Title: EVALUATION OF THE SUSCEPTIBILITY PROFILE OF *Enterococcus* spp. STRAINS FROM HEALTH CENTERS EFFLUENTS.

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Abstract:

It is recognized that hospitals are selective environments, showing high rates of antimicrobial-resistant bacteria, which are released by hospitalized patients and released in hospital effluents. *Enterococcus* spp. include species components of the human normal microbiota and have been currently referred as one of the main causative agents of nosocomial infections in hospitals across the world. This study aimed to evaluate the antimicrobial susceptibility of *Enterococcus* spp. collected from effluents of health centers of three different cities of Paraná, Brazil. The isolated employees in this study were isolated of health centers and are maintained stored at -20°C as part of the collection of microorganisms of Microbiology Laboratory of State University of North Paraná (UENP). The identification of the isolates was performed by PCR using primers for *tuf* gene, which are specific for genus *Enterococcus.* For the evaluation of susceptibility, the isolates were cultured in Lúria Bertani broth for 24 hours, following the cultivation were adjusted according to the tube 1 of Mc Farland standard. The microbial suspensions were then uniformly spread in Mueller-Hinton Agar and the susceptibility test was performed by disk diffusion method using the following antibiotics: penicillin (10 units), gentamicin (10ug), erythromycin (15ug), tetracycline (30ug) and vancomycin (30ug).The plates were incubated at 37°C for 24 hours, and after this period the sensitivity halos were measured. We evaluated 75 *Enterococcus* spp. isolates and found that were resistant to vancomicyn (95%) and penicillin (95%). Eritromicin also showed low effectiveness against the isolates, with 65% of resistant strains and 34% with intermediate resistance. However, we verified that the isolates showed considerable sensitivity to gentamicin (96%) and tetracycline (41%). These data suggest that in health center effluents there is a selection of resistant micro-organisms. These results are worrying as *Enterococcus* spp. can cause a range of infections in immunocompromised individuals and it highlight the importance of wastewater treatment in healthcare units prior to its release in the environment.

Keywords: antibiogram, *Enterococcus* spp, health centers effluents

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