Chloramphenicol Resistant Enteric Fever

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Imported cases of enteric fever occur in Kuwait in late summer and early autumn following the return of expatriate workers and Kuwaiti holiday makers from summer vacations in countries where typhoid is epidemic. In recent years we have isolated strains of *Salmonella typhi* resistant to chloramphenicol originating in India. We report two cases of typhoid fever in siblings arriving from Egypt, caused by strains of *S. typhi* with different susceptibilities to chloramphenicol and ampicillin.

Case Reports

*Case I:* A 3½-year-old Egyptian girl presented with fever of five days duration. She had returned from Egypt one week before and has been treated with ampicillin for a suspected upper respiratory tract infection. Physical examination showed a well nourished febrile child with no hepato-splenomegaly. She was treated with ampicillin in a dosage of 100 mg/kg for 7 days. Investigations revealed a total white cell count of $8.2 \times 10^9/L$ (56% neutrophils, 40% lymphocytes) and the Widal was negative. The blood culture grew *S. typhi* resistant to ampicillin, chloramphenicol, and piperacillin but sensitive to gentamicin, amikacin, cefuroxime and cotrimoxazole. An Agar dilution susceptibility test showed the high minimum inhibitory concentration (MIC) of chloramphenicol ($32 \, \text{mg/L}$) and ampicillin ($32 \, \text{mg/L}$). Treatment was changed to amikacin $15 \, \text{mg/kg}$ and the child was transferred to the Infectious Disease Hospital where she continued antibiotic therapy for a total of 15 days. The fever pattern improved three days after initiation of therapy, disappeared completely 3 days later and she made an uneventful recovery.

*Case II:* A 7½-year-old brother of the first patient was admitted six days later with a history of fever since arrival from Egypt. There was no hepatosplenomegaly. The white cell count was $7.1 \times 10^9/L$ (60% neutrophils, 31% lymphocytes), Widal test negative and blood culture grew *S. typhi* sensitive to ampicillin, chloramphenicol piperacillin, gentamicin, amikacin, cefuroxime and cotrimoxazole. The patient was transferred to the Infectious Disease Hospital and treated with chloramphenicol for two weeks. The temperature pattern improved on day 2 and subsided by day 4 and he made uncomplicated full recovery.

Discussion

Strains of *S. typhi* resistant to chloramphenicol were detected sporadically since 1950(1), and were associated with outbreaks in Mexico in 1972(2) and Vietnam...
in 1973(3). Since then chloramphenicol resistance has been reported from many countries(1). The MIC values of the isolates in our cases were consistent with chromosomal resistance to chloramphenicol and ampicillin. Similar patterns of resistance have been reported for S. typhi from patients in the Middle East(4). Plasmid mediated resistance results in MIC values for chloramphenicol of 125-250 mg/L and renders the drug ineffective in clinical treatment. However, chromosomal resistance might also affect the therapeutic value of this antibiotic(4). Chromosomally mediated chloramphenicol resistance can develop in vivo during treatment with antibiotics(4). Since the first patient was treated with ampicillin before admission it is likely that our cases were caused by different strains of S. typhi.

The failure of our patients to develop a positive widal reaction is not unusual since the percentage of patients who develop antibodies in outbreaks of typhoid fever may be as low as 24-60%(5). Patients treated with antibiotics early in the course of their disease may not develop a significant rise in antibody titres.

REFERENCES


Perinatally Acquired AIDS

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AIDS is spreading like an epidemic in our country. According to the Indian Council of Medical Research reports(1), 6683 individuals are positive for HIV infection in India, this clearly highlights the magnitude of this problem. In India, the first adult AIDS case was reported in May, 1986. The first seropositive pregnant woman was reported in September, 1986, and the first seropositive infant was reported in October, 1987(2). The first autopsy on full blown AIDS was carried out in 1988(3). Since then the seropositivity due to HIV infection and clinical AIDS in Pediatric age group is also increasing(4,5). Our patient is the first case of perinatally

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Received for publication: July 15, 1992;
Accepted: November 11, 1992