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Mini Review

Progress in Overcoming the Problem of Antibiotic Therapy

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Abstract

The scope of antibiotics is the treatment and prevention of infectious diseases in humans and animals. Thanks to antibiotics, millions of lives have been saved, human life expectancy has been significantly increased, and infant mortality has been reduced. However, the effectiveness of their use is steadily declining, which has led to an increase in mortality (more than 1 million people die every year from antimicrobial drug resistance and this figure is growing rapidly). For this reason, tuberculosis, pneumonia, gonorrhea, and other diseases are more difficult to treat diseases. The World Health Organization has named antimicrobial resistance as one of the 10 global threats to public health. The search for new antibiotics lags behind the rate of addiction to them. Our practical experience in using bee products as natural antibiotics has shown their high efficiency. This paper presents a brief overview of our research.

Keywords: Antibiotic Therapy, Benefits of Biological Antibiotics, Experience in the Effective use of bee Products, Forms of Organization of Production and Use of Natural Antibiotic

The Crisis is Antibacterial Therapy

Medicine is trying to continue the fight against pathogens by further searching for and using new antibacterial drugs. But at the same time, new mutant microbes are emerging that are able to resist new generations of antibiotics. This is facilitated by: massive uncontrolled and improper use of antibiotics, non-selectivity of their action, which worsens the microflora (dysbacteriosis), adverse reactions (allergies), it is necessary to take into account their use in animal husbandry. Therefore, the search for new antibiotics does not stop, although it is accompanied by huge material and other costs.

Modern Mass Production of Antibiotics. Advantages And Disadvantages

The history of the development of pharmacological production is the history of the development of chemistry and technology, the production of medicinal substances from simple to more complex (plants, minerals, synthetic substances, antibiotics, vitamins, enzymes, etc.). This is the history of the development of production from the first pharmacies to the mass production of medicinal chemicals. The main advantages of mass production: the release of large volumes of standardized products, compliance with the specified quality perimeters, shortening the production cycle, the possibility of automating production, obtaining high profits. In the pharmaceutical industries followed the path of least resistance, preferring to work with substances that, without loss of their properties, lend themselves to chemical, thermal, electrophysical, mechanical, hydromechanical treatments. The narrowing of the raw material base did not allow achieving the main thing - the absence of resistance to them by certain pathogens, which led to the absence of fundamentally new antibiotics. All in anticipation of the release of "miracle" drug developments, whose potential to radically change known treatments, will reduce the side effects of antibiotic use.

Benefits of Using Biological Antibiotics

A special place among natural antibiotics is occupied by: Propolis - a brown sticky substance with which bees cover the cracks in the hives. Its most important properties: stimulation of immunobiological processes in the body, suppression of reproduction and destruction of many microorganisms, including tubercle bacillus, viruses and fungi. The next super effective biological stimulant and natural antibiotic is royal jelly, a special food that bees use to feed the queen larvae and which the queen bee feeds on throughout her life. Royal bee milk has an

immunomodulatory and antitumor effect, increases the body's resistance to viral and bacterial infections. And wax moth larvae are the only living creatures on Earth that feed on wax. Extracts and tinctures of wax moth larvae are broad-spectrum antibacterial and antiviral drugs, their use promotes tissue healing without scarring, and has an antioxidant and antitoxic effect. What these natural antibiotics have in common is to provide a curative effect where other remedies have been unsuccessful, and recovery occurs earlier than with the use of conventional means in the absence of toxicity and side effects. And, most importantly, they do not cause the development of resistance to their effects in microbes. This is due to the fact that the composition of these bee products has a unique feature - it is constantly changing, as it depends on the changing factors of their formation: on the variety of plants used by bees; changes in the morphological characteristics of the worker bee, fluctuations in climatic conditions.

Experience of Practical Application of Biological Antibiotics

A practical way out in the crisis of antibiotic therapy was the recognition by scientists of the importance of alternative methods of combating bacterial infections. These are two methods - scaling up vaccinations and the use of natural antibiotics. The use of drugs based on propolis, milk and wax moth is much more effective than their single use. Let's consider an example of the complex use of these products in the prevention of viral diseases (including coronavirus). This prevention scheme was developed by us in 2020, tested by volunteers throughout 2020 -2022 (Ukraine). In the diet the following products are introduced:

1. Royal jelly (daily dose - 0.25-0.50 g)
2. Zabrus - (daily dose -30-40g)
3. Tincture of bee moth - (daily dose 8-4 drops / 10 kg of body weight)
4. Propolis oil - (daily dose 1-1.5 g).

The mechanism of action of substances ensures effective prevention of viral diseases, including COVID-19, by strengthening immunity, improving metabolism, optimizing anticoagulant parameters, protecting the nasopharynx from the penetration of viruses. The course of prevention lasts 1.5 months and is carried out twice a year. The next example of the effective complex use of natural antibiotics is the developed and tested by us suspension medicine SR-21. Its composition: native (live) royal jelly (100% Native Royal Jelly), powder from crushed ginseng roots (Pánax), coenzyme Q10, auxiliary substance - white acacia honey. For patients undergoing antibiotic therapy, the use of this suspension mixture enhances the therapeutic effect of antibiotics, reduces toxicity, and reduces the side effects of chemotherapeutic drugs. In 2018, we developed an ointment formulation based on royal jelly and propolis. The high clinical efficacy of its use for the period from 2018 to 2022 was confirmed in the treatment of a number of diseases (trophic ulcers, erysipelas, wounds, psoriasis), when the use of conventional means was unsuccessful. The high efficiency of the treatment of chronic bacterial prostatitis (in case of unsuccessful use of conventional medicines) was also confirmed by the rectal propolis suppositories developed by us with native royal jelly (not lyophilized, when the frozen product goes through the drying stage in a special chamber; not adsorbed, that is, preserved with the help of a special food adsorbent, but live). We also recommend their use after surgery and serious illnesses (strokes, heart attacks) and chemotherapy), with impotence and infertility. Currently, we are working on the use of wax moth suspension medicine in the treatment of coronavirus diseases (as the main drug). Positive stable results have been obtained (15 patients were observed). Full recovery occurs on days 7-10, no complications were observed.

Discussion on the Limitations

The limitation is a negative reaction to bee products, which is typical for about 7% of the total population, as well as adrenal disease.

Results

The use of drugs based on natural antibiotics has shown to be highly effective in overcoming the crisis of antibiotic therapy. But there are factors limiting their mass application. Objective - not manufacturability of biological substances containing natural antibiotics, the impossibility of synthesizing them at the current level of development of science and technology. And, as a consequence of this, the unreality of the organization of mass production with all its benefits. The solution to this problem can be the organization of the manufacture of such drugs in the conditions of pharmacy organizations. The advantages of extemporaneous production of these drugs include the possibility of individual selection of the composition and dosage, taking into account the age, concomitant chronic diseases of the patient, and minimizing side effects. Technological progress in the production of modern laboratory equipment, mobile individual ice packs, new types of containers and packaging. Without competing with mass production, the pharmacy will successfully occupy the niche for the production of natural antibiotics, and their use will solve the problem of drug resistance to antimicrobials. The subjective factor is the lack of knowledge among potential consumers about natural antibiotics, their properties and the effectiveness of their treatment. This problem can be solved with the help of creation and financing of the World Health Organization of an extra-national Internet society of doctors, pharmacists, patients on the use of natural antibiotics in the context of the antibacterial therapy crisis.

Ethical Consideration

A verbal commitment was received from volunteers for the use of beekeeping products.

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Conflict of Interest

The authors declare no conflict of interest. Author Sergey Roslyak is an independent researcher, not an employee of government agencies and private companies offering contract development services for the pharmaceutical industry.

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