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Antibiotic Resistance is Seen Among COVID-19 Patients who have Been Diagnosed with Bacterial Illness

Anuradha Kumari[1], Prof.Dr. Rohit Kumar[2]

[1]Research Scholar, Malwanchal University
[2]Research Supervisor, Malwanchal University

Introduction

In March of 2020, the newly discovered respiratory sickness known as COVID-19 will be designated as a pandemic. The severe acute respiratory syndrome coronavirus is the coronavirus strain that is responsible for causing this condition. The epidemic has also had an impact on a great number of other nations.

Comorbidities, such as diabetes mellitus and hypertension, may have an effect on the severity of symptoms that a patient has as a result of COVID-19. Previous research on the management of this virus has highlighted the difficulties presented by hospitalisation and the inappropriate use of antibiotics as treatment options. Persons who were not infected with the bacterium nonetheless had an 11% chance of being hospitalised during the pandemic, and their length of stay (LOS) was on average 14 days longer than that of people who were infected with the bug. However, the likelihood of contracting an infection rises in direct proportion to both the length of stay (LOS) a patient maintains at the facility as well as the sheer volume of people there. During the COVID-19 pandemic, the inappropriate use of antibiotics was a contributing role in the spread of bacteria and viruses that are resistant to traditional therapies. Antibiotics are often recommended in medical settings, despite the fact that they have very little impact on viruses. Because there is currently no way to differentiate the severity of an illness caused by the virus from that caused by bacteria, antibiotics are typically used as a form of "empirical treatment" when treating a suspected case of COVID-19. This is due to the fact that there is no way to differentiate the severity of an illness caused by the virus from that caused by bacteria.

Before the start of the pandemic, the World Health Organization (WHO) recognised antibiotic monitoring as an essential part of the battle to reduce the prevalence of antibiotic resistance. The surveillance data are very important for determining how the local antibiotic situation is now standing as well as gathering information for the empirical guideline. 9 On the other hand, it is unknown how prevalent bacterial infections and antibiotic resistance are among people with COVID-19.

Methodology

The researchers came to the conclusion that a retrospective technique would be the best fit for the study. The event that prompted this narrative took place at the Index Medical College in Indore.Sample size was 100, Patients who had been diagnosed with COVID and were at least 20 years old were needed to satisfy the inclusion criteria. A pick was fashioned without any discernible pattern. In order to carry out processes such as bacterial identification and antibiotic susceptibility testing, an automated microbiology analyzer was used (AST). Antibiotics such as ceftriaxone, cefotaxime, ampicillin/sulbactam, and ciprofloxacin were found to be effective in treating GNB. In the meanwhile, it was determined that the antibacterial drugs oxacillin, linezolid, vancomycin, and levofloxacin were successful in treating GPB. Last but not least, a percentage of an antibiotic's resistance is considered to be high when it is equal to or more than 20% of the total resistance.

Results

Beta-lactam combinations (ampicillin-sulbactam; high range resistance of 25–99%); cephalosporins (ceftriaxone; high range resistance of 23–79%; cefotaxime; high range resistance of 21–80%); and fluoroquinolones (ciprofloxacin; high range resistance of 22–99%) are commonly used as first-line treatments for respiratory and non-respiratory infections, respectively. Extended-spectrum beta-lactamases (ESBL) were shown to be prevalent at a rate of 33% in K. pneumoniae, whereas they were 67% prevalent in E. coli. In spite of levofloxacin's high rate of resistance (ranging from 25% to 86%), it is often employed as the first line of defence against respiratory infections. Oxacillin resistance, a surrogate marker for methicillin-resistant Staphylococci, ranged between 80% and 92% in respiratory and non-respiratory specimens from the CoNS group. These results were the same whether the samples were taken from the lungs or elsewhere in the body. The results were the same regardless of where the samples were collected in the body

(the lungs or elsewhere). Methicillin-resistant Staphylococcus aureus (MRSA) infection rates were modest, at 7% of specimens tested. This was because methicillin is the only antibiotic MRSA is resistant to.

Conclusion

17.2% of patients in the COVID-19 study were discovered to have bacterial infections, which were most often brought on by Gram-negative bacteria. Antibiotics like as fluoroquinolones and cephalosporins are often used as first-line therapy in Indore. These antibiotics are used to treat a variety of illnesses, including respiratory and non-respiratory infections. Antibiotics of all classes were shown to be ineffective against the individual strains that were investigated. Continuous monitoring of antibiotic resistance using suitable surveillance methodologies is essential for avoiding the COVID-19 pandemic's long-term impacts, particularly bacterial infections. This is especially true in light of the fact that the pandemic was caused by COVID-19.

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