

The usage of antibiotics by covid-19 patients with comorbidities: The risk of increased antimicrobial resistance

ABSTRACT

Antimicrobial resistance (AMR) is a global health issue that plays a significant role in morbidity and mortality, especially in immunocompromised patients. It also becomes a serious threat to the successful treatment of many bacterial infections. The widespread and irrelevant use of antibiotics in hospitals and local clinics is the leading cause of AMR. Under this scenario, the study was conducted in a tertiary care hospital in Lahore, Pakistan, from 2 August 2021 to 31 October 2021 to discover the prevalence of bacterial infections and AMR rates in COVID-19 patients admitted in surgical intensive care units (SICUs). Clinical samples were collected from the patients and we proceeded to identify bacterial isolates, followed by antibiotic susceptibility testing (AST) using the Kirby Bauer disk diffusion method and minimum inhibitory concentration (MIC). The data of other comorbidities were also collected from the patient's medical record. The current study showed that the most common pathogens were *E. coli* (32%) and *Klebsiella pneumoniae* (17%). Most *E. coli* were resistant to ciprofloxacin (16.8%) and ampicillin (19.8%). *Klebsiella pneumoniae* were more resistant to ampicillin (13.3%) and amoxicillin (12.0%). The most common comorbidity was chronic kidney disease (CKD) and urinary tract infections (UTIs). Around 17 different types of antibiotic, the carbapenem, fluoroquinolones, aminoglycoside, and quinolones, were highly prevalent in ICU patients. The current study provides valuable data on the clinical implication of antibiotics consumed by COVID-19 patients in SICUs and the AMR rates, especially with different comorbidities.