**TITLE:** DETECTION OF MULTIDRUG RESISTANT *ENTEROCOCCUS* SPP. ISOLATED FROM HEART DISEASE PATIENTS

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## ABSTRACT:

Enterococcus sp. is composed of Gram-positive cocci disposed in pairs or in short chains. They are found as members of the humans' and other animals' microbiota. They are ubiquitous and survive in several environments. However, these microorganisms have emerged as important opportunistic pathogens associated with diseases in both community and healthcare settings, especially due to their ability to acquire new mechanisms of resistance. The present study aimed to identify enterococcal species recovered from feces of 14 outpatients with heart disease and to determine the antimicrobial susceptibility profiles of the isolates. Stool samples were streaked onto Bile-esculin agar in serial dilutions and the isolates were identified by Matrix Assisted Laser Desorption Ionization Mass Spectrometry (MALDI-TOF MS). We used the disk-diffusion test to determine the antimicrobial susceptibility of the isolates. Of 140 isolates, 63 (45%) were identified as Enterococcus faecalis, 48 (34.3%) as Enterococcus faecium, nine (6.4%) as Enterococcus hirae, six (4.3%) as Enterococcus durans, and one (0.7%) as Enterococcus casseliflavus. Thirteen (9,2%) isolates with score < 2.000 were not identified. To detect the resistance pattern we used one isolate from each species by patient. Of 65 isolates assayed, we observed susceptibility to ampicilin, nitroforantoin and vancomycin. Isolates were resistant to cifrofloxacin 1 (1,5%), erythromycin 16 (24,6%), penicilin 2 (3%), tetracycline 17 (26,1%) and highlevel resistance gentamycin 1 (1,5%). Multidrug resistance (MDR) profiles, i.e., resistance to three or more classes of antimicrobial resistance, were observed in four (6.1%) of the 65 isolates analysed. Ten (15.3%) isolates were resistant to at least two of the drugs analyzed. Only one (0.7%) isolate was positive on Chromogenic VRE, but it was not confirmed by the disk-diffusion test. Heart diseases are an important comorbidity associated with increasing frequencies of enterococcal diseases. As these individuals have potential for hospital admissions, detection of asymptomatic carriers of multidrug-resistant enterococcal isolates is especially important.

**Keywords:** *Enterococcus* sp., heart disease patients, multidrug resistance, MALDI-TOF MS