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Prospects for the Creation of Drugs (Experience in the Treatment and Prevention of Recurrent Ulcers on the Background of Diabetes Mellitus)

Sergey Roslyak*

Independent Researcher, Associate Professor, Ukrainian State University of Food Technologies, Kiev, Ukraine

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***Corresponding author:** Sergey Roslyak, Independent Researcher, Associate Professor, Ukrainian State University of Food Technologies, Kiev, Ukraine. Email id: roslyak@meta.ua

Abstract

According to the International Diabetes Federation, 9.1–26.1 million diabetic patients are diagnosed with foot ulcers worldwide every year. The frequency of formation of foot ulcers is detected in more than 11% of all patients with diabetes mellitus. The development of circulatory failure of the lower extremities often leads to prolonged non-healing and amputation of the limbs [1]. Unfortunately, the number of amputations in the world is increasing annually, both in absolute and relative terms. This work is devoted to determining the causes of the current situation and ways to eliminate them.

Keywords: Recurrent Ulcers; Diabetes Mellitus; Propolis; Native Royal Jelly

Introduction

The main causes of ulcers in the first place include progressive infections, the danger of which is that the wound does not heal, often recurs. To protect the ulcer from infection, special wound healing agents are used, the effectiveness of which is reduced. Medicine is trying to continue the fight against pathogens by further searching for and using new drugs [2,3]. But at the same time, new mutant microbes are emerging that are able to resist new drugs. The search for new antibiotics does not stop, although it is accompanied by huge material and other costs. The history of the development of pharmacology 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, and others). In the pharmaceutical industry, they followed the path of least resistance, preferring to work with substances that without loss of their properties, they 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. A practical way out in the crisis of antibiotic therapy was the recognition by scientists of the importance of alternative methods of fighting infections, primarily the use of natural antibiotics. A special place among these products in terms of its effectiveness is occupied by propolis - a brown sticky substance with which bees cover the cracks in the hives [4]. Its most important properties: stimulation of immunobiological processes in the body, suppression of reproduction and destruction of viruses, many microorganisms, including tubercle bacillus and fungi. The next super effective biological stimulant is royal jelly - a special food that bees use to feed the queen larvae and which the queen bee feeds on throughout her life [5]. Royal jelly has an immunomodulatory and antitumor effect, increasing the body's resistance to viral and bacterial infections.

Materials and Methods of Research

In view of the high demand for new effective drugs that have a comprehensive effect on the course of the pathological process, we have developed the composition of the SR-19 ointment with native (not subjected to outside interference and retained its

appearance and properties) royal jelly and propolis. Its (SR-19 ointment) difference is the absence of a drug base, which made it possible to achieve maximum effectiveness of medicinal substances. Royal jelly is a strong biological stimulant of all types of metabolism. In its composition, it has no analogues in nature. The composition of royal jelly is complex and includes: 65% water, 14-18% proteins, 9- 19% carbohydrates, 2-5% fats, mineral salts, trace elements, B, H, PP vitamins, folic, pantothenic acids, nucleic acids, bio stimulants. Royal jelly proteins are rich in essential amino acids and are complete. They contain 21 amino acids (glycine, alanine, valene, cysteine, tyrosine, aminobutyric acid and others) [6]. Milk contains a large number of free sulfhydryl groups. Along with the so-called proteinogenic amino acids, which are part of protein molecules, γ-aminobutyric acid contained in milk is of great importance, which plays an important role in the transmission of nerve impulses and improves metabolism in the brain. In milk, in addition to bound proteins, there are also free amino acids, as well as amines and amides. The main groups of protein substances are simple proteins - albumins and globulins in a ratio of 2:1. The presence of γ-globulin in royal jelly was confirmed by electrophoretic analysis of globulins. The presence of complex proteins of glycoproteins, lipoproteins and nucleoproteins has also been established. It also contains 14-15 different trace elements. With the systematic use of royal jelly, the process of protein formation is stimulated in the body, the synthesis of γ-globulins is enhanced, in the fraction of which most of the antibodies are located [7].

Some milk proteins have enzymatic activity, catalyzing the processes of hydrolytic cleavage of sucrose, starch, choline esters, proteins, oxidation of glucose, ascorbic acid and other organic compounds. Royal jelly has antibacterial, antiviral and antitumor effects. Contraindications for the use of royal jelly include Addison's disease. Propolis (also called "bee glue") is a plasticine-like substance produced by bees. Approximately 50-60% of propolis consists of resins and pollen balm. It contains resins, wax and essential oils, which have an antiviral effect, tannins have an anti-inflammatory effect, help regenerate damaged tissues; terpenic acids - a pronounced antifungal effect. Propolis also includes kaempferol, rhamnasin, rhamnocentrin, acacetin, isorhamnetin, which have an active antimicrobial and wound healing effect. In bee glue also contains organic acids, in particular: benzoic, coffee, which effectively stop the development of bacteria, and also have analgesic properties [8]. In total, this product contains about 50 active substances. The ability of propolis to actively eliminate a wide range of harmful microorganisms, suppress their activity, including even tubercle bacillus, various types of viruses, fungi, candidiasis, has been established. And, most importantly, due to the fact that the composition of the propolis substance is constantly changing, since it depends on the types of honey plants, climatic conditions, bee morphology, microorganisms do not develop to it addictive. When applied to the surface, up to 20% is absorbed. It does not accumulate in the body and is excreted mainly by the kidneys during the day. Propolis can significantly slow down the development and growth of viruses, and it can also be used to prevent further development of infection. It is undesirable to use for allergic dermatitis and negative reactions to bee products. Developing ointment SR-19, we based on the main action of royal jelly - this is the mobilization of the body to fight disease, propolis - improving the immune system, anti-inflammatory and antioxidant properties. To achieve the set goals, when developing the composition of the combined ointment SR-19, the ratio and amount of the components of the composition were selected in such a way as to provide the necessary medicinal properties, as well as their fast and long-term action. Experimental studies conducted earlier, it was found that native royal jelly, unlike sublimated milk, reveals a more pronounced pharmacological effect, in addition, its effect is significantly enhanced in combination with propolis. Setting a cohort of patients organized from volunteers who gave an oral report.

Results

Since the concentration of active substances in the dosage form is considered one of the factors affecting the further pharmacological action of the drug, in order to determine the optimal composition in the developed ointment SR-19, at the first stage of experimental studies, a comparative analysis of the composition in the developed medicinal preparations for external use was carried out - native royal jelly 30-35%, propolis 70-65%. A group of volunteers (8 people, age composition 61-82 years), with purulent-necrotic complications diabetic foot syndrome, applied the recommended ointment for 14 days 3 times a day in the first year - quarterly, the second - as needed. The appearance of a distinct clinical effect depended on the severity of the purulent process and intoxication and ranged from 5 to 10 days. The maximum therapeutic effect was ensured with minimal impact on the body of a patient suffering, as a rule, from severe concomitant diseases [9]. At the same time, preventive measures were taken, which consisted in taking the SR-21 suspension developed by us, which was taken for 14 days every three months for 2 years. A single dosage for prophylactic purposes of a standardized substance (2.0% royal jelly, 1.5% ginseng, 1.5% coenzyme Q 10 95.0% locust honey) is 18 ml. There is a stable increase in tone and performance, an increase in exercise tolerance, an improvement in appetite and sleep quality, and maintaining a cheerful mood. The ongoing prophylaxis also enhanced the therapeutic effect of essential drugs, reduced toxicity and side effects of chemotherapeutic drugs, increased immune status and body resistance. The use of the suspension did not cause any negative phenomena and addiction. The use of the developed SR-19 ointment and SR-21 suspension provides a comprehensively new and advantageous option for the treatment and prevention of recurrent ulcers associated with diabetes mellitus.

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Discussion

The positive results of using the developed preparations based on native royal jelly represent an attractive concept for the development of new pharmaceutical products in the treatment and prevention of recurrent ulcers. Of particular importance is the use of the developed suspension by postoperative patients, as it increases the physical activity of convalescents during the rehabilitation period, stimulates tissue repair, stabilizes blood pressure and heart function in patients with unstable hemodynamics in the postoperative period, normalizes metabolism and restores the functioning of the reproductive and endocrine systems. It can be used for early enteral nutrition of operated patients. Although this study has many strengths (high efficacy, low drug budget, availability, possibility of parallel use of pharmaceuticals, absence of complications), there are limitations. First of all, they must be attributed to the insufficient volume of clinical studies.

Conclusions

The composition of the ointment and suspension under the conditional name SR-19 and SR-21, respectively, was experimentally substantiated for use in the complex treatment and prevention of recurrent ulcers. The complex use of ointment and suspension in recommended doses made it possible to stabilize the condition of patients, and further contributed to their recovery. It should be noted that the incorrect application of the prevention scheme, without taking into account the individual characteristics of the organism, can be harmful, cause disappointment, and give rise to distrust in its effectiveness.

References

1. Carmody BJ, Arora S, Wakefield MC (2002) Progesterone inhibits human infragenicular arterial smooth muscle cell proliferation induced by high glucose and insulin concentrations. J Vasc Surg 36(4): 833-838.
2. Zimny S, Dessel F, Ehren M (2001) Early detection of microcirculatory impairment in diabetic patients with foot at risk. Diabetes Care 24(10): 1810-1814.
3. Malykhin VE (2012) Creative beekeeping p: 19.
4. Malykhin VE (2013) Mother's milk. Homogenate. Conclusion of queens. (Production technology) pp: 114.
5. Malykhin VE (2021) Two-semester content in the annual cycle.
6. Roslyak SP (2021) Abstracts of the report - International scientific and practical conference Apiotherapy: scientific achievements and prospects for the development of the industry in Ukraine.
7. Strachunsky, LS, Belousov YB, Kozlov SN (2009) Practical Guide to Anti-Infective Chemotherapy.
8. Reiber GE, Boyko EJ, Smith DG (2002) Lower extremity foot ulcer and amputations in diabetes. In: M.I. Harris, C. Cowie, M.P. Stern (Eds.) Diabetes in America pp: 95-1468.
9. Tolmacheva EA Trophic ulcer of the lower leg, foot.

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