

TITLE: ANTIMICROBIAL RESISTANCE PATTERNS IN A NOSOCOMIAL BLOODSTREAM INFECTION

AUTHORS: CANDIDO, B.G.; MAGRI, B.T.; TOMAZ, L.O.; BARROS, M.F.; QUADROS, C.A.A.; ETTORY, M.; BARBOSA, T.V.; PIERRO, L.M.C.; MENDES, T.S.; SIQUEIRA-YAMAGUCHI, J.; MARINHEIRO, J.C.

INSTITUTION: UNIVERSIDADE NOVE DE JULHO, MAUÁ, SP (RUA ÁLVARES MACHADO, 48 - VILA BOCAINA, CEP 09310-020, MAUÁ, SP, BRAZIL)

ABSTRACT:

Hospitalized patients are predisposed to a variety of nosocomial infections, especially with multidrug-resistant organisms. Primary bloodstream infection represents about 15% of all nosocomial infections and increases the mortality rate, prolongs patient stay at hospital, and generates substantial extra costs. Both gram negative and gram positive bacteria are associated with these infections, being *Klebsiella pneumoniae*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Enterobacter spp*, *Acinetobacter baumannii* and *Escherichia coli* the most commonly isolated. The effective treatment for bloodstream infections depends on pathogen identification and the right antimicrobial agents usage. Extensive and inappropriate antimicrobial agents usage has caused antimicrobial resistance, which is considered be a serious problem worldwide. This study aims to determine the etiologic agents of nosocomial bloodstream infection in patients interned in a public hospital in Mauá, SP and the antibiotic susceptibility. This study is based on medical records containing hospitalar information from nosocomially infections of patients interned at the Radamés Nardini Hospital. Some pieces of data about bacterial etiology as well as antimicrobial susceptibility to commonly used antibiotics were analyzed and compared to other studies. In 2018, 90 cases of nosocomial infection were reported, being 37% detected from blood samples. The most prevalent bacteria species isolated were *Klebsiella pneumoniae* (25%), *Acinetobacter baumannii* (18,2%) and *Pseudomonas aeruginosa* (15,1%). Other isolated were *Staphylococcus aureus*, *Burkholderia cepacia*, *Enterococcus spp* e *Citrobacter koseri*. Almost all isolated *K. pneumoniae* were resistant to all sort of antibiotics tested, including penicillin (100%), cephalosporin (95%), quinolone (88%), sulfonamide (88%), aminoglycoside (88%), carbapenem (88%) and beta lactamase inhibitor (88%). 87% of the isolated bacteria presented sensibility to Polymyxin B antibiotic. Three *P. aeruginosa* isolates (3 from 5) presented resistance to all tested antibiotics, except beta lactamase inhibitors. *A. baumannii* isolated were resistant to most antibiotics class, except carbapenem (gentamicin) and beta lactamase inhibitors. *S. aureus* isolates (50%) were resistant to macrolide antibiotics (erythromycin) and sensible (100%) to oxazolidinone class (linezolid). 97% of the bacteria isolated were gram negative. The only gram positive species detected were *S. aureus*.

Keyword: nosocomial infection, bloodstream, antibiotics, drug-resistance, *Klebsiella pneumoniae*

Correspondence author: Juliana Cristina Marinheiro. juliana.marinheiro@uni9.pro.br