

## Abstract

**Background:** Vancomycin resistant enterococci (VRE) have become more prevalent as a cause of nosocomial infection in most parts of the world. Data are lacking about the current epidemiology of VRE in Sri Lanka. The aim of this study was to assess the epidemiology of VRE colonization among patients in the intensive care units (ICU) of the National Hospital of Sri Lanka (NHSL).

**Methods:** A cross sectional study was carried out in a total of 218 patients admitted to 12 intensive care units (ICU) and high dependency units (HDU) of the National Hospital of Sri Lanka from January 2012 to March 2012. Data on demographic characteristics and risk factors were collected using a questionnaire and by reviewing patient medical records. Rectal swabs were collected on day 0, 4 and 8 and every 4<sup>th</sup> day thereafter till discharge. Enterococci were isolated from stool samples and identified up to species level using standard bacteriological procedures. Standardized antibiotic susceptibility testing to ampicillin and vancomycin was performed using the Clinical and Laboratory Standards Institute (CLSI) method. Minimum inhibitory concentrations to vancomycin were determined using the E-test in strains showing intermediate or frank resistance to vancomycin. Genotype determination of van A and van B was carried out on isolates identified as VRE using polymerase chain reaction (PCR). Patients positive for VRE colonization were followed up to discharge or death.

**Results:** VRE prevalence in the study sample was 5% (95% confidence interval). Univariate analysis showed that the use of metronidazole ( $p=0.04$ ) or teicoplanin ( $p=0.02$ ) or the presence of diabetes ( $p=0.026$ ) were associated with an increased risk of VRE colonization. However, age, sex, prolonged hospital stay ( $>3$  days) prior to ICU admission or the use of other antibiotics including cephalosporins or vancomycin were not associated with increased risk ( $P>0.05$ ).

**Conclusion:** The 5% prevalence of VRE colonization detected in this study signals the emergence of VRE in the intensive care setting in Sri Lanka. Rational use of antibiotics, such as metronidazole, may be necessary to prevent colonization. Further

surveillance studies with larger sample size are necessary to determine the detailed epidemiology and outcome of VRE colonization.