

ABSTRACT

TITLE: SPECIATION, CHARACTERIZATION AND ANTIBIOTIC SUSCEPTIBILITY PATTERN OF *ENTEROCOCCI* FROM CLINICAL ISOLATES IN A TERTIARY CARE HOSPITAL

INTRODUCTION

Enterococci are commensals of the oral cavity, gastrointestinal tract and the female genital tract in both humans and animals but in recent times, they have become emerging nosocomial pathogens. The most frequent infections caused by these organisms include urinary tract infections, intra abdominal and intra pelvic abscesses.

AIMS & OBJECTIVES

1. To isolate and speciate the *Enterococci* from various clinical samples.
2. To detect the virulence factors of isolated *Enterococci* Species.
3. To find out the antibiotic susceptibility pattern and their emerging resistance

MATERIALS AND METHODS:

The study was conducted in the Department of Microbiology, Kilpauk medical college and hospital, Chennai from January 2015 to December 2015. *Enterococci* were identified using standard identification methods. The virulence factors were determined by virulence tests. The antibiotic susceptibility testing was done by Kirby-Bauer disc diffusion method. The results were interpreted according to CLSI guidelines, 2015 (M100-S25). MIC for Vancomycin and Teicoplanin were determined by E Test (HiComb

MIC strip method) and agar dilution method. The specific vancomycin-resistant genotype vanA and vanB were determined by polymerase chain reaction (PCR).

RESULT

In our study we isolated a total of 240 *Enterococcal* isolates from various clinical samples among which *E.faecalis* and *E.faecium* were the predominant species isolated. 31 (12.92%) *Enterococcal* isolates were from intensive care units. Virulence factors like Hemolysin 44(18.33%), Gelatinase 62(25.83%), Biofilm 114 (47.5%) were produced. Virulence factors were more produced in Post operative wound infection followed by Burns wound infection, Septicemia, Diabetes and Urinary tract infection. *Enterococci* showed resistance to multiple antibiotics and all isolates were 100% sensitive to Linezolid, Tigecycline, Quinipristin / Dalfopristin. 6 isolates (4 *E.faecium* & 2 *E.faecalis*) were identified as Vancomycin Resistant *Enterococci* (prevalence rate of 2.5%). Van A gene was detected in 4 isolates and 2 isolates showed Van B gene as per PCR study, which was in concordance with both phenotypic & genotypic method of detection.

CONCLUSION

The present study showed emerging resistance of *Enterococci*, that can be controlled by strict enforcement of antibiotic policy along with strict infection control measures to prevent further emergence and spread of antibiotic resistance.

Keywords: *Enterococci*, Virulence factors, Vancomycin Resistant *Enterococci*.