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ISOLATION AND CHARACTERISATION OF R-FACTORS AMONG ENTERIC STRAINS ISOLATED FROM HEALTHY SUBJECTS, DRINKING WATER SOURCES AND HOSPITALISED PATIENTS

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26% of the aerobic Gram-negative bacilli (823) among hospital isolates harbour conjugative R-factors carrying antibiotic resistant traits to most of the clinically used antibiotics in Sri Lanka. Similar transferable antibiotic resistance patterns with a transfer frequency of (25%) to sensitive strain of *Escherichia coli* K12 Ec1005 (F^-,nal^R, *met*) was observed among corresponding strains (112) isolated from healthy adults. However, 207 similar strains isolated from 175 healthy children in the age group of 8-11 years, exhibited a low frequency (4%) of transferable resistance. Though 118 aerobic enteric Gram-negative strains isolated from 96 drinking water sources were multiply resistant, none of them were found to be transferable. Plasmid analysis on agarose gel electrophoresis showed that a resistant strain isolated from drinking water sources possessed a plasmid of 60 kilobase pairs.

Plasmids of various sizes (5 to 160) kilo base pairs were found to be prevalent among strains isolated from healthy subjects and hospital isolates. A plasmid of 153 kilobase pairs carrying resistance to ampicillin, tetracycline sulphamethoxazole, chloramphenicol and trimethoprim occured among hospital isolates obtained from different parts of the island. Confirmation of the molecular similarity of this plasmid by restriction endonucleases analysis will be of great value in monitoring the spread of R-factors in a community.