

TITLE: Evaluation of the prevalence of microorganisms and percentage of antimicrobial susceptibility in patients with sepsis.

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#### ABSTRACT:

Sepsis is a serious disease that is triggered by a dysregulated host response to a particular infectious agent and is considered the leading cause of death by infection in the world. Its incidence is increasing both in the adult population, pregnant and postpartum women, as well as in immunosuppressed or chronic diseases patients. It is estimated that approximately 600,000 new cases of sepsis are diagnosed per year in Brazil, accounting for up to 65% of deaths, while the global average is 30-40%. Early recognition of the disease and rapid and effective measures are of paramount importance for patient survival as well as adequate therapy within the first hours of diagnosis. The aim of this study was to evaluate the prevalence of the main microorganisms isolated in Bloodstream Infection (ICS) from patients with suspected sepsis, besides the sensitivity profile and their mortality rate. A total of 6185 blood cultures were collected from January 2017 to December 2018 in a high-complexity hospital with a public-private partnership in the city of Sao Paulo. Of this total, 430 (7%) samples were collected from patients with clinical signs of septicemia and 24% (N = 105) had their causative agents identified. The most prevalent microorganisms were *Escherichia coli* (27.6%) followed by *Staphylococcus aureus* (10.4%), *Klebsiella pneumoniae* (9.5%) and *Staphylococcus epidermidis* (9.5%). Sensitivity for enterobacteria to carbapenems, *S. aureus* to oxacillin and for enterococci to vancomycin was respectively 97%, 72% and 100%. The patients most affected by sepsis were hospitalized in an Intensive Care Unit patients (43%), followed for transplant patients (21%) and pregnant women (13%). In order to monitor sepsis in our hospital, we performed the implementation of a protocol (Sepsis Protocol), where the patient presenting the main signs and symptoms of the disease is immediately included and followed up. The mortality rate was 40% in our institution. After the protocol in 2017 decreased to 15.5% and 10.8% in 2018. In conclusion, this action could be associated with decreased in mortality rates once sepsis can be detected earlier and patients can be treated with empirical therapy more quickly, improving prognosis and survival.

KEYWORDS: Sepsis, bloodstream infection, mortality.