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Bee products used in apitherapy

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ABSTRACT

Apitherapy is a branch of alternative medicine that deals with the use of bee products for the treatment and prevention of various diseases. The task of apitherapy is to improve the health of people at any age. This paper reviews the literature on the bee products used in apitherapy and their impact on the human body.

Keywords: honey, apitherapy, propolis, pollen, beebread

1. INTRODUCTION

The field of alternative medicine which is apitherapy does not work from day to day, it requires patience and perseverance. To use apitherapy each patient must be sure that are not with bee products allergies because allergic reaction may occur. Each person reacts differently to beeproduts treatment. The treatment should be adapted to individual needs and supported by available knowledge about bee products. These products guarantee that the diseased areas of the body will be adequately supplied with nutrients, oxygen and active drug substances.

All bee products if they are appropriately selected could contribute to inhibition the progression of the disease and even alleviate or cure [12].

2. MEDICINAL BEE PRODUCTS

Bee products include:

- pollen - a product that has been packed by worker honeybees into pellets
- propolis, honey nectar, bee bread - products that has been brought and processed by bees,
- royal jelly, bee venom and wax - substances that has been secreted by bees.

These products are very valuable to people, thanks to their unique medicinal properties. Many of them are characterized by antibacterial activity, accelerating tissue regeneration, immunostimulating action, and non-specific effects on the body, resulting in an improvement in overall well-being, faster health back after diseases. Consumed 100 grams of honey a day is recommended for people who used to drink a lot of coffee, tea, smoke cigarettes and drinking alcohol. That way could minimized the detrimental effects of drugs.

Indefectible supporters of apitherapy emphasize that, especially today, when significantly reduces food quality, it is advisable eat supplemental foods with bee products could have a positive impact on immune system, digestive system or metabolism. Honey and other bee-derived are great medicine substances for another reason - the possibility of consumption is almost unlimited due to the lack of threats overdose [2].

Pollen as male microgametophytes is formed in pollen cells of the anthers of plants, it is picked up by the bees and carried into the hive. Bee pollen has been a valuable medicinal and nutritional product. It is a product of multichemical composition. Bee pollen is rich source of natural sugars, minerals, vitamins, organic acids, amino acids, sterols, proteins. Such composition explained the nature of pro-health of bee pollen, and its great therapeutic successes reflected in the literature. It is an advantage that macro- and micronutrients are in bee-pollen in beneficial amounts and proportions for the human body. Adsorption of biologically active substances from bee pollen be in progress in the human gut with the participation of enzymes without damaging egzosporium pollen grains. Bee-pollen can affect beneficial effect on human metabolism and disorders in various diseases. It is also a carrier of all necessary biocatalysts which could be applied continually with its daily consumption. The antimicrobial properties of pollen are effective in the treatment of ulcerative colitis and treatment of constipation and associated with that diarrhea.

Bee-pollen has a beneficial effect on lipid metabolism in the liver, it decreases their contents and causing a restriction of deposition as a result of chronic diseases (intoxication, alcoholism, and diabetes). Bee-pollen increases the body's resistance to infections, the number of lymphocytes, antibodies, accelerates the treatment of infections. This bee product also helps improve the efficiency of the heart, and thus reduce its inefficiency, the long-term consumption could lead to the elimination of venous congestion.

Bee-pollen can reduce the fats level in blood serum, inhibits the clumping of platelets, prevents atherosclerosis, improves the treatment of post-infarction states. Bee-pollen ingredients, thanks to nutritional properties and toning could strengthen blood vessels and present in pollen routine increases the elasticity of blood vessels and prevents them from

cracking. It has a pronounced effect on the hematopoietic system, so it can be used for anemia, especially with iron deficiency anemia. Extracts of bee-pollen shows therapeutic effects on prostate diseases. Therapeutic efficacy of bee-pollen can be explained by its anti-inflammatory, decongestant, antibiotic and as well as supporter the body's resistance to infection. In chronic inflammation bee-pollen helps with antibiotics to treat prostate. Bee honey can be used for the treatment of allergic diseases, an effective treatment of allergic rhinitis, asthma or substantially decreases their symptoms.

The beneficial effect of the bee-pollen has also been confirmed in psychiatry, improves psychological well-being of people. This normalizing effect on the nervous system relies on the one hand on stimulating the depression, on the other hand sedative in states of excitement and nervousness. The addition of bee-pollen reduces the dose of antidepressants, moreover pollen protects the body from addiction to these preparations. Pollen thanks to nutrient properties regulates the activity of the nervous system, and thanks to improving the blood supply to the nerve tissue bee-pollen increases mental performance, eliminates the states of apathy, fatigue and physical and mental abuse of alcohol [1,4-8,11].

Propolis, commonly known as bee putty, is a resinous, sticky substance produced by bees formed after mixing the secretions of insects with resin collected from plants. The biological activity of propolis depends mainly from contents of bioflavonoids and their biological precursors. In propolis was detected hundreds of diverse chemical compounds like flavonoids, aromatic acids, esters, alcohols, aldehydes, vitamins, terpenes, lipid substances, trace elements important for the metabolism and reconstruction of human immunity (selenium, magnesium, iron, copper, zinc and chromium). The therapeutic effect is a synergistic effect of propolis contained in the compounds. One of the best known properties of propolis is antibiotic activity, especially against pathogenic bacteria and fungi. Propolis may be the only antibiotic which does not produce the antimicrobial resistance. Propolis works on all Gram+ and Gram- bacteria- aerobic and anaerobic. It causes damage to the structure of the bacterial cell wall and cell membrane.

Propolis destroy viruses. Propolis has a strong renewing properties of cartilage tissue, bone and soft tooth, can also reconstruct the blood vessels through the effect on the vessel wall and flowing in their blood. Propolis combats inflammation within the vein and eliminates the possibility of action of bad cholesterol the body by makes difficult to stick to blood clots to the vessel wall. Thanks propolis red blood cells reclaim flexibility and the ability to flow through small blood vessels. Propolis increases the ejection of blood from the heart to the right and left of the chamber, which improves blood circulation in the heart muscle. Propolis normalizes the digestive system in terms of functional and secretory, treats ulcers of the stomach and duodenum.

The pharmacological properties of propolis allow to make local anesthetic, pressure regulation, strengthen secretion of bile, detoxification of the liver. Propolis is used in the prophylaxis and treatment of influenza, colds. Propolis is applied in the treatment of inflammation of the mouth and gums, protects the body from lead poisoning, arsenic. Propolis is used not only internally but also externally in the skin diseases, surgical diseases, otorhinolaryngology problems, gynecology, obstetrics and proctologic diseases. Medicines based on propolis, due to the bacteriostatic and bactericidal effect, a positive effect on the treatment of skin damage caused by pathogens resistant to chemotherapeutics and antibiotics. Propolis is used in the treatment of difficult to heal wounds of post-traumatic and post-operative, frostbite, bedsores, as well as chemical burns, thermal and radiation.

These formulations cleanse the wound of dead tissue, they contribute to faster wound scarring, anti-inflammatory and analgesic [3,5,9].

Beebread is preserved by the bees pollen with added honey and bee secretions. Formed by providing to the hive pollen by bees foragers then submitting patches and then beaten by worker bees in brood cells. In preparing beebread worker bees add to the nectar and pollen slaughtered enzymes contained in saliva. At the hive approx. 30 °C begins the fermentation of bee-pollen induced by lactic acid bacteria allowing its preservation. Beebread is the main food of bee larvae, is the main source of protein in the diet of bees, determines their good health and successful development and state of health. Beebread has a higher nutritional value than pollen, better digestibility and richer chemical composition. It is a food rich in protein, vitamins, minerals, amino acids, fats, carbohydrates [13].

Beebread is better absorbed by the human body than pollen, because in the processing of pollen to the beebread it occurs dissolved envelope pollen, and then the absorption of vitamins increases several times. In beebread is considerably larger amount of peptides and free amino acids, because the proteins in beebread are more biologically active they are easily absorbed. Due to the proportions of ingredients beebread, it is a perfect supplementary nutrient vitamin deficiencies in the human body that often occurs in unilateral or poor diet. It works in different directions strengthening the body and restoring its proper functioning. Thanks to the composition of all essential amino acids, beebread has several times better composition than many valuable products with animal protein. Pollen has also good health and detoxifying properties. The use of beebread is analogous to pollen [1,5,10].

3. CONCLUSION

The review clearly indicates the beneficial effects of bee products on the human body. At present, more and more research confirms the effectiveness of apitherapy and shows mechanisms of action of bee products on the human body.

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