

# COMPARATIVE STUDY OF VANCOMYCIN SUSCEPTIBILITY TESTING ON ISOLATES OF *Staphylococcus spp* IN BLOOD CULTURES BY AUTOMATED METHOD AND E- TEST

## ABSTRACT

*Staphylococci* are gram - positive cocci with positive catalase. According to the *List of Prokaryotic Names with Standing in Nomenclature* published in 2013, there are 47 species and 24 subspecies of *Staphylococcus*. The species of greatest clinical significance are *S. aureus*, *S. epidermidis*, *S. saprophyticus* and *S. haemolyticus*. This group of gram - positive bacteria is already resistant to beta-lactam antibiotics group. Bacterial resistance is a global problem, which is strongly related to frequent and improper use of antibiotics. New antimicrobial resistance mechanisms are emerging in Gram- positive and Gram –negative bacteria. Among the epidemiologically important organisms are *Staphylococcus spp*. *Staphylococcus* are great causes of bacteremia. For the isolation of the microorganisms present in the blood it's performed blood cultures. Bacteremia caused by *Staphylococcus spp*. are usually treated by antibiotics of the glycopeptides group, whose main representatives are Vancomycin and Teicoplanin. The study aimed to compare the results of susceptibility to Vancomycin with positive blood culture samples through automated method VITEK® 2 and the E-Test® method. The study was conducted in a microbiology laboratory of a tertiary public hospital in Aracaju, SE, with *Staphylococcus spp*. isolated in positive blood cultures collected from patients admitted to the hospital. There was twenty five samples collected from January to May 2015. The microorganism most often in samples collected for this work was *S. haemolyticus* with 48 %, followed by *S. epidermidis* with (32%). Relating the TSA manual to automated, it was observed that the interpretation of qualitative results was 100% concordant, but there was a difference regarding to quantitative results (MIC). Therefore, we can conclude that the automated method Vitek 2 and the manual method E-test provided the same result in the interpretation of susceptibility to Vancomycin test. However, the MIC values reached by E-test were higher compared to the automated method Vitek 2. In this work it was shown that the two methodologies provided the same interpretation of susceptibility to the drug.

**KEYWORDS:** *Staphylococcus spp.*, bacteremia, Vancomycin, E-test, automated method.