

Title: Antimicrobial susceptibility profile of environmental isolates of *Enterococcus* spp

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Enterococci are spread in nature and are normal constituents of the human and animal gastrointestinal tract. However, these microorganisms may cause a range of different disorders, especially in hospitalized patients, due to the intrinsic resistance to various antimicrobials and ability to acquire resistance. The use of antimicrobials in farming could provide the selection and propagation of resistant enterococci strains to humans. The aim of this study was to evaluate the antimicrobial susceptibility profile of enterococci isolates recovered from the environment. The study was carried out with 86 isolates of enterococci that were recovered from samples of vegetables (n=42), food of animal origin (n=20), animal feces (n=23) and water (n=1). The isolates were identified to the species level by conventional biochemical tests. The antimicrobial susceptibility profile was determined by disk diffusion method according to CLSI (*Clinical and Laboratory Standards Institute*) guidelines. The minimum inhibitory concentration for vancomycin and penicillin was determined by broth dilution method. Overall, more than nine different enterococci species were found being *Enterococcus faecalis* (22%), *E. faecium* (16%) and *E. casseliflavus* (16%) the prevalent species. *E. casseliflavus* (42%) and *E. faecalis* (19%) were the most frequent species isolated from vegetables; *E. faecalis* (50%) and *E. faecium* (25%) from food of animal origin; *E. hirae* (30%) and *E. faecium* (22%) from animal faeces. Of the 86 enterococci isolates evaluated, 35% were susceptible to all antimicrobials tested. Resistance to erythromycin (41%), norfloxacin (36%) and tetracycline (12%) was observed. One isolate showed high-level streptomycin resistance. Four isolates showed intermediate resistance to vancomycin. All isolates were susceptible to ampicillin, gentamicin, teicoplanin and chloramphenicol. The results show that a diversity of enterococci species can be found in environmental samples. However, *E. faecalis* was the most frequently isolated species, particularly from food of animal origin. Further studies can elucidate whether these isolates of *E. faecalis* from the environment are genetically similar to the isolates recovered from hospitals.

Keywords: antimicrobial susceptibility, *Enterococcus* spp, *Enterococcus faecalis*. environment.

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