

**Title: ANTIMICROBIAL SUSCEPTIBILITY OF VANCOMYCIN RESISTANT ENTEROCOCCI (VRE) RECOVERED FROM SURVEILLANCE CULTURE OF PATIENTS ADMITTED TO A HOSPITAL IN THE METROPOLITAN REGION OF PORTO ALEGRE-RS.**

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**Abstract:**

The increased frequency of patients colonized by vancomycin-resistant *Enterococcus* (VRE) in health institutions has implications in the spread of antimicrobial resistance in hospital environment, due to the fact that inpatients are the main reservoirs of these micro-organisms. The most common VRE transmission form is by cross contamination through contact with the hands of health professionals. The resistance to vancomycin imposes limitations to enterococcal infections treatment, which represents a threat to public health. *Enterococcus faecalis* and *Enterococcus faecium* are the main species isolated in Health Care-Associated Infections (HAIs). The aims of this study were to characterize the VRE specie recovered from surveillance culture of patients admitted to a hospital in the metropolitan region of Porto Alegre-RS, to evaluate the presence of vancomycin resistance gene by PCR according Karyama et al., (2000) and to evaluate the susceptibility profile against different antimicrobials (CLSI, 2015). Fourteen VRE surveillance isolates from rectal swab were recovered between June/2013 and June/2014. All the isolates were resistant to ampicillin, ciprofloxacin, penicillin, teicoplanin and all the isolates were susceptible to linezolid, tetracycline, daptomycin and high-levels of gentamycin. It was also observed that 42.9% (6) and 57.1% (8) of these isolates were resistant or intermediate to quinupristin/dalfopristin and nitrofurantoin, respectively. As noted in the literature, *E. faecium* are more resistant and well adapted to the hospital environment. In this study, all strains harbored the vanA gene that encodes resistance to high levels of vancomycin and teicoplanin, furthermore, these isolates can be classified as MDR (multi-drug resistant) according to criteria of Magiorakos et al., (2012), although they of the isolates still displayed sensitivity to the few therapeutic options recommended for VREs (daptomycin and linezolid). The colonization of inpatients with VRE has implications related to the cross-transmission to other patients with comorbidities. Studies like this are important for the understanding of the VREs colonization in the hospital environment, in order to obtain information that can aid in the prevention and/or management of the infections by this micro-organism.

**Keywords:** colonization, MDR, surveillance culture, susceptibility profile, VRE

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