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A Brief Discussion on Antimicrobial Resistance

Fletcher Pierpoint*

Department of Microbiology, Princeton University, Princeton, UK

***Corresponding Author:** Fletcher Pierpoint, Department of Microbiology, Princeton University, Princeton, UK, E-mailid:fletcher23@gmail.com*

DESCRIPTION

Microbes develop ways to protect themselves against the effects of antimicrobials, which is known as antimicrobial resistance. Antibiotic resistance is a subtype of AMR that refers to microorganisms that develop antibiotic resistance. AMR infections kill millions of people each year. Resistant microorganism infections are more difficult to treat, necessitating greater antibiotic doses or alternate treatments that may be more harmful. These methods may potentially be more costly. Multidrug-resistant bacteria are those that are resistant to numerous antimicrobials. Microbes of all types can develop resistance. Antifungal resistance develops in fungi. Antiviral resistance develops in viruses. Antiprotozoal resistance develops in protozoa, and antibiotic resistance develops in bacteria. Extensively drug-resistant or fully drug-resistant microorganisms are occasionally referred to as superbugs. Bacterial resistance can develop naturally as a result of genetic mutation or as a result of one species acquiring resistance from another. Resistance can emerge as a result of chance mutations. Extended usage of antimicrobials, on the other hand, appears to increase mutation selection, which can render antimicrobials useless. Antibiotic abuse, which can lead to antibiotic resistance, should be avoided by only taking antibiotics when they are recommended. When possible, narrow-spectrum antibiotics are preferable over broad-spectrum antibiotics because they are more effective at targeting specific organisms and are less likely to induce resistance and side effects. People who take these medications at home must be educated on how to use them properly. Health care providers can help prevent the transmission of resistant illnesses by practicing good sanitation and hygiene, such as hand washing and disinfection between patients, and encouraging patients, visitors, and family members to do the same. The use of antimicrobials in humans and other animals, as well as the dissemination of resistant strains between the two, are the main causes of rising antibiotic resistance. Growing resistance has also been related to the pharmaceutical sector leaking insufficiently treated effluents, particularly in nations where bulk medicines are made. Antibiotics boost selective pressure in bacterial populations, causing vulnerable microorganisms to die, resulting in a rise in the percentage of resistant bacteria that survive. Resistant bacteria can be found even at very low dosages of antibiotics. Bacteria have growth advantage and proliferate faster than vulnerable bacteria even at very low levels of antibiotic. Antibiotic resistance is becoming more widespread, necessitating the development of alternate treatments. There have been calls for novel antibiotic medicines, but new drug development is becoming rarer. Antimicrobial resistance is on the rise worldwide as a result of rising antibiotic prescriptions and dispensing in poorer countries. Estimates range from 700,000 to several million deaths every year, and the disease continues to be a major public health concern around the world. Each year, at least 2.8 million people in the United States become sick with antibiotic-resistant bacteria, resulting in at least 35,000 deaths and US$55 billion in higher health-care expenses as well as lost productivity by 2050, the World Health Organization (WHO) forecasts that AMR will have caused 350 million deaths. According to a United Nations study, the annual death toll will reach 10 million by then. There have been widespread appeals for global action to combat the issue, including proposals for worldwide antimicrobial resistance treaties. Antibiotic resistance is not totally understood worldwide, although it is more prevalent in poorer nations with weakened healthcare systems. Because scientists were focused on SARS-CoV-2 research during the COVID-19 epidemic, progress against antibiotic resistance lagged.