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Epidemiological features of septic nosocomial infections within various intensive care units

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Abstract

Background: Septic nosocomial infections are a major public health issue. Both the risk of contracting and the specificity of nosocomial pathology directly depend upon the type of inpatient settings, as well as on the institution-specific risk factors.

Material and methods: The study used a descriptive observation method based on a cross-sectional study. The present research documented and analysed retrospectively 687 follow-up records of patients admitted to different intensive care units.

Results: The study results found that the incidence of septic nosocomial infection within various intensive care units (ICU) differs, ranging between 24.68% up to 34.8%. The structure of nosological forms was dominated by severe infections as pneumonia – 50.7%, septicemia – 12.68%, surgical site infections – 12.60%, urinary tract infections – 8.45%. The polyetiological structure of pathogens varied depending on the types of ICU. Microorganisms of the genus *Staphylococcus*, *Acinetobacter*, *Clebsiella*, *Pseudomonas* and *Enterobacter* predominated in most gram-negative (87.25%) cases, being multi-drug resistant to antibiotics. The following risk factors for the development of nosocomial septic infections were identified: the widespread use of invasive devices in the treatment process, patient's comorbidities, polytraumas, vasopressors administration, the length of hospital stay within the ICU, etc. The clinical and economic effect is also important; hence the hospital stay length of patients with nosocomial infections was 2.2-2.5 times, the hospital stay cost per patient was 4.56 times, and the mortality rate was 4.55-8.43 higher compared to patients with no purulent nosocomial infections.

Conclusions: Septic nosocomial infections are an urgent issue for ICU admission, which requires the implementation of comprehensive programs to prevent morbidity and reduce microbial antibiotic resistance.

Key words: nosocomial septic infections, intensive care units, epidemiology, etiology, risk factors.

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