

Study of Antibiotic Sensitivity and Resistance Pattern of Bacterial Isolates in Intensive Care Unit Setup of a Tertiary Care Hospital

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ABSTRACT

Objective: To evaluate the antibiotic sensitivity and resistance pattern in an intensive care unit (ICU) setting of a tertiary care hospital.

Materials and methods: A cross-sectional, retrospective study was conducted for a period of 1 month in October 2017 on a total of 195 patients who were admitted to ICU of tertiary care hospital. The culture and sensitivity pattern of clinical isolates from blood, urine, sputum, endotracheal tube (ET) aspirate, catheter sites, and wound swabs were analyzed. Positive cultures were segregated and their antibiotic sensitivity testing was performed under the guidelines of clinical and laboratory standard institute (CLSI).

Results: Of the total 195 ICU admissions, cultures were sent for 167 cases. Of which 127 patients were culture positive and 40 cases were culture negative. Isolated bacteria were mostly gram-negative bacilli, of which *Escherichia coli* was (18.6%), *Acinetobacter* (14.5%), *Klebsiella* (11.6%), *Pseudomonas* (9.8%), and *Proteus* (1.74%). Among the gram-positive organisms, coagulase negative staphylococcus (CoNS) (15.6%) was most commonly isolated followed by *Streptococcus* (2.32%). Fungal growth was also seen in 26 (15.11%) samples. Samples that grew organisms were blood ($n = 48$), sputum ($n = 17$), urine ($n = 39$), ET aspirate ($n = 40$), pus ($n = 11$), catheter ($n = 4$), ear swab ($n = 2$), and stool ($n = 1$).

Conclusion: Gram-negative bacterial infections are increasing in ICUs, leading to inappropriate selection of antibiotics. Hence, antibiotic sensitivity and resistance pattern in a hospital setup has to be studied so as to guide the treating consultant to initiate empirical antibiotics in critical cases.

Keywords: Antibiogram, Antibiotic, Culture, Intensive care unit, Resistance, Sensitivity.

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