Antibiotic Susceptibility Pattern and Plasmid Profile of Multidrug Resistant
Salmonella typhi

Dear Editor,

Enteric fever continues to be a major health problem in India and plasmid mediated resistance in Salmonella typhi is known since 1972.1 Sixty three strains of S. typhi were isolated from blood and bone marrow cultures at the microbiology laboratory of Sri Ramachandra Medical College and Research Institute, Chennai, during the period, March 2002 to September 2002. Susceptibility to ampicillin, co-trimoxazole, chloramphenicol and Tetracycline (ACCOT) was determined by disc diffusion method. Minimal inhibitory concentration (MIC) to all the above drugs were determined by agar dilution method according to NCCLS standards using ATCC E.coli 25922 as control.2 ACCOT resistance was seen in 35 strains both by disc diffusion and MIC determination. The MIC values of the resistant strains were –ampicillin 2048 µg/mL, chloramphenicol 512 µg/mL, trimethoprim 160 µg/mL, sulfamethoxazole 128 µg/mL and tetracycline 1024 µg/mL. No resistance to ciprofloxacin, cefotaxime and ceftriaxone were observed by disc diffusion. However, the results have to be evaluated further by performing the MIC for these drugs. Also, these strains were subjected to alkaline lysis to isolate high molecular weight plasmid DNA and the plasmid was further analysed by restriction analysis. All the resistant strains carried a plasmid of 23 KB, and showed same restriction pattern with EcoR-1 enzyme and Hind III enzyme. No plasmids were identified in the susceptible strains. ACCOT resistance is still common in S. typhi though declining with increased use of fluoroquinolones and cephalosporins for treatment.3 A continuous epidemiological surveillance is necessary and plasmid analysis is mandatory for studying the mechanism of drug resistance.

References


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