

**Title: PREVALENCE EPIDEMIOLOGIC STUDY AND ANTIMICROBIAL PROFILE OF MICROORGANISMS FROM BLOOD CULTURES OF PATIENTS OF BELO HORIZONTE/MG, BRAZIL.**

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**Summary:**

The bloodstream infections (BSI) are the most relevant infections related to health care due to their high prevalence, high morbi-mortality rates and associated costs. The correct diagnosis of bloodstream infections is extremely important and results in increased patient survival. Thus, the blood culture has significant predictive value when examining these infections. In this study the variables evaluated were the frequency of positivity in the samples and the sensitivity profile of microorganisms to antimicrobials agents. Three blood samples from each patient were collected by nursing staff and immediately inoculated into blood culture bottles for automated system BACTEC®. The identification and antibiogram were evaluated by the automated system MicroScan WalkAway®. For Tigecycline susceptibility testing and determining of minimum inhibitory concentration (MIC) of Polymyxin B was used disk diffusion method and E-Test®, respectively. A total of 225 (16.1%) patients had positive blood culture for microorganisms. A broad range of 553 microorganisms from 17 different genus were isolated from the positive cases. Given this among patients with positive blood cultures, the mean age was 66.7 years. Also, the male/female ratio was 1.3 (55.8% male). The microorganisms most frequently isolated were *Staphylococcus aureus* (n=103; 18.6%) followed by coagulase-negative *Staphylococcus* (n=78; 14.1%). In the third place was *Escherichia coli* (n=60; 10.8%), then *Pseudomonas aeruginosa* (n=50; 9.1%), *Acinetobacter baumannii* (n=39, 7.1%) and *Klebsiella pneumoniae* (n=38, 6.9%). Fungi represented approximately 5.5% of the isolates. About the *Staphylococcus aureus*, 22% were *Staphylococcus aureus* methicillin-resistant (MRSA). Regarding these, none was resistant to daptomycin, linezolid or vancomycin. However, among *Enterococcus*, 41% were resistant to vancomycin but none was resistant to daptomycin and 8% were not sensitive to linezolid. In relation to the production of extended-spectrum beta-lactamase (ESBL), 20% of the strains of *Escherichia coli* (12/60), 38% of *Klebsiella* spp (16/42) and 39% of *Proteus* spp (12/31) produced this enzyme. This study contributed to the knowledge of the microbiological panorama of a large hospital in Belo Horizonte/Brazil, providing very important information for rational use of antimicrobial strategies and reduction of bacterial resistance.

**Keywords:** antimicrobial, bacterial resistance, bloodstream infections.