TRANSFERABLE ANTIBIOTIC RESISTANCE AMONG ENTEROPATHOGENIC E.COLI ISOLATED FROM DIARRHOEAL PATIENTS

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Enteropathogenic E.coli is one of the major diarrhoea causing agents among children in developing countries. This study was undertaken to determine the acute diarrhoea causing enteropathogenic E.coli among children in various age groups, the antibiotic resistance pattern of the E.coli strains infecting them and the transferability of their resistance character.

Stool samples from diarrhoeal patients admitted to paediatric ward of the teaching hospital, Jaffna, were taken into enrichment broth, before any therapy was started. This broth was plated on MacConkey agar plate, Suspected colonies from MacConkey agar plate were identified biochemically followed by serotyping using antisera from Biomerieux. Antibiotic sensitivity pattern was determined by agar disc diffusion method. The antibiotics tested in this experiment were ampicillin (50µg/disc) trimathoprin (40µg/disc) tetracycline (50 g/disc), chloramphenicol (20 g/disc) and nalidixic acid (30µg/disc). With each set of antibiotic determinations a control E.coli K12 EC1005 (met^-, na^r) strain was included. Transferable antibiotic resistance pattern of nalidixic acid sensitive E.coli wild strain was determined by transconjugation experiments with E.coli K12 EC1005 (met^-, na^r) strain.

Patients in the age group 0 - 24 months were investigated for infection with enteropathogenic E.coli. A total of 500 specimens were analysed and the number of pathogenic E.coli strains isolated was 33. Enteropathogenic E.coli in this study belonged to four different groups of antisera. The predominant serotype belonged to trivalent II (O 86K 61, O 119K 69 and O 127K 63) and trivalent 1 (O 26 K 60, O 55k 59 and O 111K 58) and were 40% and 30% respectively The most vulnerable group to enteropathogenic E.coli infection was 3 - 9 months. The number of enteropathogenic E.coli isolated gradually decreased with increasing age and there were only 4 cases in the age group 12 - 24 months. No case was detected in the age group 0 - 1 month.

E.coli strains exhibited resistance to ampicillin (93.9%), trimethoprim (78.7%), tetracycline (69.6%), chloramphemicol (66.6%) and nalidixic acid (18.18%). The most frequent transferable antibiotic resistance patterns were ampicillin, ampicillin - trimethoprim and ampicillin - tetracycline, while the transferability of other combinations ampicillin-trimethoprim - tetracycline, ampicillin - trimethaprim - tetracycline - chloramphenicol and trimethoprim - tetracycline was less common. The strains carrying transferable resistance were 66.6%.