Frequency and Antibiotic Resistance Pattern of Bacteria Isolated from Specimens of Cultures Submitted from Intensive Care Units in Imam Reza Hospital in 2014

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**ABSTRACT**

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**Introduction:** Primary infection and nosocomial infection are common in intensive care units. Sepsis and septic shock are the most important causes of morbidity and mortality in the ICUs. Proper protocols for empirical treatment in the ICU seem to be essential based on common microorganisms and their resistance pattern.

**Materials and Methods:** A cross-sectional study was conducted on all cultures of samples taken from patients admitted in four ICUs at Imam Reza Hospital in Mashhad from March 2014 to February 2015. Information about cultures and antibiograms of the patients was extracted from HIS and compared with patients' records in case of need. Chi-square test was used to analyze the data.

**Results:** Out of 1569 microbial cultures, in 674 cases, the result was positive (42.95%), the highest amount of negative culture was observed in blood cultures (61.7%). Acinetobacter (222, 32.9%) was the most common isolated microorganism. Candida (12.6%), Staphylococcus aureus (12%) and Klebsiella (8.7%), were ranked in order respectively. The most effective antibiotic against acinetobacter was colistin with 0.9% resistance; this microorganism was resistant to carbapenems by more than 95%. In the studied samples, resistance to cefazolin and piperacillin was 100%.

**Conclusion:** In the ICUs of Imam Reza Hospital, more than half of infections were caused by gram-negative bacteria, the most common of which were Acinetobacter with a high resistance to most tested antibiotics except for colistin. Due to the nature of the multi-drug resistance of these microorganisms, a review of infection control processes and standard antibiotic prescribing in ICUs is essential.