

Vancomycin resistance in *Enterococcus* isolates from clinical samples received at the Microbiology Laboratory, Teaching Hospital Jaffna

K. Jenosha¹, T.J. Gnanakarunyan², R. Surenthirakumaran³, R. Ramachandran⁴

¹*Faculty of Allied Health Sciences, University of Jaffna*

²*Department of Medical Laboratory Sciences, Faculty of Allied Health Sciences, University of Jaffna*

³*Department of Community and Family Medicine, Faculty of Medicine, University of Jaffna*

⁴*Teaching Hospital Jaffna*

Background and objective: *Enterococcus* species are a common causative organism of nosocomial infections, which are difficult to treat due to antibiotic resistance. This study aimed to determine the prevalence of vancomycin resistance in *Enterococcus* isolates and the association of known risk factors in clinical samples received at the Microbiology Laboratory, Teaching Hospital Jaffna.

Methods: An institutional-based cross-sectional study was carried out on 49 *Enterococcus* isolates collected from the Microbiology Laboratory, Teaching Hospital Jaffna, in February/March 2020 and August/September 2020. *Enterococcus* isolates were sub-cultured on MacConkey agar and confirmed by biochemical tests. Vancomycin sensitivity was determined by Kirby-Bauer and E-Test methods. Isolates which showed resistance to vancomycin E-test strip (≥ 32 mm zone diameter and no zone) were categorised as vancomycin resistant. Data were analysed with SPSS (v25) and described as means and percentages. Fisher's exact test was used to measure associations.

Results: In total, 49 *Enterococcus* species isolates were collected from 48 patients with a mean age of 47.4 (± 24.3) years; 24 (50%) were male. Isolates were collected from urine, blood, pus/wound swab, bronchoalveolar lavage, tissue, knee joint aspiration, high vaginal swab and catheter tip. The prevalence of vancomycin resistance in *Enterococcus* species isolates was 14.3%; all were hospital-acquired infections. The distribution of vancomycin resistance by known risk factors was: over 40 years (71.4%), hospitalized >2 days (85.7%), having diabetes mellitus (71.4%), canula (100%) or catheter (57.1%) used during hospitalization, undergone pelvic/abdominal surgery (28.6%) and antibiotic usage prior to sample collection (71.4%). These associations were not statistically significant.

Conclusion: The observed prevalence of vancomycin resistance in *Enterococcus* species isolates was comparatively higher or similar to prevalence rates reported in Sri Lanka. Associated factors need to be studied with larger samples.

Keywords: *Enterococcus* Species, Antimicrobial Resistance, Vancomycin, Jaffna