

Uses of Antimicrobials Agents

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EDITORIAL NOTE

An antimicrobial is a substance that kills or inhibits the growth of bacteria. Antimicrobial drugs are classified by the bacteria against which they are most effective. Antibiotics, for example, are used to treat bacteria, whereas antifungals are used to treat fungi. They can also be categorised based on their function. Antimicrobial chemotherapy is the use of antimicrobial drugs to treat infection, whereas antimicrobial prophylaxis is the use of antimicrobial medicines to prevent infection. Antimicrobial agents are divided into three categories: disinfectants, antiseptics, and antibiotics. Disinfectants kill a wide range of bacteria on non-living surfaces to prevent the spread of illness. The term "antibiotic" was once only used to designate formulations generated from living bacteria, but it is now also used to denote synthetic compounds like sulfonamides and fluoroquinolones. Though the term was once limited to antibacterials (and was frequently used as a synonym for them by medical practitioners and in medical literature), it has now expanded to encompass all antimicrobials. Antibacterial agents are split into two types: bactericidal agents that kill bacteria and bacteriostatic agents that inhibit or stop bacterial growth. As a result, advances in antimicrobial technology have resulted in systems that can do more than only prevent microbial growth. Instead, certain porous media have been designed to destroy germs when they come into touch with them. Bacterial infections are treated using antibacterials. Beta-lactams, macrolides, quinolones, and tetracyclines are the different types of antibiotics. Their antimicrobial spectra, pharmacodynamics, and chemical composition determine their classification within these groups.

The use of certain antibacterials over an extended period of time can reduce the amount of enteric bacteria, which can have a negative influence on the digestive system. Antibacterials are one of the most routinely prescribed treatments, as well as one of the most frequently misdiagnosed by doctors, as in viral respiratory tract infections. Antibiotic-resistant organisms have emerged more quickly as a result of extensive and indiscriminate use of antibacterials, posing a severe threat to global public health. The problem of resistance necessitates a renewed attempt to find antibacterial agents that are effective against pathogenic bacteria that are resistant to conventional antibacterials. Increased sampling from various environments, the use of metagenomics to uncover bioactive compounds produced by currently unknown and uncultured microbes, and the development of small-molecule libraries tailored for bacterial targets are all possible techniques toward this goal. Antifungals are drugs that destroy or stop fungus from growing. They're used to treat diseases like athlete's foot, ringworm, and thrush in medicine, and they function by exploiting distinctions between mammalian and fungal cells. Fungi and humans are both eukaryotic, unlike bacteria. As a result, at the molecular level, fungal and human cells are comparable, making it more difficult to locate a target for an antifungal treatment that does not also present in the host organism. As a result, some of these medications have a lot of negative effects. If the medicine is not used properly, some of these adverse effects might be fatal. Antifungals are frequently sought after to control indoor mould in damp or moist home materials, in addition to their medical applications. Baking soda (sodium bicarbonate) sprayed on surfaces works as an antimicrobial.

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