

**TITLE:** PRESENCE OF *Staphylococcus* spp. IN BLOOD CULTURES: THE IMPORTANCE OF THE MICROBIOLOGICAL RESULTS IN ANTIMICROBIAL THERAPY

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**ABSTRACT:**

*Staphylococcus* spp. are among the main agents of bacteremia in hospitalized patients. Microbiological tests, such as blood culture, including antimicrobial susceptibility tests are essential to directing antimicrobial treatment and achieving therapeutic success. The objective of this study was to evaluate the impact of microbiological results (MR) on antimicrobial therapy after positive results for *Staphylococcus* spp. in blood cultures. In a teaching hospital in Paraná during the year 2018, were selected from the GSUS (health care management system of the SUS) database, blood cultures positive for *Staphylococcus* spp.. In this hospital the routine for performing blood cultures (two samples per patient) is given by the use of automated systems (BD BACTEC™) followed by the identification and antimicrobial susceptibility tests (BD Phoenix™). Data on the antimicrobial therapy used before and after the blood culture results positive for *Staphylococcus* spp. were collected. Antimicrobial therapy was considered adequate when the bacterial isolate showed in vitro (MR) susceptibility to the antimicrobial agent administered in standard doses in the package insert. This therapy could be started before (empirical) or after the MR. During the study period, 1242 blood cultures were performed and 28 were positive for *Staphylococcus* spp.. Of these, 14 were identified as *Staphylococcus aureus* (one methicillin-resistant - MRSA and 13 methicillin-susceptible - MSSA) and 14 as coagulase-negative *Staphylococcus*-CnS (1 methicillin-susceptible - MSCnS e 13 methicillin-resistant - MRCnS). For methicillin susceptible isolates (13 MSSA and 01 MSCnS) the therapy was adequate in only 21% (3/14) of the isolates after the MR, since vancomycin remained as therapy of choice. For patients with methicillin-resistant bacteremia, the choice of antimicrobial was considered adequate when the empirical antimicrobial was changed to vancomycin or linezolid in 85% (11/13) of MRCnS and 100% (1/1) of MRSA; drugs in which these isolates were susceptible in the MR. After MR, the therapy was considered inadequately among the majority of the methicillin-susceptible isolates, since the empirical antimicrobial was not replaced by oxacillin. These data demonstrate that the MR have not been adequately valued, which may lead to therapeutic failure and higher costs and toxicity for patients.

**Keywords:** *Staphylococcus* spp.; bacteremia; blood cultures; antimicrobial therapy.

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