

# Chapter 15

## Apitherapy: Holistic Healing Through the Honeybee and Bee Products in Countries with Poor Healthcare System

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**Abstract** Natural products have been used for several years in folk medicine. One such natural medicine is apitherapy; which is the medical use of honey, propolis, pollen, royal jelly, bee venom etc. The curative properties of honey bees and their products is receiving renewed and increasing attention from scientists – that have a number of medicinal applications. As people are realizing that modern medicine is not the soul remedy for infections today. So, many of us are looking back to the past for the alternative approaches with least possible side effects like apitherapy. This chapter throws a light on the use of bee products and its clinical importance in healthcare and dentistry. The developments in science have led to us a better understanding of the ingredients presents in the bee products and has generated great interest in its use for medical treatments. These bee products promote healing by improving circulation, decreasing inflammation, and stimulating a healthy immune response. Therefore, apitherapy being simple, convenient and available method are practiced in traditional self-heath care and also holds promise for the treatment of periodontal diseases, mouth ulcers, and other diseases of the oral cavity as well.

### 15.1 Introduction

All existent methods in therapeutics available to man should be learned, known and applied depending on their indications, limits and possibilities for man's state of wellness. Therefore, natural therapies should complete the conquests of allopathic medicine and a symbiosis should be made between phytotherapy, apitherapy, chemotherapy and other natural therapies, considering the values and risks of each therapy method (Chirila Psicolab 1987). Apitherapy (Fr. *apithérapie*, cf. Lat. *apis* – bee, Ngr. *therapeia* – treatment) is based on the use of beehive products

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(honey, pollen, wax, royal jelly, propolis and bee venom) in preventing and treating various diseases, as well as in increasing the resistance of the human body (Apimondea 1989, 1990).

Nowadays, the definition is a bit broadened and involves making use of bee acupuncture, bee products and the comprehensive natural factors of bee activities and apiaries to provide humans with medical care. According to Dr. Stefan Stangaciu, editor in chief of the International Federation of Beekeepers' Association, apitherapy is, 'the art and science of treatment and holistic healing through the honeybee and her products for the benefit of mankind and all the animal kingdom' (Stefan 2012). Incidentally, another term apiotherapy is used in the international medical dictionary (but not anywhere else) and it denotes treatment with bee venom containing apitoxin. Alternatively it's also known as Api-therapy, Api-treatment, Bee Therapy, Bee Treatment, Bee Venom Therapy and Honey Bee Venom Therapy. The roots of apitherapy can be traced back more than 6,000 years to medicine in ancient Egypt. It is popularly used for multiple sclerosis, osteoarthritis, rheumatoid arthritis, post-herpetic neuralgia, and bee sting desensitization. It is also used for cough, herpes simplex virus, premenstrual syndrome (PMS), sulcoplasty, allergic rhinitis, improving athletic performance, hyperlipidemia, and the common cold. Topically, apitherapy, usually using honey, is used for burns, wound healing, and diabetic foot ulcers. Although, there is no training or licensing standard for practitioners of it is practiced by other licensed health professionals such as nurses, physicians, acupuncturists, or naturopaths Today, while the virtues of bee products are extolled by some, especially those interested in alternative and complementary medicines, who describe the use of honey, pollen, propolis, wax, royal jelly and venom for medicinal purposes as apitherapy, claims for the therapeutic benefits of bee products have not been subject to critical, scientific scrutiny and still debatable (Bankova et al. 2012; Berglund 2012; Bogdanov et al. 2012; Borgia et al. 1984; Cherbuliez 2013; Dhinsa et al. 2013; El-Deen et al. 2013; El-Soud et al. 2012). Also, it must be remembered that different products used in apitherapy can cause a wide variety of adverse reactions so professional skills are required for this approach. Despite this, number of organizations exists to promote this cause on scientific lines as evidenced from proposed definition by the Apimondia Standing Commission for Apitherapy which states that 'Apitherapy is a medical concept, based on scientific foundations corroborating traditional knowledge, including: bee production procedures aimed at medical development; transformation of hive product procedures, alone, or in association with medicinal plants and their derivatives (api-pharmacopoeia); and clinical protocols incorporating the use of the api-pharmacopoeia and/or of the bees (api-medicine)'. Acquiring apitherapy health care is a basic right for human beings struggling to survive especially in developing world wherein contemporary society vies with one another and strives to enable members to attain a good medical condition. At the current level of medical science and technology, the condition of the medical care relates to the medical insurance and medical care systems in society, as well as self-health care. Therefore, popularizing and spreading apitherapy, which has been effectively used for thousands of years, is worthwhile because it is a simple, convenient and available method of self-health care.

## 15.2 History of Apitherapy

Use of honey and other bee products in human treatments traced back thousands of years and healing properties are included in many religious texts including the Veda, Bible and Quran. The Holy Qur'an has a long Sorat with the name of bees (Al Nahl). The Ayahs number 68–69 In the name of God Most Gracious, Most Merciful (68) “And thy Lord taught the Bee to build cells in hills, On trees and in (men’s) habitations; (69) Then to eat of all the produce (of the earth), And find with skill the spacious Paths of its Lord: there issues From within their bodies A drink of varying colors, Wherein is healing for men: Verily in this is Sign For those who give thought”. Although, the exact origins of apitherapy are difficult to pinpoint yet it can be traced back to ancient Egypt, Greece and has been practiced in China for 3–5,000 years (Rose 1994). There are records from ancient Egypt and ancient India of using honey in treating wounds. Hippocrates, the ancient Greek physician and ‘father of medicine’ listed the physical effects of honey: “It causes heat, cleans sores and ulcers, softens hard ulcers of the lips, and heals carbuncles and running sores” (Majno 1975). Important religious texts all refer to honey and its healing powers. For Jewish people the Promised Land is described as “a country which abounds in olive oil and in honey” (Deuteronomy 8:8). In the Sanskrit Veda of ancient India, honey is a remedy for many disorders. For Christians, the Bible has many references, and in Islam, honey is a precious medicine. Sura 16 of the Koran mentions the origin of honey and its therapeutic qualities, “It comes forth from their bellies: a liquid of various colours, with healing for mankind”. Since ancient times honey has been used for the treatment of eye disorders. The Greeks and Romans also used bee products for medicinal purposes. This is described by Hippocrates (460–370 BC), Aristotle (384–322 BC) and Galen (130–200 AD), who prescribed the use of honey and bee venom as a cure for baldness. The ancient Greeks considered honey as medicine and believed that if bee honey is taken regularly human life could be prolonged. Early thinkers such as Homer, Pythagoras, Ovid, Democritus, Hippocrates and Aristotle mentioned that people should eat honey to preserve their health and vigour. Honey was the most useful substance used in old Roman pharmacopoeia. Pliny writes that it is good for afflictions of the mouth, pneumonia, pleurisy and snake bites. The wise Solomon praises the virtues of honey in the Old Testament. Aristotle has written in his *Historia Animalium* that “*honey is good as a salve for sore eyes*”. It has also been used by traditional Indian medicine and in Mali. Hippocrates wrote “honey and pollen cause warmth, clean sores and ulcers, soften hard ulcers of the lips, heal carbuncles and running sores”. Galen, the great Roman physician, considered honey an all-purpose remedy, recommending it to treat many kinds of poisoning and intestinal ailments, in particular gangrenous stomatitis. Wound healing was probably the first use of honey for human health. In the oldest human scriptures from Sumer, dating back about 2000 BC. According to the Ebers papyrus (1550 BC) honey is included in 147 prescriptions in external applications. In the first compendium of ancient Chinese Medicine Shen Nang, compiled many

years BC, and mentioned in a written form for the first time around 200 AD there are many prescriptions and medical indications which contain honey. In ancient India ayurvedic medicine uses honey for many purposes. According to the Ayurveda classic Ashtanga Hridaya, written about 500 AD, honey can be used against many diseases, e.g. healing and cleaning wounds, against different internal and external infections. The ancient Maya civilizations used *Melipona* (stingless bee) honey in the treatment of cataracts.

Besides honey there are historical references discussing the merits of pollen by B.C. Shen Nung, a Chinese emperor as far back as 2,735. Egyptian papyri refer to pollen as life giving dust. Hippocrates recommended pollen as a remedy for several conditions. The Hindus taught that eating honey and pollen could produce health, vigor, happiness and wisdom. Propolis was used specially in antiquity, in Egypt. There some thousand years BC, propolis was very well known to the priests who had monopolized medicine, chemistry and art of mummifying corpses. Abu Ali bin Sina (Avicenna) distinguishes two kinds of wax in his well known work, the clean and the black wax. The clean wax is that which composes the comb wells where the bees rear the brood and store the honey and the black is the filth the hive. It is clear enough that the black wax is propolis that after Avicenna's testimony. In folk Georgian medicine, they used ointments with propolis to cure some diseases. There was the custom of placing a propolis cake on the belly button of the newborn baby. Doctors used propolis effectively on wounds during the Anglo-Boer war and during the World War II. In 1969, Orthodox medicine in USSR accepted use of propolis (30 % alcoholic solution) in treatment (reviewed in Hegazi 2000). The fact that propolis was also known to the old Greeks is demonstrated by the very Greek name of it (Makashvili 1978). The first held the opinion that bees harvest propolis from resin of willow buds, of poplar, wild chestnut and other plants and other writers assumed that bees harvest it from *Styrax* (Makashvili 1978). In Folk Georgian medicine, they used ointments with propolis to cure some diseases. Also in folk medicine, the use of propolis is widely known especially for the treatment of corns. People inhale propolis in case of affections of respiratory tracts and of the lungs. It is also efficient for burns and angina. The therapeutic characteristics of the propolis have been well known for a very long time. This is explained by its very pronounced anti-microbial characteristics. Propolis was used effectively on wounds by doctors during the Anglo-Boer war and during The World War II. It was also used in hospitals. From 1969 Orthodox medicine in USSR accepted the use of propolis 30 % (30 % alcoholic solution of propolis). It is produced by the pharmaceutical product plant in Tallinn (Makashvili 1978).

Royal Jelly was highly valued by Chinese monarchs as a way to increase longevity and sexual power. Royal jelly has been used in Traditional Chinese Medicine for 70–80 years. Shen Nong's Herbal Classic (100–200 BC) explains that bee products "treat evil influence, supplement the insufficiency in the five viscera, help qi and mend the heart." They also relieve pain and detoxify, "get rid of a hundred diseases," can be "mixed with hundreds of medicines," and "strengthen the will and tighten the body, make people young and prolong life." The herbal compendium *Materia Medica* by Li Shishen written during the Ming Dynasty states

that bee products “are sweet and mild, so that they can detoxify; soft so that they can soften and moisten; slow for taking it easy.” As a result they are considered good for “relieving heart pain, stomach pain, sore muscles, and ulcers” and “can bring peace to the heart and can add harmony to hundreds of medicines.” In the *Materia Medica* royal jelly is considered a tonic for yin deficiency (and general deficiencies) like ginseng, fodi, dang qui, astragalus, common jujube and lycium fruit. Royal jelly is combined with these and other herbs. In Traditional Chinese Medicine energy or Qi is thought to flow from or be regulated by the liver, which is significant biologically given the recent research on royal jelly’s regenerative effects on the liver described below. Case studies from Japan document its traditional and popular use and effectiveness for fatigue (Inoue 1986, 1988; Inoue and Inoue 1964). Japanese office workers consume royal jelly in genki drinks, which are energizing tonics. In addition, royal jelly has been used in Eastern European countries as an adaptogen (broadly defined as an agent that increases strength, endurance and resistance to stress). Wagner et al. (1970) The exact mechanism of action of bee pollen is unknown, but bee pollen is nutrient dense and contains water, protein, carbohydrates, essential fatty acids, antioxidants and up to 100 vitamins, minerals, enzymes and amino acids. Bee pollen also has antimicrobial properties.

## ***15.2.1 Api Products and Their Mechanism of Action***

### **15.2.1.1 Bee Pollen**

Proponents often claim that enzymes in bee pollen provide a variety of therapeutic benefits. However, any enzymes in bee pollen are likely to be digested in the gastrointestinal (GI) tract. There is no reliable evidence indicating that bee pollen enzymes or other constituents in bee pollen offer any therapeutic benefit. The overall effects of bee pollen are comprehensive, as it appears to activate systemic biological functions rather than focusing on one physiological area.

### **15.2.1.2 Bee Propolis**

The active components of propolis that have been identified so far include polyphenols and flavonoids which shows therapeutic potential and may have applications in the pharmaceutical and food processing industries (Salomao et al. 2008; Miorin et al. 2003; Murad et al. 2002). Propolis reportedly has a range of biological activities, including immunomodulatory (Orsatti et al. 2010; Missima and Sforcin 2008), antibacterial (Gonsales et al. 2006), fungicidal (Silici et al. 2005; Dota et al. 2011), anti-inflammatory, healing (Moraes et al. 2011), analgesic/anesthetic (Silvestre et al. 1985; Paulino et al. 2006), and anticarcinogenic effects (Leitao et al. 2004). It can be used for a wide range of purposes as anti-inflammatory and hypotensive agent, immune system stimulant, and bacteriostatic and bactericidal agent, among many other uses

(Ghisalberti 1979). It's fairly complex chemical composition includes phenols, tannins, polysaccharides, terpenes, aromatic acids and aldehydes, among other compounds (Asis 1989; Koo and Park 1997). In Argentina, the INAL (The National Food Institute) recognized propolis as a diet supplement in 1995 (file 2110-003755-4 in the Argentine Food Code) (Gonzalez et al. 2003). Propolis has attracted attention in recent years due to its beneficial effects, which make it a potential preventive and therapeutic agent as well as a useful additive in food and cosmetics. The aim of this review is to discuss the growing evidence that propolis may, via a diverse array of biological actions, assist in the prevention of some inflammation-mediated pathologies including cardiovascular disease. These compounds have cardioprotective, vasoprotective, antioxidant, antiatherosclerotic, anti-inflammatory and antiangiogenic actions.

### 15.2.1.3 Bee Venom

Bee venom therapy is the use of live bee stings (or injectable venom) to treat various diseases such as arthritis, rheumatoid arthritis, multiple sclerosis (MS), lupus, sciatica, low back pain, and tennis elbow to name a few. It contains 88 % water. The glucose, fructose and phospholipid contents of venom are similar to those in bee's blood. At least 18 pharmacologically active components have been described, including various enzymes, peptides and amines. The main component of bee venom responsible for pain in vertebrates is the toxin melittin; histamine and other biogenic amines may also contribute to pain and itching. "Bee Venom Therapy (BVT) is a classic example of the homeopathic principal, which states that a substance that produces the symptoms of a disease is a cure for that disease. Rheumatic diseases result in swelling, pain and inflammation. A bee sting causes the same symptoms. The sting stimulates the immune system to relieve the inflammation caused by the bee venom, while relieving the symptoms of the rheumatic disease at the same time. Bee Venom Therapy stimulates the immune system through the hypothalamus, pituitary and adrenal glands (Kim 2013). This therapeutic effect stimulates the immune system rather than suppressing it, completely contrary to the effects of many drugs." One possible way that bee venom works its anti-inflammatory effects is by assisting the production of endogenous plasma cortisol in the human body (Mahmoud 2006; Mahmoud et al. 2012). Bee venom has also antioxidant qualities, which make it effective as a booster for the natural immune system. Amongst the most important of these seems to be Peptide-401, commonly referred to as the mast cell degranulating peptide which is 100 times more effective as an anti-inflammatory agent than hydrocortisone. However, another compound that has come under great scrutiny is Melittin which forms the bulk of dried bee's venom and believed to contribute to joint damage. Mellitin inhibit the formation of free radicals and has also been shown to indirectly stimulate the adrenal gland to produce the body's own cortisol by stimulating the pituitary gland to release ACTH. Another compound called apamin which enhances long term synaptic transmission and dopamine which helps increase motor activity. In addition there is a component of bee's venom called adolapin, also a neurotransmitter, which has been

shown to have an analgesic effect which may be important for those who suffer pain as one of the symptoms. Phospholipase A2 & B, found in bee venom, selects only the cancer affected cells and destroys them. Healthy cells have a membrane which protects them and they are not affected in this process.

#### 15.2.1.4 Honey

The antitumor activity of honey can be explained by the antibacterial, anti-inflammatory, immunomodulating, antioxidant and probiotic effects of honey. Honey is a potent inhibitor of the causing agent of peptic ulcers and gastritis, caused by *Helicobacter pylori*. The mechanism of action was attributed to prostaglandin production, antioxidant properties of honey and salivary reduction of nitrate ( $\text{NO}_3$ ) to nitrite ( $\text{NO}_2$ ) and the intragastric formation of nitric oxide (NO), the latter involved in the preservation of the gastric mucosa capillaries and in boosting mucous production. The anti gastric ulcer and anti-gastritis effect of honey can be explained by its antibacterial and anti-inflammatory action, as well as with its inhibitory effect on the acidity of the gastric juice. This is most likely a consequence of honey's anti-inflammatory properties. Inflammation increased vessel permeability increases fluid movement into soft tissue, subsequently increasing surface exudates. It has been established that dressings that create the type of moist wound environment that honey provides facilitate the process of autolytic debridement (Majtan 2009). The osmotic pull of honey draws lymph from the deeper tissues and constantly bathes the wound bed. Lymph fluid contains proteases that contribute to the debriding activity of honey. In addition, the constant sluicing of the wound bed is believed to help remove foreign body (e.g., dirt and grit) contamination. Malodor is known to occur in a variety of wounds in conjunction with slough and necrotic tissue; it is a particular concern when managing fungating lesions. Malodorous substances such as ammonia and sulphur compounds are produced when bacteria metabolize protein. Because honey provides bacteria an alternative source of energy (glucose), these noxious compounds are no longer produced and wound malodor is avoided. Macerated periwound skin can be a problem in some wounds and is often related to the dressing used. The osmotic action of honey, previously mentioned, has been shown in previous reviews of the literature to reduce the risk of maceration honey draws moisture rather than donates it 65. Thus, periwound skin is protected from overhydration. The positive effect of honey on nutrition function is also due to its prebiotic effect. Honey is thought to improve wound healing by promoting the formation of granulation tissue (Majno 1975). It promotes the growth of epithelial cells by providing a barrier to moisture which helps keep the wound hydrated. Enzymes and hydrogen peroxide in honey can aid in debridement. The healing effect of honey is explained by its anti inflammatory, antibacterial and antifungal actions of honey. There are reports on the successful treatment by honey of keratitis, conjunctivitis and blepharitis in Egypt (Mandal and Shyamapada 2011). The positive effect in keratitis to reducing the levels of angiogenic factors (VEGF and TGF-beta), inflammatory cytokines (IL-12) and chemokines (CC chemokine receptor 5(CCR-5)).

Another explanation of the healing effect of honey in eye diseases is a irritation effect, triggering healing processes of the eye. Stingless bee honey has been traditionally used by the Mayas against cataract. Honey has been used to support chemotherapeutic action and reduce its side effects in myelosuppression, neutropenia etc. It has been pointed out that honey may be used for radiation-induced mucositis, radiotherapy-induced skin reactions, hand and foot skin reactions in chemotherapy patients (Jagua-Gualdrón 2012) and for oral cavity and external surgical wounds.

### 15.2.1.5 Royal Jelly

Anti-hypertensive, hypotensive, vasodilative effects of Royal jelly in animals has been reported by different authors. Other biological effects includes anti-oxidative and radiation-protective and hepatoprotective (liver-protecting, hyperglycaemic, preventing insulin resistance), stimulating bone formation and promoting bone healing, preventing osteoporosis in, promoting building of collagen in cell cultures and suppressing the development of atopic dermatitis-like skin lesions. It has biostimulating activity due to induced increase of respiration and oxidative phosphorylation particularly in the liver (Vitek 1995) as well as oxygen uptake in the brain. It also seems to support glycogen restoration and decrease accumulation of waste products such as lactate and ammonia which cause fatigue (Kamakura et al. 2001a). It works to decrease inflammation and increase wound healing (Fujii 1995; Fujii et al. 1990) due to the presence of an antibacterial peptide called royalisin (Fujiwara et al. 1990). Its major protein activates keratinocytes, involved in wound healing. It inhibits the production of proinflammatory cytokines, thought to play a role in skin inflammation and promotes healing in diabetic mice. In particular a protein called 57 kDa appears to be responsible for this effect. It also prevents microbial growth due to the presence of a fatty acid called 10 HDA (Blum et al. 1959) and stimulates antibody production (Sver et al. 1996). By supporting proper immune function it prevents allergic reactions and histamine release (Oka et al. 2001) and increases levels of nitric oxide which reduces inflammation and improves cardiovascular function. Finally, its ability to inhibit capillary permeability explains its anti-inflammatory and tissue-healing ability (Fujii et al. 1990). Immunomodulating effects of RJ lay an important effect in cancer, allergy, and inflammation. It can increase of all blood cells and the  $\alpha$ -1 and  $\alpha$ -2 globulins fraction and induces the formation T lymphocytes, responsible for the immune response for the immune response against viruses and cancer cells and also play an important role in inflammation processes. The immuno-activating effects of RJ are due to its main protein apalbumin. RJ has also stimulating, activating effects on the central nervous system and leads to an increased phosphorylation of the CNS, to increase brain cholinesterase activity. It also influences different blood parameters: reduction of serum cholesterol and triglycerides levels, increase of high density lipoprotein-cholesterol levels, lowering of plasma fibrinogen levels and thrombosis. It also seems to have some antitumor activity and antiatherogenic activity. The way royal jelly works to lower cholesterol is by binding with it in the GI tract due to the presence of phyosterols such as Bsisterol (Makarov 1969; Madar et al. 1965; Shinoda et al. 1978).

Royal jelly contains substances with anti diabetes activity like 10 HAD. Royal jelly contains a variety of B vitamins and one of them – pantothenic acid that stimulates the adrenal glands and increases production of adrenal hormones. In humans, pantothenic acid is converted to coenzyme A which helps the body metabolize fats and carbohydrates. Again, we see convincing biochemical support of its use for energy in TCM. Royal jelly also contains testosterone which may help increase strength (Vitt et al. 2013).

#### 15.2.1.6 Propolis

Therapeutic uses of propolis are primarily attributed to antiviral, antibacterial, and antimycotic effects. Propolis contains flavonoids including pinocembrin, galangin, pinobanksin, and pinobanksin-3-acetate, which are thought to be responsible for its antimicrobial effects (5, 1926). Propolis extracts that contain the constituents pinocembrin and galangin have been shown to inhibit the growth and enzyme activity of *Streptococcus mutans*, an organism that causes dental caries (2,631). Propolis also seems to have in vitro activity against a variety of bacteria that cause periodontal disease such as *Porphyromonas gingivalis*, *Prevotella intermedia*, *Actinobacillus actinomycetemcomitans*, and *Fusobacterium nucleatum* (8,664). Propolis might also have anti-inflammatory effects. There is preliminary evidence that it might suppress the lipoxygenase pathway of arachidonic acid metabolism and decrease the synthesis of prostaglandins and leukotrienes involved in inflammation (2,630).

#### 15.2.1.7 Bee Pollen

It contains lipids, essential oils, vitamin E (tocopherol), carbohydrates, peptides, short proteins or oligopeptides, amino acids, pantothenic acid, anthocyanins, carotenoids, flavonoids, ferulic acids and enzymes as well as many minerals such as iron, manganese, zinc and spore elements. These bioactive substances are believed to strengthen the organic ability of the body to overcome the effects of stress and greatly improve ones health, and prevent senescence. Besides, it plays an active role in many human functions, promoting growth and development, preventing malnutrition and accelerating recovery after operations and illness. Its medicinal properties are stimulating, antiseptic, slight aphrodisiac, diuretic and laxative, sedative. It also regulates GI function, menstrual and myocardial effects. It also supports venous and arterial circulation, and act on liver and prostate decongestant. It adds in cardiovascular functions and fighting diabetes.

### 15.3 Current Use of Apitherapy

Apitherapy is used for many diseases the most common being multiple sclerosis, osteoarthritis, rheumatoid arthritis, post-herpetic neuralgia, and bee sting desensitization. It is also used for cough, herpes simplex virus, premenstrual syndrome

(PMS), sulcoplasty, allergic rhinitis, improving athletic performance, hyperlipidemia, and the common cold. Topically, apitherapy, usually using honey, is used for burns, wound healing, and diabetic foot ulcers.

List of diseases that can be treated with Apitherapy ([www.apitherapy.com](http://www.apitherapy.com)) is cited in Table 15.1.

**Table 15.1** Current use of apitherapy: list of diseases that can be treated with apitherapy

<b>Immune system dysfunction or problems</b>	<b>Genital apparatus diseases (gynecology)</b>	<b>Skin diseases (dermatology)</b>
Multiple Sclerosis (MS)	Cervix erosions	Acne
Arthritis	Hypofoliculinic Dysfunctional Syndromes	Bedsores
Hay fever	Irregular periods	Breast skin sores
<b>Neurologic problems</b>	Leucorrhoea	Bruises (“Blue” skin after contusion)
ALS (Lou Gehrig’s disease)	Menstrual cramps	Burns and scalds
Multiple Sclerosis (MS)	Menstrual cramps	Canker diseases
Shingles	Mood swings	Chronic furuncles
Scar pain	Premenstrual Syndrome (PMS)	Decubitus ulcer
<b>Musculoskeletal problems</b>	Sexual dynamic weakness	Degranulated wounds
Arthritis	Trichomonas vaginalis	Eczema
Gout	Vaginal sores (post-surgical)	Epidermophyses
Tendonitis, bursitis	Vaginitis	Erysipelas
Spinal pain	Vegetations	Folliculites
<b>Infectious problems</b>	Wounds (hardly healing) after gynecological surgical operations	Furunculosis
Bacterial, viral, and fungal illnesses	<b>Immune system diseases (immunology) AIDS</b>	Hair loss
Lyme disease	B-cell enhancement	High sensitiveness
<b>Traumas</b>	Multiple Sclerosis (MS)	Hydradenites
Wounds, acute and chronic	Systemic Lupus Erythematosus	Hyperkeratosis
Burns	T-cell suppression	Infected skin lesions
Sprains	<b>Kidney diseases (nephrology)</b>	Intertrigo (infants)
Fractures	Chronically kidney insufficiency	Low sensitiveness
<b>Tumors</b>	Kidney diseases (non-specific)	Lupus Erythematosus
Benign	<b>Mental diseases (psychiatry)</b>	Melanoma
Malignant (cancer)	Alcohol addiction	Moles
<b>Allergies (allergology)</b>	Oligophrenia	Mycosis Fungoides
BV allergy	Schizophrenia	Neurodermitis

(continued)

**Table 15.1** (continued)

Bee pollen allergy	<b>Musculoskeletal system diseases</b>	Parasitary sicosis
Hay fever	<b>(Rheumatology, myology, osteology)</b>	Psoriasis
Ragweed polinosis	Acute and chronic bursitis	Pyodermites
<b>Cardiovascular diseases (cardiology)</b>	Ankylotic spondylarthritis	Radiodermatitis
Acute rheumatic carditis	Ankylotic spondylitis deformans	Scars
Angina pectoris	Arthritis	Scleroderma
Arrhythmias	Arthrosis	Seborrheic dermatitis
Artheritis obliterans	Fibrositis	Shank (calf) chronic ulcers
Artherosclerosis	Juvenile arthritis	Skin tuberculosis (adjuvant)
Atherosclerosis	Lateral epicondylitis (tenis elbow)	Spots alopecia
Atherosclerotic arteritis of the inferior limbs	Muscular rheumatism	Total alopecia
Capillary fragility	Muscle tonus problems ligament troubles	Topical ulcers
Cardiac diseases (non-specific)	Myalgia	Tricophysis
Cerebral atherosclerosis	Myositis	Trophic ulcers
Cerebral trombosis	Osteoarthritis	Varicose ulcer
Coronary heart diseases	Periarthritis of the shoulder with calcifications	Warts
Flebitis	Poliarthritis deformans	Wounds
Heart insufficiencies	Psoriatic arthritis	Zona-zoster
Haemorrhagies of vascular origin	Reduced muscle force (weak muscles = hypotonia)	<b>Sexual diseases (sexology)</b>
High blood pressure	Rheumatic afflictions of muscles, nerves and articulations	Benign prostatic hypertrophy
Liver congestion	Rheumatic diseases (non-specific)	Chronic prostatitis
Peripheral ischemic degenerative syndrome	Rheumatoid arthritis	Insufficiency of sexual hormones
Peripheral vascular diseases	Scheuermann's disease (osteochondrosis)	Prostate and seminal vesicles inflammation
Raynaud's disease	Spondyloarthritis (clinical arthrosis)	Prostate inflammation (prostatitis)
Slow peripheral blood flow	Traumatic arthritis	Sexual dynamic weakness
Varicose ulcer	<b>Nervous system diseases (neurology)</b>	<b>Teeth and mouth diseases (stomatology, dentistry)</b>
Varicosis	Asthenia	Canker diseases
<b>Blood diseases (hematology)</b>	Cerebral trombosis	Caries

(continued)

**Table 15.1** (continued)

Anemia	Chronic pain syndrome	Chronic peripheral parodontopathies
Coagulation diseases with aplasia	Dupuytren's contracture	Common chronic recurring aphtae
Haemorrhagic gingivitis	Insomnia	Gingivitis
Hyperlipidaemia	Lumbago neuralgia	Glossodynia
<b>Cancers (oncology)</b>	Lumbar back pains	Gum disorders
Basal cell carcinoma	Migraine	Haemorrhagic gingivitis
Chemotherapy (during)	Multiple Sclerosis (MS)	Labial cyclic recurring herpes
Gynaecologic cancer (non-specific)	Neuralgies	Lip diseases
Lymphoma	Neurasthenia	Moniliasis
Malignant melanoma	Neuritis	Stomatitis after amygdalitis operation
Mammary tumors	Neurotic disorders	Ulcer stomatitis
<b>Eye diseases (ophthalmology)</b>	Paresthesia related to Spondyloarthritis Meralgia Paresthetica	Ulceronecrotic stomatitis
Cataract	Peripheral neuritis	<b>Viral diseases (virology) aids</b>
Iridocyclitis	Post-herpetic neuralgia	Epstein barr virus disease
Iritis	Sciatica	Flu
Microbial inflammatory affections of the fore-pole of the eye	Zona-zoster	Mononucleosis
Microbial inflammatory affections of the ocular annexes	<b>Nose, ear, throat diseases (oto-rhino-laryngology)</b>	Post-herpetic neuralgia (shingles)
Ocular burns	Acute inflammations of the middle ear	Warts
Ocular traumas	Acute rhino-pharyngo-tonsilitis	<b>Diseases, conditions which affects the whole body</b>
Ocular annexes burns	Acute tonsilitis	Anorexia
Ocular annexes traumas	Chronic allergical rhinitis	Convalescence
Status post-ophthalmic herpes	Chronic allergo-infected hyperplastic rhinosinusitis	Fever
Virus inflammatory affections of the fore-pole of the eye	Chronic hypertrophic rhinitis	<b>Respiratory apparatus diseases (pneumology)</b>
Virus inflammatory affections of the ocular annexes	Chronic hypotrophic rhino-pharyngitis	Allergic rhinitis (hay fever)
<b>Endocrine system diseases (endocrinology)</b>	Chronic laryngitis	Angina
Adrenal glands diseases	Chronic medium suppurating otitis	Asthmatic bronchitis
Cortisol secretion dysfunction	Chronic otitis with acute mesotympanitis	Bronchial asthma
Hyperthyroidism	Chronic pharyngitis	Bronchiectasis

(continued)

**Table 15.1** (continued)

Hypofolliculinic disfunctional syndromes	Chronic rhino-pharyngitis	Bronchitis
Hypoglycemia	Chronic rhino-pharyngo-tonsillitis	Chronically cough
Insufficiency of sexual hormones	Chronic simple atrophic rhino-pharyngitis	Chronic non-specific diseases of lungs
Irregular periods	Cochleo-vestibular syndrome	Cough
Menstrual cramps	Diffuse external otitis	Inflammatory diseases of the upper respiratory tract
Mood swings	External diffuse eczematous otitis	Influenza infection
Premenstrual Syndrome (PMS)	Hypohearing	Laryngitis
<b>Digestive apparatus diseases (gastro-enterology, hepatology)</b>	Influenza infection	Non-specific chronic pneumonia
Affections of the liver cells	Mesotympanitis	Non-specific endo-bronchitis
Chronically hepatitis	Osenia	Non-specific pneumonia
Chronically liver diseases	Pharyngitis	Pulmonary tuberculosis
Colitis (sub-acute and chronic)	Phonasthenia	Rhinitis
Constipation	Post-traumatic pharyngitis	Tracheitis
Gastro-duodenal ulcer	Sore throat	Tuberculosis
Gastric H. pylori colonization	Traumatic perforation of tympanum	<b>Nutrition and metabolic diseases</b>
Liver cirrhosis		Abnormal cholesterol and triglycerides
		Anorexia (lack of appetite)
		Diabetes
		Dystrophies (dystrophy to children suffering of oligophrenia)
		General metabolic diseases (non-specific)
		Hyperlipidaemia
		Hypoglycemia

### 15.3.1 Therapeutic Benefit of Honey

The resurgence of interest in honey as a modern wound dressing offers opportunities for both patients and clinicians. Until the first part of the twentieth century, honey dressings were part of everyday wound care practice. With the advent of antibiotics in the 1930s and 1940s, views changed and honey was consigned to items of historical interest. Misuse of antibiotics, the emergence of resistant bacteria, and increasing interest in therapeutic honey have provided an opportunity for

honey to be re-established as a broad-spectrum, antibacterial agent that is non-toxic to human tissue. Despite lack of promotional support from large corporations, interest in the use of honey in wound management has increased in recent years. However, a clinical profile in wound care commensurate with other modalities has not been achieved despite offering similar indications of use and an increase in research activity and clinical reports. Honey also has been found to be effective in vitro against a range of multi resistant organisms including methicillin-resistant *Staphylococcus aureus* (MRSA), vancomycin-resistant *Enterococci* (VRE), and other multi resistant Gramnegative organisms including *Pseudomonas aeruginosa*. Recent additions to the honey product range of dressings indicate commercial confidence in the future of therapeutic honey. The wheel has turned full circle and honey is being re-established as a valuable agent in modern wound care management. Its advantages – providing a moist environment, debriding, deodorizing, antibacterial, anti-inflammatory capabilities are factors that have been shown to facilitate healing. These advantages have been experienced by patients and clinicians in Europe and Australia and are now available to patients in North America. Use of any medical device must be based on clinical justification and available evidence about product safety and effectiveness. Continued research is needed to increase our understanding about the role of honey in a variety of wounds and its effect on healing compared to other treatment modalities. Wound bed preparation may be viewed as management of the wound in order to accelerate endogenous healing. In vivo pilot study reported that honey helps reduce the amount of wound exudate. Some commercial honey preparations used in wound healing Antibacterial wound gel, Moistening cream against eczemas, Medihoney wound gauze, Wound-healing creams, Wound dressing with Medihoney gauze. Honey liquid or gel and Honey in a hydrocolloid-like sheet are also common these days. Honey biofilms. In recent years, attention has turned to the potential role of honey biofilms in wound infection. A biofilm may be described as a bacterial community living within a self- produced extracellular polysaccharide (EPS) matrix. The EPS protects the bacterial community from antimicrobial and phagocytic onslaught. Lately, in vitro evidence has indicated that honey is an effective agent for preventing biofilm formation. In an in vitro study it was found that laboratory-grown *Pseudomonas* biofilms were disrupted following application of Manuka honey. These findings are particularly encouraging when considering the emergence of antimicrobial resistant bacteria. No evidence has yet been presented that bacterial resistance to honey has occurred – it is highly unlikely that bacteria will select for resistance to honey because bacteria rely on sugar as a source of food. The viscous nature of honey is believed to provide a physical barrier that helps safeguard patients by preventing cross contamination. Honey is also successful in various ailments of the cornea. Undiluted or 20–50 % water solutions are being used in Russia and in the Rangarya Medical College of India it has been used to treat corneal eye ulcers, treatments of plepharitis (inflammation of the eye-lids) catarrhal conjunctivitis and keratitis. Besides the application in wounds and burns honey has also other external applications. For his purpose raw honey can be used as homemade preparation against virus action on lips and genitals, boils and furuncles, muscle cramps and

bruises and contusions Ingestion of warm honey in combination with propolis ingestion, is a good way to treat gastric ulcers. Honey was found to shorten the duration of diarrhoea in patients with bacterial gastroenteritis caused by organisms such as *Salmonella*, *Shigella* and *E. coli*. The mild laxative properties of honey are used for the treatment of constipation in Eastern Europe, China and the Near East. The cardiovascular effects of honey can be explained by its antioxidant and anti-inflammatory effects. Consumption of natural honey reduces cardiovascular risk factors, particularly in subjects with elevated risk factors and caused a mild reduction in body weight (1.3 %) and body fat (1.1 %). Honey reduced total cholesterol (3 %), LDL-C (5.8), triacylglycerole (11 %), FBG (4.2 %), and CRP (3.2 %), and increased HDL-C (3.3 %). It also decreases also platelet aggregation and blood coagulation. Increased levels of nitric oxides in honey could have a protecting function in cardiovascular diseases. Small doses of honey, 1–2 tablespoons intake has been found to influence cough and sleep favourably because of its high antioxidant properties. Honey also stabilizes blood sugar levels and contributes to the release of melatonin, the hormone required for recovery and rebuilding of body tissues during rest. Many studies established that intake of 50 g of honey daily reduces the length of the common cold by 2 days while the Ukranian doctors Frolov and Peresadin reported prophylactic consumption of honey for 20 year duration which protected them against influenza or sore throat. Another possible application of honey is its use for preventing hay fever. In a preliminary announcement at the 2nd International Conference on the Medicinal Use of Honey in 2010 there is a preliminary announcement that intracervical injection of honey in women with chronic endocervitis was of positive therapeutic value both in terms of clinical cure and fertility enhancement. At the same conference it was reported that honey has positive effect on the mechanical properties of the fetal membranes, may be through “collagen promoting action”. Positive effects of honey on ethanol intoxication such as disappearance in blood increase and of ethanol elimination rate has also been confirmed in studies with humans. Ingestion of both honey (2 g/kg body weight) and fructose prevented the ethanol-induced transformation of erythrocytes of mice. A patients was found after ingestion of clover and rape honey, causing a decrease of alanine aminotransferase activity (by 9–13 times) and of bilirubin production by 2.1–2.6 times preventing thus establishing preventive action against hepatitis Dark honeys, e.g. calluna, were capable of bringing blood haemoglobin values back to normal, while light honeys failed to do so.

### ***15.3.2 Royal Jelly in Medicine***

Use of Royal jelly is especially popular in Asia. In the Western World there are only very few clinical studies. Since it activates a number of physiological processes, its main medicinal use is in podiatry, nursing and geriatry. The significance of royal jelly for human nutrition is relatively small. The main substances responsible for the biological action are 10-HDA and its proteins and peptides. That induces antibacterial

activity towards different bacteria, many of them pathogenic, Since the liver needs to regenerate constantly to replace cells that have been damaged by toxins; this helps to optimize liver function for detoxification and energy production, supporting traditional use in Traditional Chinese Medicine. Royal jelly works to increase feelings of wellbeing in patients with tuberculosis (Borgia et al. 1984) and helps the cardiovascular system due to its vaso-dilative (Shinoda et al. 1978) and hypo-tensive effects (Townsend et al. 1959; Tamura et al. 1987). Royal jelly may also lower cholesterol and general blood lipids (Kaczor et al. 1962; Makarov 1969; Vittek 1995). Other research suggests it causes feelings of “euphoria,” wellbeing, increased strength and appetite in patients with heart conditions (Cho 1977). Due to all these effects it may help prevent atherosclerosis (Vittek 1995). One of the most important aspects of royal jelly’s health benefits is its effects on the liver. Royal jelly appears to stimulate growth (Kato et al. 1988; Watanabe et al. 1998) particularly among liver cells (Kamakura et al. 2001b; Kamakura 2011). Royal jelly appears to increase muscle power, vital capacity, respiratory function and energy levels. It improves appetite and strength and increases body weight in cases of malnutrition, underweight, depression, and anorexia (Fossati 1972). Some evidence documents feelings of mental wellbeing in older people who use royal jelly. Royal jelly is also able to support optimal blood sugar levels by assisting in the oxidation of glucose in body fats for energy due to an insulin effect since insulin like peptides, are found in royal jelly (Kramer et al. 1977, 1982). High levels of magnesium in royal jelly may also reduce oxygen consumption and blood lactate (as shown in swimmers) and may also work to increase feelings of energy in patients with Chronic Fatigue Syndrome (Campbell et al. 1991). It can also successfully used to improve the general condition and weakness due to old age. As sclerosis, weakness, menopause etc. The cardio-protective, anti- atherosclerosis and anti-arteriosclerosis effects have also been reported. It can be effective against respiration diseases like bronchial asthma and spastic bronchitis. The anti-tumor effect as it stimulated the immunoglobulin production by lymphocytes and increased the anti-cancer factors was but patients should not rely on RJ only for treatment of cancers. Patients treated by 20–25 mg dry RJ three times per day for 1 month showed improvement for gastric and duodenal ulcers and gastritis. It has wound healing properties. The antimicrobial properties, together with the proteins and fatty acids makes it appropriate for skin applications. In cosmetic preparations RJ prevents spots and wrinkles and moisturizes the skin A RJ extract increases the natural moisturizing factor (NMF) by promoting the expression of profilaggrin in the skin, as well as by having a moisturizing effect on the stratum corneum in ophthalmology it can be used for the treatment of retina diseases connected with the disturbance of the eye microcirculation. An intravaginal application of mixture of honey and royal jelly was successful for treating male factor infertility (asthenozoospermia) 4, and also of treating female infertility by a collagen-like promoting action on fetal membranes 2.

### ***15.3.3 Bee Pollens***

It is well established that pollen could strengthen athletes physical force, resistance, dispel fatigue rapidly and maintain a good athletic condition. In recent years, many athletes participating in the Olympic games have eaten pollen products regularly and their body constitution and records have improved. Chinese scholars used pollen to prevent acute altitude stress. Clinical applications evidenced that bee pollen has a good effect on treating prostatosis and sexual dysfunction in men. It is advised that middle aged men and the elderly should take pollen to prevent excessive hyperplasia of the prostate and thus preclude the need for surgery. Hundreds of infertile men were able to produce babies after bee-pollen treatment. It was also found effective for treating diseases such as chronic and active hepatitis, bad appetite, weak digestion and absorption, and in preventing duodenal ulcer, hemorrhage, chronic atrophy gastritis and habitual constipation. Pollen is used to cure menopausal syndrome, psychopathy, depressive syndrome and chronic alcoholism and atrophy of the nervous system. Taking pollen frequently or using it as a kind of cosmetic is effective for protecting the skin and in hairdressing; moreover, it can eliminate acne, flecks, nevus, age pigment and small wrinkles.

### ***15.3.4 Propolis***

Since it is called the medicine of the bee colony, propolis has a bright future as it has the largest potential for use in medical care. Experiments have proved that propolis also has the following effects: anti-fatigue, prevention of hyperlipidemia, anti-inflammation, anti-oxygenation, prevention of ulcers, antitumor, local anesthesia, pain relief, liver maintenance strengthening the brain, wit benefit, relief of constipation with laxatives, blood sugar regulation, relief of itching and promotion of tissues healing in injuries. It has a surprising effect on many stubborn diseases. It contains many flavone mixtures, benzoic acid, cassic acid and alcohol, hydroxybenzene, aldehyde, ketone, ether, a mixture of olefin and terpene with pharmacological and biological activities, and fatty acids, steroids, amino acids, enzymes, amylose. Clinical evidence have documented that frequently taking propolis improves organic immune functions. Many Europeans take propolis frequently to prevent epidemic influenza and other epidemics in autumn and winter; besides, it has been successfully used as an adjuvant immune agent of many bacterins. As a folk medicine, propolis has been used to treat helosis and tumors for many years. During the war (1899–1902) between South Africa and England, it was used to treat wounds. Modern medicine proves that externally applied agents made with propolis have a

good effect on treating herpes zoster, tinea, burns, chilblain, chap, common acne, eczema and dermatitis, chronic ulcers of the lower limbs and other skin problems, e.g. patients with herpes zoster take propolis tincture to stop pain and eliminate the occurrence quickly; propolis aerosol can be used to treat asthma and inflammation of the alimentary canal. Taking propolis orally is useful in treating diseases such as gastric and duodenal ulcer, chronic gastritis, enteritis, hyperlipidemia and constipation. Lab research and clinical observation globally have proved that propolis tincture can heal gastric and duodenal ulcers with high efficiency. Many special formulations of propolis are available for treating wounds, ulcers, inflammation connected with surgery, gynecology, the anus and intestines, stomatology and the five sense organs. For instance, the medical line of propolis developed for ligation and propolis tincture used for naevus have a high rate of cure, being used to cure recurring aphtha. Propolis tincture compounded with anesthesia is also used for dental extraction.

### ***15.3.5 Practicing Apitherapy***

The practice of apitherapy has been common in many parts of the world for centuries and recently has received increasing attention from bee scientists (Mizrahi and Lensky 1997) and alternative health practitioners (Rose 1994; Croft 1987; Rowsell and MacFarlane 1978; Walji 1996). Although it is of eastern origin, wherein it was known since the dawn of time, but its academic and scientific dimension has appeared in Europe a few years ago. In the USA the history of apitherapy goes back about 100 years, it was practiced by several prominent doctors including Dr. Bodog Beck, who started treating people in his New York City. The last surviving student of Dr. Beck is Middlebury, Vermont beekeeper named Charles Marz, who was known by the many as the “King of bee venom therapy”. He had been practicing apitherapy for over 60 years with remarkable results, and most of his experience had been with treating arthritis, but his success was with multiple sclerosis (MS). Today it is declared of national interest in some countries wherein it can validly replace 70 % of the first-line pharmacopoeia. In the U.S., it is the use of the venom through “bee venom therapy”, is now widely practiced and, its development is encouraged through research action of propolis against cancer. However, whether these practitioners from the ancient world really represent the fathers of apitherapy is questionable. Presently many people are practicing apitherapy but there is a major difference between apitherapy and the use of bee products in defined medical situations. Apitherapists believe that bee products can be used to cure most diseases. However, the use of bee products in conventional medicine is limited to certain indications where they have shown effects which are equal to or better than those of standard treatments – for example, in treating wounds and burns and as an interesting approach in arthritis (2–4). In Europe, it is through healing with honey that apitherapy is his admission to the hospital. There are various other reports on the internet of healing through apitherapy but unfortunately no detailed

information is available. Despite the relative lack of scientific evidence, the concept of apitherapy strongly appeals to many people, especially beekeepers. To strengthen and expand the range of natural “medicines” of apipharmacopee, the combination with essential oils allows products of the hive, the synergy resulting to respond more powerfully to serious diseases. Preclinical and clinical academic studies in various countries have shown the power of this therapy. Honeys have shown superior efficacy to the reference antibiotics, either on the duration of treatment on recidivism and chronic states. All this without negative side effects. Instead, stimulation of the organism has been found at the same time an action against the pathogen. Therefore, it can be made popular in natural therapies countries with low or no/negligible access to medicines.

## 15.4 Principles, Guidelines and Precautions

The principle recipient of apitherapy must willingly participate, have detailed knowledge of the procedure and understand the risk-to-benefits involved in receiving the therapy. Before treating, the patient should be asked routinely if he/she is allergic to honey or bee products, including bee stings. In most of patients response to honey applied to open wounds was reported as soothing, pain-relieving, and non-irritating, and demonstrated with no adverse effects. It is advisable not to proceed with a honey-containing dressing if the answer is affirmative. Occasionally, some patients report transient stinging on application of honey. The discomfort often disappears in a short period of time or after the first few applications. Analgesia is required only in those rare circumstances when pain may persist. Honey can cause allergic reactions. Besides sometimes it is contaminated with *Clostridium botulinum* spores, which poses a risk to infants, but not older children or adults. Sometimes, it contains excessive concentrations of acetylmandromedol which can cause nausea, vomiting, dizziness, sweating and weakness. It is known as “mad honey” and may cause bradycardia, atrioventricular (AV) block, and hypotension within a few minutes to several hours after consumption. Topically, honey may cause excessive dryness of wounds, which could delay healing.

Although bee pollen is used to enhance energy, vitality, memory and performance, and sometimes even to reduce allergies, though there’s little evidence to support any of these uses. However, taking natural bee pollen supplements may come with the risk of suffering a serious allergic reaction, including life-threatening anaphylactic shock. Bee pollen allergy which include itching, swelling, shortness of breath, light headedness, and anaphylaxis. Chronic allergy symptoms due to bee pollen include gastrointestinal (GI) and neurologic symptoms and eosinophilia. Though there are not a lot of reports in the science literature on how common or rare reactions are to bee pollen, one Italian study found that, between 2002 and 2007, the Italian national surveillance system for natural health products received 18 reports of adverse reactions associated with propolis, a bee pollen product. Those with a history of airborne allergies to pollen show positive reactivity to bee pollen supplements, but

a reaction can occur even without a history of allergies. Another report details a case of renal failure from bee pollen. Yet another study found substances known to cause liver damage (hepatotoxic pyrrolizidine alkaloids) in bee pollen.

There are several studies and reports that mention that propolis can be a potent allergen and can also be a potential sensitizer. Some other side effects of propolis are over sensitization of skin and blood vessel inflammation. It is recommended that those who are allergic to poplar bud, beeswax, bee stings, and other bee products, including honey, should avoid using propolis. Some of the known allergic side effects of propolis include eczema, swelling, redness, burning, peeling of skin, fluid collection, fever and in extreme cases, anaphylaxis. Most of the tinctures of propolis products contain high concentrations of alcohol and therefore are not safe to be used at the time of pregnancy. Propolis can cause allergic reactions and acute oral mucositis with ulceration from the use of the propolis-containing lozenges. Sometimes it may cause of renal failure. Topically, propolis-containing products, including some cosmetics can cause eczematous contact dermatitis. Royal jelly also appears to cause few side effects such as dizziness in a patient who took a combination product containing royal jelly, bee pollen extract, and a bee pollen plus pistil extract. Allergic symptoms are associated with IgE-mediated hypersensitivity reactions were also noticed in people with a history of atopy or asthma, royal jelly appears to cause a high rate of allergic symptoms including pruritus, urticaria, eczema, eyelid and facial edema, conjunctivitis, rhinorrhea, dyspnea, and asthma. In severe cases, royal jelly can cause status asthmaticus, anaphylaxis, and death.

On the other hand, bee venom is often administered subcutaneously. The most common adverse reactions including local erythema, swelling, and tenderness itching, urticaria, edema, malaise, flu-like symptoms, and anxiety to anaphylaxis. Other adverse reactions include chest tightness, palpitations, dizziness, nausea, vomiting, diarrhea, somnolence, respiratory distress, hypotension, confusion, fainting, and laryngeal edema or asthma. Risk of adverse effects seems to be increased in people treated with honeybee venom. Women seem to have more severe and more frequent adverse effects. For persons with a history of allergies or with asthma, taking royal jelly has caused bronchial spasms, acute asthma and anaphylactic shock. It is therefore imperative that anyone who is considering supplementing with royal jelly consults with a physician before its use, especially those who are allergic to bee stings, honey, or who have asthma. People with bee venom allergy, asthma and with a high incidence of allergy should avoid RJ intake. A special caution should be noted for pregnant and/or lactating women as well as for pregnant and/or lactating women as well as for small children. During the last 10 years there are several publications, reporting cases of allergy following the applications of Royal Jelly (RJ). Asthma and anaphylaxis have been reported in rare cases as well as one case of skin contact dermatitis. The allergy prevalence is 6.1 per 1,000 patients with a risk of RJ allergy have often an allergy towards bee venom and are atopic Therefore; RJ should be used as a food-ingredient or medicine only after an allergy test. Considering these facts practitioner and recipients must follow following Principles of Apitherapy (Mihaly 2004; Stangaciu 2005)

- (i) It should not be practiced as a self-treatment without the professional guidance or close supervision of a qualified health professional.
- (ii) It should be utilized only when an individual did not respond to conventional therapies, or conventional therapies cannot be practiced as the first treatment option.
- (iii) The diagnostic should be a 'holistic' one: classical (allopathic) but also energetic (as in Acupuncture), structural (Ayurveda), informational (Homeopathy) etc.
- (iv) An allergy test should be performed before administering any of the api-products, but in particular before administering bee venom. The test should be conducted by a qualified health practitioner in a medical clinic equipped with proper materials and designated life saving emergency procedures.
- (v) The principle receiver of the therapy should be prepared to initiate life-style and dietary changes, and to be an active participant in the healing process to maximize the benefits of api-products.
- (vi) The apitherapy treatment should be individualized contemplating the general state of health of the principle receiver, the health condition to be treated, and the route of delivery of the applicable api-product(s) for the condition. Each patient is Unique and must receive a unique treatment!
- (vii) The time of treatments should be in harmony with different (bio) rhythms; these rhythms vary with the patient, the disease, the season, the hour of the day etc.
- (viii) Apitherapy is not a 'panacea' and should be applied in harmony with other natural healing methods like Phytotherapy, Aromatherapy, Acupuncture, Organic diet, Ayurveda, etc.
- (ix) 'Primum non nocere'! Do not experiment on your patient! Use only safe methods and high quality products!
- (x) It is very important to improve the blood flow through other methods like Massage, Acupressure, Gymnastics, *Taiji Quan*, *Qigong*, *Hatha Yoga* etc.
- (xi) Good sleep and relaxation enhances the effect of bee products.
- (xii) Good environment (clean, ordered, non-polluted) and a 'positive-thinking' family/friends group are also beneficial.
- (xiii) Apitherapy is not a 'blitz' method! Perseverance and patience is necessary, especially in chronic diseases.
- (xiv) Educate your patients before, during and after treatments; make them true bee lovers and protectors! Each patient must become, in time, his own apitherapist.
- (xv) A good apitherapist must know the bee colony's life in detail; he must be also at least a good 'amateur' beekeeper.
- (xvi) Continuous study, good exchange of information with other specialists from several 'Apitherapy related countries', regular use of Internet can help in finding the best medical strategy for each person.
- (xvii) Before starting apitherapy, one must 'clean' the body with different 'detoxifying' methods: special diets, fasting, colon cleansing if necessary.
- (xviii) Medications prescribed prior to apitherapy under conventional care may slow or nullify the beneficial effect(s) of a particular api-product.

- (xix) The duration of an apitherapy treatment is proportional with the severity of the treated health condition, the proper execution of therapy guidelines, the knowledge of the therapy provider and the necessary positive attitude, willingness and participation of the principle receiver.
- (xx) After an unspecified period of time of symptom relief, re-initiating and repeating the apitherapy treatment may be needed to maintain an improved health status that previously did not respond to conventional therapies.

**Before considering the use of Api-products for treatments following principals cum guideline must be adhered with.**

- (i) The history of the condition should be carefully investigated Api-products may be administered as foods or dietary supplements except the case of bee venom.
- (ii) It should not harm or cause immediate, temporary or permanent damage in the health condition of the recipient.
- (iii) Close attention should be paid to contraindications to any of the Api-products, their relation to a specific health condition and interaction with medications taken currently or in the past by the recipient.
- (iv) Pharmacological activity can vary depending on the type of plant from which the nectar is obtained. For example, honey produced from poisonous plants can be poisonous.
- (v) Honey used in wound care should be of medical-grade standard and not sourced from honey destined for the supermarket shelf. Medical grade honey is filtered, gamma-irradiated, and produced under carefully controlled standards of hygiene to ensure that a standardized honey is produced.
- (vi) The use of Api-products in conjunction with one another may have a secondary indication for a specific health condition, support and amplify the healing effect of the principle product, in which the treatment outcome should be encouraged.
- (vii) The over use of any of the Api-products should be avoided, particularly the over use of bee venom.
- (viii) An emergency allergy kit should be kept on hand all the time in the event of an emergency.
- (ix) The effect of Api-products may be lessened or fully neutralized (antidote) with the simultaneous, but non-rationalized application of another Api-product, food, drink, cosmetics or some of their ingredients.

**Once the diagnostic is complete and treatment product is decided the practitioners must follow guidelines cited hereunder:**

- (i) The fresh, 'organic' bee products have usually better effects than the 'industrial' processed ones; over-heat, excessive filtration and refining are detrimental.
- (ii) Select attentively the bee products according to their origin, composition and pharmacological properties.
- (iii) The quality and methods of storage are most important for good efficiency.

- (iv) Apply with flexibility the producer's (manufacturer's) recommendations.
- (v) Gradually increase the doses of bee products.
- (vi) Use several 'vehicles' in order to better reach the affected area: liquids (tea, water, juices); creams/ointments; inhalations; suppositories, injections etc.
- (vii) Several methods of administration are better than only one.
- (viii) The dose of each bee product must be established with accuracy according to the age, weight, general/local condition of each patient, time of application etc.
- (ix) 'Simillia simillimum curantur': small doses can be used to treat bee product allergies (as in pollen, bee venom and honey allergies).
- (x) Because of their composition, all bee products have more or less beneficial effects, on all patients.

## 15.5 Apitherapy and Livelihood in Developing Nations

"Look back into the nature and then you will understand everything better". This quote by Albert Einstein has assumed greater significance these days as a complete paradigm shift from costlier antibiotic therapies to the old tradition remedies with minimum side effects like apitherapy is needed. In developing nations, the fruits of beekeeping like royal jelly, propolis, and bee venom can be easily harvested and can therefore be used as traditional, safe and organic medicine. Most of the ayurvedic companies in Nepal, India, and Pakistan use honey as an ingredient in their formulations. A survey conducted by ICIMOD revealed that some of these companies have long term supply contracts with the honey suppliers in the region, and special care is taken about the honey's origin from the point of view of bee species and flora. Beeswax is an important ingredient in the preparation of beauty and healing products, medicinal skin creams, and ointments. These are highly efficacious in the treatment of dry and chapped skin and lips, cuts, abrasions, and grazes. Recognizing the value of these products, ICIMOD's honeybee project has been providing training in the harvesting, processing, and use of beeswax for manufacturing healing and cosmetic products. Some entrepreneur beekeepers and a partner NGO, 'Surya Social Service Society (4S)' have started producing beeswax-based creams and ointments. There is a considerable interest and positive response from users and consumers about the efficacy of beeswax-based healing products. In the Himalayan region people consume honeycomb together with beebread without organized markets and collection systems being in place for these products. China and Myanmar are exceptions in that they have organized collection and marketing systems for pollen and beebread. However, unlike China developing countries are not yet benefiting from Royal Jelly although they have a basic understanding of the importance of royal jelly and few consume queen cells and larvae. Simultaneously, propolis is fairly new for nations that have introduced *Apis mellifera*. Nevertheless, bee acupuncture therapy is an important part of traditional Chinese medicine and very recently, has been gaining popularity in other these countries. According to Joshi

and Ahmad (2005) there are over 500 diseases and health conditions that can be prevented or treated with bee products. The use of bee venom therapy, royal jelly, and other bee products is common in China but bee products other than honey and beeswax are not yet widely used in medicine in other countries. In Countries where health services are severely limited, apitherapy is finding enormous application. To further familiarize communities with the apitherapy practice there is a need to incorporate this component in beekeeping training curricula and to popularize the information through the media. It is also necessary to persuade medical professionals and nutritional scientists about the medicinal value and health promoting effects of bee products. Furthermore, placing the system of apitherapy in action at the village level is expected to generate enormous livelihood opportunities for the mountain poor, not to mention health and medical benefits that are within their reach.

## 15.6 Healthcare Techniques

There are four therapeutic techniques: bee acupuncture, beeswax treatment, introduced electrohydronium of bee venom, and ultrasonotherapy with bee products.

### 15.6.1 *Bee Acupuncture*

The use of the sting organs of bees to carry out needling along meridians and points to treat diseases is called bee acupuncture. In bee acupuncture, the sting pulled out from live bees is used to carry out scattered needling on the affected area or the cutaneous region of the meridian related to the relevant diseases or where there is pain. Usually the stingers of 3–5 bees are used to perform scattered needling on an area. The number of *Apis mellifera* that can be used is about 10 but not more than 25, while that of *Apis cerana indica* can be more. Bee acupuncture, performed once every 2 days in 10–15 treatments, constitutes a period; the second period begins 5–7 days after the first.

### 15.6.2 *Electrohydronium of Bee Venom 2*

The treatment is carried out by directing the ions of bee venom into the human body through the skin using direct current, instead of the sting or injection. After treatment, the skin may suffer hyperemia, a slight swelling and itching. With this technique, the therapist needs to choose the part to be treated in order to keep a high concentration of r gradual releasing the bee venom ions into the blood stream, so that the therapeutic action would last longer than it would with other medicinal therapy.

### ***15.6.3 Ultrasonotherapy with Bee Venom***

Bee venom therapy can be coupled with ultrasonic therapeutic effects. It alleviates local inflammation and pain and is claimed to get rid of the effects of rheumatism, while activating blood circulation to dissipate blood stasis, and soften and resolve masses. Ultrasonic apitherapy conducted through the rectum acts on the prostate to locally treat chronic prostatitis, chronic prostatic hypertrophy; this is performed once a day, 20 min at a time, ten times per course.

### ***15.6.4 Other Application Methods and Product***

**Api-Laser Therapy:** creams, embrocations, gels, liniments, liquids, ointments

**Api-photophoresis:** creams, embrocations, gels, liniments, liquids, ointments

**Api-puncture:** direct bee stings

**Biopuncture:** sterile injectables

**Electrophoresis (iontophoresis):** embrocations, liquids

**Homeoacupuncture:** sterile liquids, sterile injectables

**Homeopathy:** creams, globules, oral liquids, tablets

**Homeosineatry:** sterile injections

**Injectables:** sterile injections

**Mesotherapy:** sterile injections

**Neural Therapy:** sterile injections

**Oral:** blends, extracts, globules, lozenges, oral liquid, pills, pellets, raw products, syrups, tablets

**Topical:** embrocations, balms, creams, liniments, ointments, rubs

**Ultrasonophoresis:** liquids, gels, liniments

### ***15.6.5 Learning and Practicing Apitherapy for Livelihood***

In order to learn more about apitherapy and its applications, name of some eminent persons are listed hereunder:

**Alberto Martinez** – a passionate about apitherapy and natural healing, he was a beekeeper for much of my life in Cuba. He is convinced that the products of the hive can produce positive and sometimes spectacular effects in the lives of people suffering from many ailments.

**Andrew Kochan** – practices medicine near Los Angeles, CA, and is the Past President of the AAS. He is involved in doing clinical research on the uses of bee venom therapy. He has presented his findings of successful treatment of several types of neuropathic pain with bee venom at national medical meetings. He also uses honey, pollen, propolis and royal jelly in his medical practice.

**Ataki Zita** – a plant doctor, natural healer, phytotherapist, apitherapist, who is expert in different practical techniques on Apitherapy, like bee sting therapy or honey face massage.

**Cheni Chen** – an expert on bee sting Therapy in Taiwan

**Donald Downs** – has been a beekeeper for over 45 years in Ohio who prides himself in practicing beekeeping without the use of pesticides or herbicides and making products from his hives including propoli. He is practicing apitherapy for nearly 30 years. He is known for treating people with unusual health conditions.

**Frank Yurasek** – left a 22-year career in marketing in 1985 to begin the study and practice of Eastern Medicine after his wife experienced miraculous pain relief following her first acupuncture treatment. Beginning with a preceptorship in acupuncture and Tui Na with Dr. Yin.

**Lun Han** – TCM for 18 months, Frank then continued on at the Midwest College of Oriental Medicine, where he received a MS in Oriental Medicine, and his PhD in 2002. He was also a Professor of Tui Na there, and a clinic supervisor since 1996. Frank has interned in China and Japan, and lectured and taught at schools and conferences throughout the US. Dr. Yurasek is currently Chair and Chief Clinician of Acupuncture and Oriental Medicine at National University of Health Sciences near Chicago, Illinois. Frank also has a Masters of Science in Herbal Medicine from The Midwest College of Oriental Medicine, where he also teaches Tui Na and supervises the Student Clinic. He is the first American inducted into the Japanese Oriental Medical Society and trained in Japanese Herbal Medicine as well as Western Herbs. He has also been studying and practicing Tai Qi and Qi Gong since 1985. By placing an emphasis on self-help, Dr. Yurasek is making Oriental medicine more accessible and empowering people to take control of their own health.

**Frederique Keller** – a Licensed Acupuncturist, as well as a Medical Herbalist in Long Island, NY, where she has also been a beekeeper for 20 years. She utilizes bee venom therapy for a variety of disorders and incorporates the products of the hive in her treatment protocols. She has traveled extensively and has done post graduate studies in China and India in the fields of Traditional Chinese Medicine and Classical Homeopathy.

**Gillich Istvan** – a natural healer, phytotherapist, apitherapist, exam char for the Hungarian State exam on Apitherapy and Phytotherapy since over 10 years. He studied in Thailand and India too. He is one of the most known Hungarian apitherapy teacher, he is working with bees since over 28 years. He wrote a book on apitherapy, which is the official (state recognised) teaching material for the education in apitherapy. He is teaching in Hungary, Bohemia, Great Britain, Germany and India. Since over 20 years he writes articles on the field natural healing to different newspapers.

**Glenn Perry** – an AAS Board member, beekeeper, apitherapy practitioner and lecturer, and owner of Glen Heaven Propolis in Ojai, California. He has been recognized internationally for pioneering a method to produce water-soluble propolis, and has also lectured worldwide on propolis and its applications for human and animal health.

**Hembing Wijayakusuma** – probably the most famous advocate of alternative therapy in the Indonesia, learned that apitherapy could prevent and cure diseases.

**Jerry Catana** – practice Bee venom therapy for skin cancer in USA.

**Jim Higgins** – an AAS Board member and beekeeper in Ohio, has worked for at least 30 years to promote apitherapy. Jim practices apitherapy, has trained others, and lectures on apitherapy throughout the US and Canada. He has also authored articles on the subject.

**Julio Cesar Diaz** – born in Argentina and Pampa resident in one of the poorest areas of the country, He is leading apitherapist in Argentina who advocates apitherapy as dietary supplements, and those that are merely therapeutic and treat lupus, arthritis, rheumatism and arthritis.

**Kate McWiggins** – a botanist and has practiced natural beekeeping for 20 years. She uses apitherapy as well as making several healing beeswax creams to treat people in the Seattle area.

**Kutasi Tama** – a master beekeeper, queen rearing expert, “Beekeeper of the year” from February, 2012 till February 2013, vice president of the (Hungarian Apitherapy Society, Budapest) His main interest is the production of high quality (medical grade) bee products. He is well known since his professional teaching on honey, beekeeping and propolis.

**Li Wanyao** – a leading apitherapist in Chinese Medicine acupuncture and massage college. She Concentrate on studying a variety of acupuncture and moxibustion applications, floating acupuncture, bee needle, recent therapy, medicine tank method, the ears therapy, head needle therapy, etc. all can handy application, and constantly develop, She is the editor of the Apitherapy book (3rd. edition 2012). It contains the treatment with apitherapy for several diseases. She gave a lecture at APIMEDICA, Zhenjiang, China, 2012.

**Lukacs Istvan** – a natural healer, TCM doctor, acupuncture doctor at Budapest, Hungary. His Main Therapeutic areas are Musculoskeletal disorders, Movement dysfunctions, Pain in the neck, Pain in the shoulders, Back pain, Lower back pain, Numbness in the arms or legs, Sport injuries, Rheumatic pain, Digestive disorders, Headaches.

**Michael I. Gurevich** – a holistically minded Medical Doctor trained in acupuncture, guided imagery and energetic medicine. For more than a decade he has been recognized yearly as among the best Psychiatrists in the New York Dr. Gurevich has been using injectable honey bee venom injections for over 10 years and he has witnessed a great response to this treatment modality. He has clinic experience treating multiple psychiatric and medical conditions.

**Mr. Elsaid Hammad** – practices two methods of natural treatment -Medicinal Leech Therapy and Bee Venom Therapy -way of curing an unlimited number of ailments that many people are suffering from. Ailments, in which main stream medicine has done little to none to help cure such as: Arthritis, Back pain, Prostate, Impotency, Varicose, Peripheral circulatory disorders, Phlebitis, Herpes and much more.

**Reyiah Carlson** – who lives in Vermont, has traveled the world to spread the word about bee venom therapy. She has also appeared in National Geographic and on

the Discovery Channel. She is termed as “The Bee Lady.” Approximately 65,000 people in the United States use bee sting therapy, according to the American Apitherapy Society. Carlson advises anyone undergoing bee-venom therapy should always have a bee sting kit available. She keeps antihistamine on hand, as well as epinephrine, a drug that can be used if someone goes into anaphylactic shock.

**Ricardo A. Brizuela** – a world specialist on Rheumatoid Arthritis, Bee sting therapy,

**Roch Domerego** – Born in Montpellier, Naturopath and university professor and vice chairman of the Commission of Apitherapy Apimondia. He is the author of several books on the subject. Both share passion bees. World specialists of apitherapy which utilizes bee products for therapeutic purposes, they combine tradition and modernity. Their research and extension in the field have for years as reference in apitherapy in green medicine in general.

**Stefan Stangaciu** – one of the foremost protagonists of apitherapy and he states that he has had more than 7,000 treatment successes with bee products. He has developed guidelines for apitherapy.

**Theo Cherbuliez** – an internationally known apitherapist practicing use of honey, pollen, and even bee stings for health care purposes. Professor Theodore Cherbuliez has led several medical studies in hospitals in Cuba who have proven the effectiveness of bee products on all kinds of diseases. He keeps an indoor beehive at his home in South Freeport. He has a medical degree and is a practicing psychiatrist as well. He taught for 7 years students in the Faculty of Medicine of Havana. He also worked for 3 years at the University Hospital of Limoges with Professor Bernard Descottes on the healing power of honey surgery.

Other prominent names are Pat Wagner (USA) for Multiple sclerosis, Charles Gaskill for Chronic Fatigue syndrome and Dr. Kochan (Institute for Healing Arts research LOS ANGELES, Santa Barbara). Besides, the Dr. Hugo Aguirre, Nelson Rolandi, Susana Ruz Dr Oscar Virgillito Dr. Robert Grand, Dr. Julio Diaz, Dr. Miguel Angel Balmaceda, Dr. Margarita Martinez, Dr. Alfredo Gabriel Bonetto, Lucomsky and Carlos Litwin are leading apitherapists known in North America and Argentina. Mr Luc Humbel (Belgium) and Mr Charles Wart (Belgium). Few more names are Dr. Alexander and James Fearnley produce medically graded Bee Propolis and other products. To learn more about apitherapy, a list of Apitherapy organizations (Table 15.2) and contact mails of office bearers of Apitherapy commission (APIMONDEA) can also be helpful for beekeepers of developing nations.

### Office Bearer

Dr Cristina Mateescu (Romania), Vice-President of the Commission, crismatapi-ter@hotmail.com

Mr Dimitris Selianakis (Greece) dselianakis@apipharm.gr

Dr Eberhard Bengsch (Germany) e.bensch@gmail.com

Mr Guillermo Prad (Cuba) gprado@finlay.edu.cu

Mr Adolfo Perez Pineiro (Cuba) adolfo@eeapi.cu

**Table 15.2** Apitherapy organizations

Apitherapy organizations		
American Apitherapy Society, Inc.	American Apitherapy Society, Inc.	Japan Apitherapy Association
13 Main St. – Box 0155	13 Main St. – Box 0155	Mr. Naoki Ota, President
South Freeport, ME. 04078-0155	South Freeport, ME. 04078-0155	Muyukimachi 6-3-26 Sizunai-machi
Tel.: (207) 865-0068	Tel.: (207) 865-0068	Sizunai-gun Hokkaido
Fax: (207) 865-0503	Fax: (207) 865-0503	Japan
		Tel.: (+81-146) 422-618
		Fax.: (+81-146) 424-218
Australian Apitherapy Society	Australian Apitherapy Society	Korean Apitherapy and Healthcare Association
George Zachary	George Zachary	Mr. Ko Sang-Ki, President 802-101, Mokdong Apt., 314 Shinjung-dong, Yangchon-gu, Seoul Korea
PO Box H221 Australia Square	PO Box H221 Australia Square	Tel.: (02) 2648-8608; (02) 2634-8608
Sydney, NSW 1215	Sydney, NSW 1215	Fax: (02) 6734-8608
Australia	Australia	
Tel.: (+61-2) 8904-9162	Tel.: (+61-2) 8904-9162	
Deutscher Apitherapiebund e. V	Deutscher Apitherapiebund e. V.	Lithuanian Apitherapy Society
Frau Irene Schachtner, Apitherapie Informationsbüro: Passau	Frau Irene Schachtner, Apitherapie Informationsbüro: Passau	Assoc. Prof. Dr. Algirdas Baltuskevicius, President
Kapuzinerstrasse 49	Kapuzinerstrasse 49	Putvinskio 33-3
D-94032 Passau	D-94032 Passau	LT-3000 Kaunas, Lithuania
Germany	Germany	Tel.: (+370-7) 225-231
Tel: (+49-0851) 31-545	Tel: (+49-0851) 31-545	Fax: (+370-7) 342-062
Egyptian Scientific Society of Apitherapy	Egyptian Scientific Society of Apitherapy	Romanian Apitherapy Society
Prof. Dr. Ahmed Gaffer Hegazi	Prof. Dr. Ahmed Gaffer Hegazi	Dr. Traian Gadoiu, Director
Microbiology and Immunology National Research Center	Microbiology and Immunology National Research Center	Romanian Center of Apitherapy (Apimedica SRL)
Dokki, Giza, Post Code: 12622 Egypt	Dokki, Giza, Post Code: 12622 Egypt	Strada C.A. Rosetti nr. 31 Bucuresti, sector 2. Romania
Tel.: 00202 377 12 11	Tel.: 00202 377 12 11	Tel.: (0 + 40-21) 212.3772 (Secretary)
Greek Scientific Apitherapy Center	Greek Scientific Apitherapy Center	Taiwan Apitherapy Association

(continued)

**Table 15.2** (continued)

Apitherapy organizations		
D. A. Selianakis, President	D. A. Selianakis, President	Chen-Yi Chen, President
76 Aristotelous Str.	76 Aristotelous Str.	108-8, Ain-Si Rd.
Acharnai Attica	Acharnai Attica	Chang-Hua City, 500. Taiwan
Greece	Greece	Tel.: (+886-4) 738-1524
Tel.: (+210) 246-5021	Tel.: (+210) 246-5021	Fax: (+886-4) 737-1149
United Kingdom Apitherapy Society	Apitherapy Counselling	John Gibeau (Apitherapy Training) Honeybee Centre
Mrs. Barbara Dalby, Secretary	Alan Lorenzo (Traveling Apitherapist)	7480 176th Street Surrey, BC, V3S 8E7, Canada
37 Cecil Road	Bee Well, Inc.	Tel.: (604) 575-2337
Cheshunt, Herts EN8 8TN	Stamford, CT 06902, USA	E-mail: gibeau@honeybeecentre.com, Web Site: <a href="http://www.honeybeecentre.com">http://www.honeybeecentre.com</a>
England, U.K.	Tel.: (203) 322-7872	
Tel.: (+44-1992) 622-645		

Mrs Faten Abd El Hadi (Egypt) fatenkamal@hotmail.com

Mr Franco Feraboli, MD (Italy) Franco.feraboli@libero.it

Prof Mitsuo Matsuka (Japan) mmat\_tamagawa@yahoo.co.jp

Mr Igor Krivopalov-Moscvin (Russia) columby88@yahoo.com

Mr Roch Domerego (France) roch@baroch.be

Dr Cristina Aosan (Romania) dr.aosan.cristina@gmail.com

### Consultants

Mr James Higgins (USA)

### Safety Protocol for Bee Venom Therapy (bvt) and all Bee Hive Products

If you take any Beta blockers or  $\beta$ -blocker (Beta-Adrenergic Blocking Drugs) DO NOT USE BEE VENOM.

If you take any Psychotropic Drugs DO NOT USE BEE VENOM.

If you are a Diabetic Insulin-dependent (Type 1) DO NOT USE BEE VENOM.

If you use Adrenocortical Steroids (Corticosteroid) which is a steroid hormone produced by the adrenal cortex or synthesized; administered as drugs they reduce swelling and decrease the body's immune response DO NOT USE BEE VENOM.

If you use Non-steroidal Anti-inflammatory Drugs (NSAIDs) – a drug that suppresses inflammation in a manner similar to steroids, effective in alleviating pain and fever. They act by inhibiting the synthesis of prostaglandins, leukotrienes, and other compounds that are involved in the inflammatory process DO NOT USE BEE VENOM.

If you have Liver or Adrenal Glands issues DO NOT USE BEE VENOM.

Before doing anything, obtain a bee sting kit and learn how to use it. Includes an *antihistamine* and an *epinephrine* auto-injector. Be sure to know how to use it, just for emergencies.

If you are taking any  $\beta$ -blocker DO NOT USE EPINEPHRINE.

If you have high blood pressure (hypertension), congestive heart failure (CHF), abnormal heart rhythms (arrhythmias), or chest pain (angina), DO NOT USE EPINEPHRINE.

If you use Monoamine Oxidase Inhibitors (MAOES) which are a class of antidepressants used for the treatment of depression, DO NOT USE EPINEPHRINE.

Do not consume alcoholic beverages or recreational drugs while doing bee venom therapy.

Avoid bee venom therapy while pregnant or on your menstrual cycle; if you have not eaten well or have not had enough sleep; if you are receiving dental treatment (anesthesia); or, if you have experienced strong emotions lately.

Do not do BVT without adequate vitamin C. It is highly recommended that you take 2–3000 mg of Vitamin C daily. Bee stings stimulate the adrenal glands to make cortisol, but the adrenal glands need Vitamin C to do this.

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