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Clinical Microbiology 2015: Medical importance of bee products- Ahmed G Hegazi- National Research Center

Ahmed G Hegazi
National Research Center

Abstract
Apitherapy had been well documented in traditional medicine for treating systemic immune diseases, allergic diseases, viral diseases and organic-specific inflammatory diseases since more than one thousand years. Apitherapy or the medical uses of honeybee products are range from royal jelly to bee venom. It was used by the ancient Egyptians as a homeopathic remedy for arthritis. The history of apitherapy extends back to ancient Egypt, China and Greece. Apitherapy (the term comes from the Latin APIs, which means “bee”), or bee therapy, is the use of honeybee venom for therapeutic purposes. Bee venom, bee pollen, raw honey, royal jelly, wax, propolis, and bee broad are products from bees that are generally considered to have medicinal effects. These products are effective against a wide range of ailments, from arthritis and chronic pain to multiple sclerosis and cancer, although few scientific studies have proved their benefits. Medical importance of honeybee products has been take the interest of medical and biologist scientists.

Key words:Bee venom, Bee pollen, Honey, Royal jelly, Wax, Propolis, Bee bread, Medical importance

INTRODUCTION:

Apitherapy (the term comes from the Latin APIs, which means "bee."), or bee therapy, is the use of honeybee venom for therapeutic purposes. Bee venom, bee pollen, raw honey, royal jelly, wax, propolis, and bee bread are products from bees that are generally considered to have medicinal effects. Bee venom (BV) has been used traditionally for the control of pain and inflammation in various chronic inflammatory diseases, including rheumatoid arthritis (RA) in Oriental medicine. Today, medical importance of honeybee products has been taken the interest of medical and biologist scientists. The medical importance of bee products was dis-cussed here to prove this effectiveness of such products. Propolis, the resinous product collected by honey bees from plants, is used as folk medicine since ancient time.

Propolis

During the last ten years, immunoregulatory andante-inflammatory properties of propolis have been published. The therapeutic characteristics ofpropolis have been well known for a very long time. It has been used in folk medicine for different nations as early in Egypt as 3000 BC. It has recently become a subject of increasing interest for chemists and biologists. It had various biological and therapeutic activities. Propolis possesses variable biological activities: antiviral activity of Egyptian propolis was investigated by Hegazi, and Abd El Hady, antibacterial fungicidal. The effectiveness of propolis against Salmonella spp. and Listeria spp, Enterococcus faecal is, plaque and gingivitis and acute otitis media; antioxidant, anti-inflammatory, antitumor activities. Oxidation of lipids is assumed to be implicated in the pathophysiology of atherosclerosis. It has been suggested that scavenging of lipid proxy radicals contributes to the ant atherosclerotic effects of naturally occurring compounds such as polyphenol compounds. These compounds are capable of inhibiting lipoprotein oxidation in vitro and suppressing formation of plasma lipid oxidation products in vivo. Therefore, inhibition ofLDL oxidation might be an important step in pre-venting atherosclerosis. Humans protect them-selves from reactive oxygen species, in part, by absorbing dietary antioxidants. This group of polyphenolics includes flavonoids, phenolic acids and their esters and are pre-sent in relatively high concentrations in propolis. Alsopropolis has activation of cytokines Hegazi. Caffeic acid phenethyl ester (CAPE) is an active component of honeybee propolis extracts. It has several positive effects, including anti-inflammatory, anti-oxidation, anti-cancer, anti-bacterial, anti-viral, anti-fungal, and immunomodulatory effects. In particular, the suppressive effect of NF-kappaB may disrupt a component of allergic induction. The detailed mechanisms of actions of propolis and its components on immune cells, however, are still unknown. Inflammatory cytokines and oxidative stress have a central role in the pathogenesis of acute pancreatitis. Propolis has anti-inflammatory and anti-oxidant effects. Turkish propolis samples were evaluated the immunomodulatory effect by using the in vitro model of peripheral blood mononuclear cells, neopterin, tryptophan, kynurenine and pro-inflammatory cytokines, tumornecrosis factor-alpha and interferon-gamma. Propolis has beneficial influences and could be able to antagonize aluminium chloride(AlCl3) toxicity. The effectiveness of propolis in alleviating the toxicity of propetamphos on haematological and biochemical parameters in rats. The possible radio protective effects of propolisconstituents (caffeic acid, chrysin and naringin) on gamma-irradiated human white blood cells. The polyphenol components of propolis were able to reduce the number of necrotic cells and diminishing the levels of primary and more complex cytogenetic DNA damage in white blood cells.

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Bee Pollen

Bee Pollen is one of the richest and purest natural foods ever discovered, and the incredible nutritional and medicinal value of pollen has been known for centuries. The exact chemical composition of pollen gathered depends on which plants the worker bees are gathering the pollen from. Bee pollen rejuvenates our body, stimulates organs and glands, enhances vitality, and brings about a longer life span. It has been used to enhance energy, memory and performance, although there is no scientific evidence that it does. Bee pollen is also taken to pre-vent hay fever. Researchers have demonstrated that there are several substances in bee pollen that inhibits the development of numerous harmful bacteria Basimet al., Özkalp and Özcan, Aboudaetal. 2011 and Graikou et al. Experiments have shown bee pollen contains an antibiotic factor effective against Salmonella and some strains of bacteria. On the clinical level, studies have shown that a regulatory effect on intestinal function can be attributed to bee pollen. The presences of a high proportion of cellulose and fibre in pollen, as well as the existence of antibiotic factors, all contribute to an explanation for this efficacious effect. It is re-ported that bee pollen in the diet acts to normalize cholesterol and triglyceride levels in the blood: are diction of cholesterol and triglycerides was observed (Al-Shagrawi. Selmanoğlu et al. High-density lipoproteins (HDL) increased, while low-density lipoproteins (LDL) decreased. Bee pollen stimulates the metabolic processes leading weight-loss. It speeds caloric burn by lighting and stoking the metabolic fires.

Bee pollen is an excellent prophylaxis and therapeutic treatment against all the precocious symptoms of old age. It should be considered a universal geriatric treatment in the form of a natural remedy. Bee pollen causes an increase in physical and mental abilities, especially of concentration and memory ability, activates sluggish metabolic functions, and strengthens the cardiovascular and respiratory systems. Matkovic et al., investigated the efficacy and safety of Astragals membranaceus (AM) in the treatment of patients with seasonal allergic rhinitis (SAR). The study revealed a significant number of positive signals indicating the therapeutic effectiveness of the HMC in patients with SAR. Also pollen activates cytokines (Hegazi, 2010). A double-blind, placebo-controlled study was conducted by Kawase et al.,(2009) to examine the effectiveness of Lactobacil-lus GG (LGG) and L. Gasseri TMC0356 (TMC0356)in alleviating Japanese cedar pollinosis (JCP), aseasonal allergic rhinitis caused by Japanese cedar pollen.

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