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Evaluation of Antibiotics Consumption, Sensitivity Pattern and Impact of Reserve Antibiotics in Intensive Care Unit

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ABSTRACT:

The emergence of antibiotic resistance presents a critical challenge to global healthcare, particularly in intensive care units (ICUs), where the use of broad-spectrum and reserve antibiotics is frequent, which may lead to inappropriate antibiotic prescribing, limited surveillance, and inadequate implementation of antimicrobial stewardship (AMS) programs, leading to increased morbidity, mortality, and healthcare costs. The rising burden of resistant infections in ICU necessitates regular evaluation of antibiotic consumption patterns and sensitivity trends. Monitoring of reserve antibiotics and microbial susceptibility is essential to ensure their continued efficacy. This study aimed to evaluate antibiotic consumption, sensitivity pattern and impact of 'Reserve Antibiotics' in ICUs. This was Prospective observational study, conducted over the period of six months. Subjects (n=110) were selected according to inclusion and exclusion criteria. Prescription analysis, study of sensitivity pattern (from culture report), antibiotic consumption data (Defined Daily Doses) and impact of reserve antibiotic usage to assess the occurrence and prevalence of complications among patients in ICU (from patient profile form) were studied amongst selected patients. Meropenem, Colistin, Linezolid and Azetronem are commonly used reserve antibiotics to control critical illness or post-surgery infections in ICU. Usage of reserve antibiotics is in sequence meropenem>Linezolid>Colistin>Azetronem. Clinical improvement was noted after use of reserve antibiotics but patients need to be monitored for recurrence, renal abnormalities and dose adjustments. These results highlight the need for continuous surveillance of resistance trends, and rational use of reserve antibiotics to optimize patient outcomes and combat antimicrobial resistance in critical care settings.

Keywords: Antibiotic, Resistance, Reserve antibiotics, DDD

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