

Abstract:

Nosocomial infections remain a serious problem in current medicine. Another alarming problem is an apparent increase in the resistance of bacterial pathogens causing these life-threatening infections to antimicrobial agents. The most severe nosocomial infections are bloodstream infections, potentially contributing to the development of sepsis and its individual stages, including septic shock and multiple organ dysfunction syndrome.

This work aimed at retrospective determination of the most frequent etiologic agents in bacterial bloodstream infections.

Bacteria were isolated from blood cultures of patients hospitalized in the University Hospital Olomouc between 1 January 2009 and 30 June 2010. From each patient, only one isolate of a particular species obtained as the first one was included. Bacteria were identified using standard microbiology techniques. A total of 669 isolates meeting the defined conditions were obtained.

The results showed that the most frequent pathogens causing bloodstream infections were *Enterobacteriaceae*, accounting for 42% of all pathogens. Of those, 19% were *Escherichia coli* and 16% were *Klebsiella pneumoniae*. The second most frequent group of pathogens were *Staphylococcus* spp., accounting for 27% of all pathogens, with 12% being *Staphylococcus aureus* and 15% being represented by coagulase-negative staphylococci.

Bloodstream infections are bacterial infections potentially threatening the patient's life. Mortality due to these infections is, besides other factors, determined by inadequately selected antibiotic therapy. Therefore, it is crucial to define the most frequent bacterial pathogens and subsequently use the data for initial antibiotic therapy.