediatric J ,1994 Aug. , 31 , 8 , 995.