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Pefloxacin as a Surrogate Marker for Ciprofloxacin Resistance in Salmonella: Study from North India

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Abstract : Fluoroquinolones form the mainstay of therapy for the treatment of infections due to Salmonella enterica subsp. enterica. There is a complex interplay between several resistance mechanisms for quinolones and various fluoroquinolones discs, giving varying results, making detection and interpretation of fluoroquinolone resistance difficult. For detection of fluoroquinolone resistance in Salmonella ssp., we compared the use of pefloxacin and nalidixic acid discs as surrogate marker. Using MIC for ciprofloxacin as the gold standard, 43.5% of strains showed MIC as ≥1 μg/ml and were thus resistant to fluoroquinoloes. Based on the performance of nalidixic acid and pefloxacin discs as surrogate marker for ciprofloxacin resistance, both the discs could correctly detect all the resistant phenotypes; however, use of nalidixic acid disc showed false resistance in the majority of the sensitive phenotypes. We have also tested newer antimicrobial agents like cefixime, imipenem, tigecycline and azithromycin against Salmonella spp. Moreover, there was a comeback of susceptibility to older antimicrobials like ampicillin, chloramphenicol, and cotrimoxazole. We can also use cefixime, imipenem, tigecycline and azithromycin in the treatment of multidrug resistant S. typhi due to their high susceptibility.

Keywords : salmonella, pefloxacin, surrogate marker, chloramphenicol
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