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Characterization of Enterococcal Groups Present in Hospital Environments

Content

Enterococci are one of the most frequent bacteria associated to hospital-acquired infections, so their antibiotic resistance and virulence characterization is important to prevent and treat these infections.

This study focusses on bacteria from four different sources: 34 environmental enterococci from the surfaces of a veterinary Biological Isolation and Containment Unit, 10 clinical enterococci from urinary tract infections of dogs, 10 commensal enterococci from the oral cavity of dogs and 10 clinical enterococci from human diabetic foot ulcers. Susceptibility testing by disk diffusion for thirteen antibiotics and phenotypic virulence factor production using six selective mediums were performed. Multiple Antibiotic Resistance (MAR) and Virulence (VIR) Indexes were calculated by dividing the number of resistances or positive expression of virulence factors, by the total number tested.

The group that presented the highest MAR index was the environmental enterococci, mainly composed of Enterococcus faecium, known for its high antibiotic resistance. The commensal isolates presented the highest VIR index, probably because 5 of the 10 representative isolates were identified as Enterococcus faecalis, known for their high virulence. When comparing both indexes, human clinical isolates were the ones with the highest pathogenic potential.

This study is important in showing that different environments may compile bacteria with different characteristics, even within a single genus.

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