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# Comparative Evaluation of Antibiotic Resistant Alert Organisms Detected from COVID-19 and non-COVID-19 Patients during Pandemic and Pre-Pandemic Era

S Rashmini[1], T Sandaruwan[1], UTN Senaratne[2] and WMID Nakkawita[3#]

[1]*Microbiology Laboratory, University Hospital KDU, Sri Lanka*
[2]*Department of Medical Laboratory Sciences, Faculty of Allied Health Sciences, KDU, Sri Lanka*
[3]*Department of Paraclinical Sciences, Faculty of Medicine, KDU, Sri Lanka*

[#]kuruppua@kdu.ac.lk

Antibiotic resistant alert organism surveillance is essential for early prediction of outbreaks, timely investigation, and for implementation of control measures. The aim was to compare the rates of seven specified antibiotic resistant alert organisms during COVID-19 pandemic and pre-pandemic era at University Hospital KDU. Laboratory records from July to December during the years 2019 and 2021 were scrutinized. Three groups were identified: Group 01- COVID 19 patients, Group 02 – non-COVID-19 patients in pandemic era, and Group 03 – non-COVID-19 patients in the pre-pandemic era. A total of 501 alert organisms belonging to seven groups were analyzed. Staphylococcus aureus (n=12,79,60), Enterobacteriacea (n=162,388,296), Pseudomonas (n=63,83,74), Enterococcus (n=41,40,14) and Acinetobacter (n=91,35,31) were isolated from the three groups. Methicillin Resistant Staphylococcus aureus (MRSA) rates were 83.3%,34.2%,56.7% while ESBL producing Enterobacteriaceae were 19.7%,18.8%,28.7%, Carbapenem resistant Enterobacteriaceae (CRE) were 33.3%,4.4%,4.4%, Carbapenem Resistant Pseudomonas (CRP) were 20.6%,16.9%,10.8%, Vancomycin resistant Enterococcus (VRE) were 26.8%,15%,35.7%, multidrug resistant Acinetobacter were 49.5%, 54.3%, 48.4% and the colistin resistant organisms (CRO) were 4.8%, 0.42%, 0% respectively in group 1,2 and 3. Statistically significant higher rates of alert organisms were found in group 01 compared to group 02 ($P<0.05$), while no statistically significant differences were observed between samples of group 01 and group 03 ( $P=0.11$) or group 02 and 03 ( $P=0.12$). Increased rates were observed for CRE and CRO in Group 1 when compared to Group 2 and 3. Challenges faced in implementing, infection prevention precautions and antibiotic stewardship measures during the pandemic may have contributed to these observations.

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