TITLE: BACTEREMIA: ANALYSIS OF ETIOLOGICAL AGENTS AND SUSCEPTIBILITY PROFILES TO ANTIBIOTICS

AUTHORS: SOUZA, R.S.; SOUZA, J.M.; CALISTO, Y.T.V.; ATAIDES, F.S.

INTITUTION: UNIVERSIDADE PAULISTA CAMPUS FLAMBOYANT, GOIÂNIA, GO (RODOVIA BR, 153, KM 503, FAZENDA BOTAFOGO, GOIÂNIA – GO, BRAZIL)

ABSTRACT:

Bloodstream infection (BSI) is one of the leading causes of death and is associated with high medical expenditure. Further, it has been reported that intensive care unit (ICU)-acquired bacteremia contributes with high morbidity and to an approximately 35% mortality rate. Treatment is mostly empiric, covering a broad range of potential pathogens, increasing selective pressure for antibiotic-resistant bacteria. In this way, many casuistics was showed antibiotic resistance rates have been rising for all predominant etiologics agents of the BSIs, including *Staphylococcus* sp and gram-negative pathogens. This study was conducted to analyze the microbiological characteristics as well as antimicrobial susceptibility of causative pathogens in patients with intensive care unit (ICU) acquired bacteremia. This is a population study, epidemiological and crosssectional conducted after approval of the Ethics Committee of the University Paulista (Protocol: 1.800.917, approved November 1, 2016). This study was performed in a clinical laboratory at Goiânia City, between January and December 2016, where it was retrieved data of blood culture patients admitted to the ICU. During the study period, among 514 patients admitted to the ICU that performed blood culture, were recorded 93 (18%) positive results with identification of 202 bacteremia isolates. Among the bacteremia isolates, a total of 119 (58.9%) had Gram positive bacteremia while 83 (41.1%) had Gram-negative bacteremia. Coagulase-negative *Staphylococcus* accounted for 27.3% of the Gram-positive pathogens, *Staphylococcus aureus* 19.3%, and enterococci 7.4%. The Gram-negative bacteremias were predominantly Enterobacteriacae (32.1%). *Escherichia coli* accounted for 14.3% of all Gram-negative bacteremias, and *Pseudomonas aeruginosa* for 5%. Antibiotic resistance was uncommon among *S. aureus* isolates; however, than more 50% *S. epidermides* isolates were resistant to oxacilin and penicillin. Among Gram-negative isolates, 20% and 26.6% of the *E. coli* and *K. pneumoniae* respectively isolates were extended spectrum beta-lactamase (ESBL)-producing strains. Thus, a substantial proportion of bacteremia among patients admitted to the ICU were caused by Coagulase-negative *Staphylococcus*, *E. coli* and *K. pneumoniae*. Besides, the gram positive isolates showed resistance to traditionally used antimicrobials in the medicine practice, and among gram negative isolates were ESBL producing strains.

Keywords: ICU, bloodstream infection, antibiotic resistance, bacteremia