

THE RANGE OF EFFECTS OF ANTIBIOTIC DRUGS ON THE HUMAN BODY.

Akramov Farrukh Kahramonovich 503 is a student of group B

farruxakramov402@gmail.com

Umarov Shokhrukh Kholmurod corner 503 group B

umarovshoxrux769@gmail.com

Assistant Jumaeva Nilufar

nilufar@gmail.com

Termiz Branch of Tashkent Medical Academy

Abstract: Antibiotics are very useful and important drugs when used correctly. They fight infections and diseases caused by bacteria. Well-known antibiotics are: penicillin, tetracycline, streptomycin, chloramphenicol, and sulfonamides. Antibiotics are drugs used to prevent and treat infectious diseases. "Anti" means "against" and "biotic" means "life." They kill only certain life forms, namely disease-causing bacteria. But these substances themselves are made from living organisms such as bacteria, various compounds, and larger plants.

Key words: Antibiotics, microorganisms, penicillin, actinomycetes, fungus, bacteria.

Antibiotics are chemical compounds of biological origin that selectively injure or kill microorganisms. Antibiotics used in medical practice are obtained from actinomycetes (light-emitting fungi), molds, and some bacteria. Preparations of this group include synthetic analogues of antibiotics and derivatives of natural antibiotics. In 1928, when Sir Alexander Fleming discovered penicillin, the production of antibiotics began. His discovery was studied by other scientists and led to the discovery of new antibiotics. Soil samples from around the world have been studied to find microorganisms that can produce substances that can be used to fight infectious bacteria. As a result, today there are many antibiotics containing penicillin, streptomycin, aeromycin, terramycin. Some of them are toxic to the body in addition to affecting disease-causing bacteria. The term antibiotics was proposed by the American scientist Z. Waxman to refer to substances that are formed in microbes and have an effect against other microbes. Antibiotics disrupt the metabolism of disease-causing (pathogenic) microbes, killing them or stopping their growth. Antibiotics have different effects on different microbes. For example; while one antibiotic has a strong effect on a specific microbe, it has a weak effect on another microbe or does not affect it at all; Most antibiotics destroy not only microbes, but also human, animal, and plant organisms (tissues and cells). Therefore, in medicine, veterinary medicine and plant science, only its types that kill harmful microbes, but do not destroy human, animal and plant organisms are used. In 1939, Dubo was able to obtain the first antibiotic drug (thyrothricin) from *Bacillus brevis*, a bacterium living in the soil. In 1941, with the English scientist H. Florey, Antibiotics, Fleming managed to obtain penicillin from the broth filtrate of the mold fungus (*Penicillium poshit*), G. F. Gauze and M. G. Brajnikova, in 1942, gramicidin from soil bacteria, and Z. A. Waxman, in 1944, managed to obtain streptomycin from the fungus *Streptomyces griseus*. So far, more than 2000 types of Antibiotics have been identified and this work is ongoing. Only 10-20 of them (penicillin, streptomycin, oxytetracycline, cephaloridine, erythromycin, levomycetin, etc.) are used in practice.

The management of microbial infections in ancient Egypt, Greece, and China is well-documented. The modern era of antibiotics started with the discovery of penicillin by Sir Alexander Fleming in 1928. Since then, antibiotics have transformed modern medicine and saved millions of lives. Antibiotics were first prescribed to treat serious infections in the

1940s. Penicillin was successful in controlling bacterial infections among World War II soldiers. However, shortly thereafter, penicillin resistance became a substantial clinical problem, so that, by the 1950s, many of the advances of the prior decade were threatened. In response, new beta-lactam antibiotics were discovered, developed, and deployed, restoring confidence. However, the first case of methicillin-resistant *Staphylococcus aureus* (MRSA) was identified during that same decade, in the United Kingdom in 1962 and in the United States in 1968.

Antibiotics have a specific effect on different microorganisms. For example, penicillin has a stronger effect on gram-positive microorganisms, and streptomycin, on the contrary, on gram-negative microorganisms. Wide spectrum of action Antibiotics, such as tetracyclines, are effective against a number of bacteria. It is known that the effect of penicillin depends on the inhibition of the synthesis of the microbial cell wall. Antibiotics interfere with specific stages of biosynthesis of proteins and nucleic acids in the microbial cell. Antibiotics are a powerful tool for the treatment and recovery of various infectious diseases such as septic diseases caused by staphylococci and streptococci, dysentery, diarrhoea, rash, cholera, and tuberculosis. They are especially useful in the treatment of diseases of the respiratory tract, stomach, intestines, urinary tract and genitals. Some Antibiotics are added to the main feed of poultry, pigs and calves in order to accelerate their growth and increase the assimilation of food. Due to their selective inhibitory effect on the cell, antibiotics are important in determining the relationship between the synthesis and function of DNA, RNA, proteins and cell wall, which ensure cell growth. They are also widely used in the food industry (canning). In agriculture, it is used to protect plants from fungal and bacterial diseases (see Microbiological protection method). Depending on the way of impact on pathogens Antibiotics with direct effect; Antibiotics that neutralize toxins released by pathogens; Antibiotics affecting the host plant; It is divided into Antibiotics, which become highly active substances in the plant body and increase the resistance of plants to diseases (indirect effect). It includes streptomycin, terramycin, dihydrostreptomycin, griseofulvin (grizovin), anisomycin, omphoterpsin, filicin and other effective antibiotics. Trichodermin is used in the fight against verticilliosis wilt of cotton and diseases of agricultural crops: protected soil cucumber, tomato root rot, potato rhizoctoniosis, wheat helminthosporiosis, corn scab and others. The technology for obtaining trichodermin was developed based on the Tashkent strain of trichoderma. It is used by dusting with dust and soaking planting materials (seedlings, cuttings, cuttings, seeds) in solutions. Antibiotics are easily absorbed and distributed in the plant body, and are effective at weak (0.1 — 0.01 — 0.001 and less) concentrations. When antibiotics are sprayed, glycerin, sorbitol, and diethylene glycol are added to the solution in order to increase their absorption into the leaves.

Many serious diseases in the world are becoming resistant to antibiotics. The main reason for this is that antibiotics are widely used in common diseases. If we want antibiotics to continue saving people's lives, the scope of their use should be limited compared to the present. It depends on how rationally they are used by medical personnel and people themselves. Most common infections do not require antibiotics. Simple skin infections can usually be treated with soap and water, a warm compress, or a cold compress. Simple respiratory infections are best treated with plenty of fluids, good quality food, and plenty of rest. Antibiotics are unnecessary for many cases of diarrhea and may even be harmful. The main thing is to drink a lot of liquid and feed as often as the child eats.

References:

1. Golkar Z, Bagazra O, Pace DG. Bacteriophage therapy: a potential solution for the antibiotic resistance crisis. *J Infect Dev Ctries*. 2014;8(2):129–136. 13. [[PubMed](#)] [[Google Scholar](#)]
2. Sengupta S, Chattopadhyay MK, Grossart HP. The multifaceted roles of antibiotics and antibiotic resistance in nature. *Front Microbiol*. 2013;4:47. [[PMC free article](#)] [[PubMed](#)] [[Google Scholar](#)]
3. Pharmacology (Harkevich). LESSON 11-13 Antimicrobial and parasitic material Harkevich_

