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The Use of Complex Suspension SR-21 in the Prevention and Treatment of Tumors

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Abstract

The problem of treating several diseases, including tumors, is far from being solved. Effective preparations have not been created and prevention schemes have not been developed that allow you to deal with these diseases quickly and effectively. The pharmaceutical industry followed the path of least resistance, preferring to work with substances which, without loss of their properties, are subject 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 drugs. Everyone is waiting for "miracle" drug developments to enter the market, the potential of which to radically change known methods of treatment will reduce the side effects of the use of existing ones.

Keywords: Prevention; Treatment; Tumors; Native Royal Jelly

Abbreviations: ALL: Acute Lymphoblastic Leukemia; MRD: Minimal Residual Disease

Introduction

A practical solution was the recognition by scientists of the importance of alternative methods of control. First, this is the use of natural bee products that can suppress the vital activity of viruses, cytostatic (suppressing tumor growth) and antitumor properties. A special place among beekeeping products is occupied by royal jelly, a special food that bees use to feed the larvae for growing queen bees and which the queen bee feeds on throughout her life. This jelly-like mass of milk contains up to 18% protein, from 10 to 17% sugar, up to 5.5% fat and more than 1% mineral salts, amino acids, and vitamins, it is also rich in sex hormones, vitamin E, which stimulates sexual activity. Jan Swammerdam (1690) noticed that the queen larvae, feeding on royal jelly, increase 1600 times in 5 days, and the life expectancy of the queen is 50 times longer than that of worker bees. The study of the medicinal properties of royal jelly began in the 50s of the 20th centuries, and in the 10s of the 21st century an attempt was made to synthesize it. However, when feeding the larvae with a synthesized product, they grew into worker bees, and not into queen bees. The impossibility of obtaining an identical synthesized product has significantly limited the availability and scope of use of royal jelly in the pharmaceutical industry. In addition, it should note the extremely short shelf life of live royal jelly - it is no more than 2 hours. Methods for preserving live native royal jelly have been developed - adsorption on powdered lactose, lyophilization, when it is dehydrated in vacuum at a temperature of -45°C. Dried lyophilized milk can be stored at temperatures from 0 to +14°C and relative humidity not higher than 75% for up to 5 years. This made it possible to use royal jelly in the industrial production of several drugs. For the first time, the use of royal jelly as an antitumor agent was proposed in 1957 at the international congress of physicians in France, and the treatment of cancer with royal jelly began in the 70s of the 20th centuries. The Canadian scientist Townsend found that leukemia, lymphosarcoma, adenocarcinoma, Ehrlich's carcinoma is cured with the help of royal jelly. Scientists Tamura (1986), Gavrilov (1993) found that royal jelly increases the life expectancy of laboratory animals with transplanted tumors, which is due to the stimulating effect of decanoic acids contained in royal jelly on the hormonal status of the adrenal cortex. When conducting research on the use of royal jelly (2004) by patient's lymphogranulomatosis of the second stage, the fact of neutralization of free radicals by milk was established. Scientists of the Yaroslavl Medical Institute studied the effect of intravenous milk solution on the ratio of protein fractions of blood serum and found that the introduction of royal jelly increases the amount of

globulin fractions and plays an important role in the metabolism, for example, of vitamin B_{12}. It is on this change that the beneficial effect on patients with pernicious anemia is based [1-4].

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 and technology of a complex suspension of SR-21 with native (not subjected to outside interference and retained its appearance and properties) royal jelly, ginseng, and coenzyme Q10. The effective action of the constituent substances in suspension depends on many factors, the most important of which is the optimally selected base. The ideal basis for CP-21 is white locust honey, as a hypoallergenic product (a product with low or no allergenicity, that is, not capable of causing allergies), a preservative that not only preserves the unique properties of substances, but also enriches them with useful properties (it is an antioxidant, has antimicrobial properties, improves immunity, is an energy drink). When developing the SR-21 suspension, we were based on the main action: royal jelly is the mobilization of the body to fight the disease; ginseng - inhibition of tumor growth, improvement of the immune system, anti-inflammatory and antioxidant properties; coenzyme Q10-destruction of free radicals, inhibition of the processes of premature aging of the body, restoration of immunity. To achieve the set goals, when developing the composition of the combined suspension SR-21, the ratio and quantity of the components of the composition were selected in such a way as to provide the necessary preventive and therapeutic properties, as well as their fast and long-term action, which composition includes active pharmaceutical ingredients - native royal jelly, ginseng root powder, coenzyme Q10 and excipient - white acacia honey. 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 ginseng and coenzyme Q10. When mixing the components with the base, the suspension samples did not delaminate. which made it possible to carry out further experimental studies with them. In connection with the above, native royal jelly was chosen as one of the main active ingredients for the developed drug, the optimal concentration of which in the developed suspension, according to the results of studying antitumor activity, is a concentration of 2% (for prevention) and 4% (for treatment). Ginseng is the next substance that is part of the developed drug, which has been used in medical practice for a long time to eliminate or reduce pain. For seriously ill patients, its general tonic and restorative effect, stimulation of the central nervous system, reduction of fatigue and exhaustion, normalization of hormonal levels, and stimulation of appetite are important. The main component of the next active pharmaceutical ingredient, which is part of the coenzyme Q10 suspension being developed, is a coenzyme, a unique microelement present in every cell of the human body. An element with strong antioxidant characteristics protects cells from the damaging effects of oxidative processes, viruses, and bacteria. With age and illness, the processes of microelement generation slow down, there is a lack of coenzyme. This leads to increased fatigue, muscle pain, chronic fatigue syndrome, decreased performance, a feeling of lack of energy, a subjective or objective feeling of lack of strength, deterioration in sleep quality. Increasing the level of the coenzyme will also enhance immune defenses, improve the functioning of the heart muscle, normalize fat metabolism, increase physical activity, and support cognitive functions. Setting A cohort of patients organized from volunteers who gave an oral report [4-6].

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, to determine the optimal composition in the developed SR-21 suspension, at the first stage of experimental studies, a comparative analysis of doses in the developed drugs for oral use was carried out. The results of practical application indicate that a single dosage for prophylactic purposes of a standardized substance (2% royal jelly, 1.5% ginseng, 1.5% coenzyme Q 10.95% locust honey) is 18 ml. A group of volunteers (45 people, age composition: 30-60 years-20% and 61-82 years-80%) took the recommended suspension for 14 days every three months for 2 years. There is a steady increase in tone and performance. For people 60+, there is an increase in exercise tolerance, and for people leading a sedentary lifestyle, an increase in resistance to physical inactivity. The use of the suspension did not cause any negative phenomena and addiction. The proposed addition to existing treatment regimens relates to a method for treating, reducing the intensity or elimination of acute lymphoblastic leukemia (ALL), including the introduction of a complex suspension of SR-21. A practical treatment regimen applied to patients of moderate severity. All 3 patients with laboratory confirmed acute lymphoblastic leukemia. Simultaneously with the standard treatment protocol, a suspension of SR-21 of the following composition was taken: - native royal jelly (4%), ginseng root powder (1.5%), coenzyme Q 10 (1.5%), excipient - white acacia honey (93 %) daily dose is about 20 ml. The use of the developed suspension provides a new and advantageous option for the treatment of acute lymphoblastic leukemia (ALL) in adults. The exact dosage will depend on the purpose of the treatment and will be determined by one of the skills in the art. The duration of the suspension was 4 weeks, followed by repeated cycles after a 2-week period. The use of the developed SR-21 suspension provided a new and advantageous treatment option for acute lymphoblastic leukemia (ALL), capable of converting minimal residual disease (MRD) positive acute lymphoblastic leukemia (ALL) into MRD-negative condition, this treatment is well tolerated. In view of this, the use of the developed suspension provides an effective addition to the main treatment. The use of the suspension by cancer patients enhanced the therapeutic effect of the main drugs, reduced toxicity, and

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side effects of chemotherapeutic drugs, increased the immune status and body resistance. As an adjuvant, it can also be used in the treatment of neoplasms of the gastrointestinal tract and an additional agent in the treatment of precancerous conditions and oncological diseases, used in the treatment of radiation sickness, the prevention of anemia, antitumor activity in leukemia, lymphosarcoma, adenocarcinoma and Ehrlich carcinoma. Provided an improvement in appetite and maintaining a cheerful mood [6-9].

Discussion

The positive results of using the developed suspension based on native royal jelly represent an attractive concept for the development of new pharmaceutical products in the treatment and prevention of tumors. Its use by postoperative patients is of particular importance, 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, be used for early enteral nutrition of operated patients. While this study has many strengths (high efficacy, low drug budget, affordability, concurrent use of drugs, no complications), there are limitations. First, they should be attributed to the insufficient volume of clinical trials [9-12].

Conclusions

The composition of the suspension under the conditional name SR-21 for use in the complex treatment and prevention of tumors was experimentally substantiated.

- The use of the suspension in recommended doses made it possible to stabilize the condition of patients, and further contributed to their recovery.
- Careful prevention carried out in 2021-2023 has reduced the risk of morbidity to almost zero. The results obtained during this period are convincing evidence of the effectiveness of the developed scheme for the prevention of tumor diseases It should be noted that the incorrect application of the prevention scheme, without considering the individual characteristics of the organism, can be harmful, cause disappointment, and give rise to distrust in its effectiveness.

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