RESERCH LETTER

Entrobacter Species - Flourish at the Turn of Century

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Previously species of enterobacter genus were not encountered in surveys of nosocomial infections (1). But now a days these simple soil and water organism is being increasingly reported in urinary tract infections, repiratory tract infections, cutaneous wounds, bacteremia, neonatal septicaemia particularly from hospitalized patients (2). Emergence of ESBL producing multidrug resistant strains has further aggrevated the problem. A total of 400 isolates of family Enterobacteriaceae were recovered from various clinical specimens, of which 58 (14.50%) were that of Enterobacter species (42 from hospitalized patients and 16 from outdoor patients) enrolled in Govt. Medical College and Hospital. Organisms were identified by standard methods and antimicrobial testing was done by Kirby bauer disc diffusion method. Among the 42 isolates maximum (28%) were isolated from patients of more than 60 years of age group. Twenty-four (57.14%) were recovered from pus samples followed by urine 13 (30.95%), blood 5 (11.90%). All the 42 isolates were resistant to 2 or more antibiotics. Notable drug resistance was found for Cefdinir (76.19%), Gentamicin (71.42%), Ciprofloxacin (69.04%), Cefotaxime (54.76%) and Ceftriaxone (50%). Maximum isolates were sensitive to Amikacin (85.72%). these isolates were subjected to ESBL detection by double disc diffusion method and MIC broth dilution test and ESBL production was detected in 83.33% of the isolate which was comparable to result of another author (79%) (3). However, among the 16 outdoor isolates, ESBL production was detected in 43.75% of isolates. Statistical analysis showed a highly sgnificant difference ($p<0.001$) in ESBL production among hospital and outdoor isolates.

Incidence of Enterobacter species causing nosocomial infections in this study is 14.50% which is comparable to the results of Shah *et al* (15%) (4) and Roy *et al* (22.9%) (5). However the incidence is higher than that reported by Ali *et al* (4.6%) (3).

Enterobacter species have emerged as a major nosocomial pathogen. Significant antibiotic resistance and higher rate of ESBL production has favoured this organism to flourish in hospital environment. Thus, implementation of stringent antibiotic policy and preventive measures aimed to reduce the spread of these resistant strains among patients/or hospital environent is recommended.

References

1. Aibinu IE, Ohaegbulam VC, Adenipekun EA, Ogunsola FT, Odugbemi TO, Mee BJ. ESBL enzymes in clinical isolates of Enterobacter species from Lagos, Nigeria. *J Clin Microbiol* 2003 ; 41(5) : 2197-2200.
2. Koneman EW, Allen SD, Janda WM, Schreckenberger PC, Winn WC (eds). The enterobacteriaceae. In: Color Atlas and Textbook of Diagnostic Microbiology, 5th ed. Philadelphia: JB Lippincott Co, 1997 ; pp. 171-230.
3. Ali AM, Rafi S, Qureshi AM. Frequency of ESBL producing Gram negative bacilli among clinical isolates at clinical laboratories of Army Medical College Rawalpindi. *J Ayub Med College* 2004 ; 16(1) : 1-3.
4. Hasan F, Shah AA, Ahmed S, Hameed A. Prevalence of ESBLs in Nosocomial and outpatients (Ambulatory). *Pak J Med Sci* 2003 ; 19(3) : 187-91.
5. Roy I, Jain A, Kumar M, Agarwal SK. Bacteriology of neonatal septicemia in a tertiary care Hospital of Northern India. *Ind J Med Microbiol* 2002 ; 20(3) : 156-59.

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