

## **Prevalence of microorganisms and their antimicrobial susceptibility profile in blood samples from an university hospital from Vitória, Brazil**

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### **Abstract**

Due to the elevated number of nosocomial infections and its relation with intra-hospital morbidity and mortality levels, it is crucial to evaluate the responsible agents in order to improve patients' care. This is an observational, retrospective and transversal study performed at the Hospital da Santa Casa de Misericórdia de Vitória, involving 511 patients infected between July 2014 and June 2016. Data on blood culture samples were collected from the database of the Hospital Infection Control Committee (CCIH). For blood culture, sheep blood agar (SBA), chocolate agar and MacConkey's agar (MAC), after culture in an automated blood culture system were used. Microbial identification and susceptibility profile evaluation were performed using the MicroScan auto SCAN-4 (Beckman Coulter®) automated system. The study describes four bacterias in detail: *Acinetobacter* spp., *Klebsiella pneumoniae*, *Pseudomonas aeruginosa* and *S. aureus*. The study found that the least active antimicrobials against *S. aureus* were nalidixic acid and ampicillin, while the most active were amikacin and cefazolin. Secondly, the least active antimicrobials against *Acinetobacter* spp. were aztreonam and ertapenem, whereas the most active were polymyxin and rifampicin. Furthermore, the least active antimicrobials against *K. pneumoniae* were ampicillin and ampicillin/sulbactam, while the most active were amikacin and ceftoxitin. Finally, the least active antimicrobials against *P. aeruginosa* were ceftriaxone and cefotaxime, while the most active were erythromycin and polymyxin. Physicians often have difficulty in establishing the susceptibility profile of the etiologic agent of an infection. Thus, knowledge about antimicrobial resistance from the hospital is fundamental, improving clinical management of patients.

### **Biography**

Moraes Rodrigo Alexandre Coelho Guimarães has completed his graduation in Pharmacy from Emescam College (2004), Post-graduated in Microbiology from PUC University (2006) and Master's in Biological Sciences (Microbiology) from Federal University of Minas Gerais (UFMG) (2008). He is currently the Coordinator of the Biomedicine Course at PIO XII Faculty and Professor of Microbiology, Cell Biology and Biochemistry, and Professor of Microbiology at Emescam (School of Sciences of Santa Casa de Misericórdia de Vitória, ES). He is also a member of the Research Ethics Committee and of the Medical Course Collegiate from Emescam.

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