



Use of Apis Mellifica as a Homeopathic Remedy for Urticaria

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ABSTRACT

Urticaria, also known as hives, is a kind of skin rash with red bumps or welts on the skin that appear suddenly. It is a noncontagious disorder. Homeopathy, as a treatment for many diseases, is widely used in many parts of the world with Europe being one of the most common continents. For homeopathic treatment for Urticaria, the extract obtained from Apis Mellifica (western honey bee or European honey bee) has been found to be very effective due to its anti-inflammatory and antibacterial properties. It has been rated as a top medicine for treating urticaria in many studies. It helps correct the immune dysfunction, increases resistance to allergen and relieves itching and wheals. Other important natural products obtained from Apis Mellifica like honey and royal jelly have also shown beneficial effects on health. Although there are many studies and trials which show the beneficial effects of Apis Mellifica in treating Urticaria, there is still some controversy over its usage. Therefore, the public is advised to use it only when prescribed by healthcare professional or certified homeopaths and there is a critical need for additional clinical trials that can assess the potential role of Apis Mellifica in treating Urticaria.

KEYWORDS: Urticaria; Hives; Apis Mellifica; Homeopathy.

INTRODUCTION

“Urticaria, also known as hives, is an outbreak of pale red bumps or welts on the skin that appear suddenly”. It often comes with swelling called angioedema. There are many triggers of Urticaria. Allergic reactions, chemical in certain foods, sunlight, insect stings and medications are some of them. The cause often remains unknown. Urticaria can be acute or chronic. In acute Urticaria, the hives resolve within 6 weeks. The condition is considered chronic if the hives last more than 6 weeks. Physical Urticaria is caused by the stimulation of the skin by heat, cold, sun exposure, vibration, pressure, exercise and sweating etc. The urticaria mostly develops right where the skin was stimulated but can develop elsewhere too. Dermatographism is a type of physical urticaria which develops due to excessive scratching of the skin [1].

Pathophysiology and Epidemiology

The inflammation, redness and accumulation of fluid under the skin are due to histamine and other chemicals that release from the skin whenever it comes in contact with an allergen. It is non-contagious and does not transmit

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by contact with an infected person [2]. Around 15 to 23% of adults develop acute Urticaria at least once in their life time [3,4] and 0.5 to 5% of adults develop chronic Urticaria [5-7]. Some studies reported that an estimated 1 to 14.5% of children experience acute Urticaria [8-10]. And around 1.8% of children had chronic Urticaria according to a study conducted in Korea [11]. The most common symptoms of Urticaria include, but are not limited to, red raised bumps, itching and painful swelling which may lead to angioedema [12].

Medical and Homeopathic Treatment of Urticaria

Since there are no specific tests for urticaria, the diagnosis will depend largely on medical history and thorough physical examination. In acute urticaria, if a food, drug or latex allergy is suspected, skin prick tests, radioallergosorbent tests (RAST) or CAP fluoro-immunoassay may be done. Complete blood count and C- reactive protein are some tests done if chronic urticaria is suspected. Other investigations also help in the diagnosis and may be undertaken [13].

Currently the conventional medical treatment for urticaria includes second generation H-1 antihistamine with avoidance of allergens and trigger factors. In case of life-threatening anaphylaxis, adrenaline can be used as intramuscular injection. Long-term high dose systematic steroids are discouraged as their adverse effects can be serious [13].

Homeopathic use has widely increased over the past few years. It is common in many European countries. It was founded by the German physician Samuel Christian Hahnemann in 1796 with the idea of treating patients with much diluted preparations of substances which are believed to cause effects similar to symptoms presented if given in their undiluted form [14]. According to 2012 National Health Interview Survey, an estimated 1 million children and 5 million adults used homeopathy in America in the previous year [15] Furthermore, homoeopathy is included as acceptable treatment in publicly-funded healthcare systems in the United Kingdom, France, Italy, Germany, Switzerland, India, Pakistan, Brazil, and Mexico [16]. Switzerland has the highest estimate of treatment by a homeopath while UK has the highest estimate of all homeopathy use. Although no English surveys have been studied or published on it, homeopathy is a popular treatment modality in India [17]. Homeopathy is just as prevalent in Pakistan as it is in India with widespread uses. According to a survey of 200 patients in Karachi, 64.5% of those who responded believed in homoeopathy, and 67.5% participants had previously sought homoeopathic consultation and treatment [18]. Homeopathic treatment for Urticaria is believed to be more effective and beneficial than conventional treatment since conventional treatments

may lead to long-term dependency and reliance on anti-allergic medicines.

APIS MELLIFICA

Introduction

The western honey bee or European honey bee (*Apis Mellifica*) is the most common of all the species of honey bees worldwide [19,20]. The genus name *Apis* is Latin for "bee", and *Mellifica* is the Latin for "honey-bearing", referring to the species' production of honey. Like other honey bee species, *Apis Mellifica* (Syn: *Apis Mellifera*) creates colonies with "queen" being the only fertile female, "workers" which are the non-reproductive females and "drones" which are a small proportion of fertile males. Due to pests and diseases, they are however threatened. AS of 2019, the western honey bee has been listed as Data Deficient on the IUCN Red List, as the species has undergone significant declines in Europe according to several studies; however, it is not clear if they refer to population reduction of wild or managed colonies. To differentiate between wild and non-wild colonies, further research is required in order to determine the conservation status of the species in the wild [21].

Distribution and Life Cycle

Except Antarctica, *Apis Mellifica* now occupies every continent [22]. It is believed that the species originated in Africa [23] or Asia [24]. Humans are responsible for its considerable additional range, introducing European subspecies into North America (early 1600s) [25] South America, Australia, New Zealand, and eastern Asia [26]. These honey bee colonies reproduce by a process called "Swarming". In this process, a single colony splits into two or more distinct colonies [27]. Swarming mostly occurs in spring season to collect nectar and pollen from the blooming flowers. The hive creates around one or two dozen new queens which when reach near the completion of pupal stages, the old queen with two-thirds of adult workers leave the colony in a swarm, finding a new location for building a hive. In the old colony, just prior to emerging as adults, the daughter queens start "piping", and when these daughter queens finally emerge, they fight with each other and only one survives which becomes the new queen. The new queen, which is the only fertile queen, lay eggs. Virgin females lay eggs which develop into males. However, to produce female offspring, she needs to mate with the drones [22] (Figure 1).

The new bees undergo complete metamorphosis which consists of four stages: egg, larva, pupa and adult. The workers secrete wax which is used in building the hive, clean, maintain and guard it, raise the young and forage for

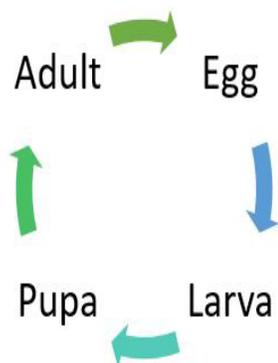


Figure1: Life cycle of *Apis Mellifica*.

Table1: Chemical Constituents of *Apis Mellifica* [29].

S.No.	Chemical Constituents
1	Melittin
2	Hyaluronidase
3	Phosphatase α -glucosidase
4	Phospholipase A2 (PLA2)
5	Phospholipase B
6	Apamine
7	Adolapine
8	Secapine
9	Minimine
10	Glycosidase Tertiapin
11	Mast cell degranulating peptide
12	Pamine
13	Procamine A
14	Protease inhibitor
15	Noradrenaline
16	Histamine
17	Dopamine
18	γ -aminobutyric acid
19	α -amino acids
20	Glucose
21	Fructose
22	Complex ethers
23	Potassium
24	Calcium
25	Magnesium

nectar and pollen. The workers are usually infertile females but when they are stressed, they may lay fertile eggs which can only develop into haploid (male) offspring as workers cannot mate with drones because they are not sexually fully developed. Queens and workers have a stinger to protect the hives [22]. Although the average span of a queen in most

subspecies is three to five years, reports from the German honey bee subspecies (*A. mellifera*) previously used for beekeeping indicate that a queen can live up to eight years [28]. Near the end of queen's life, her store of sperms is depleted, so she starts laying more unfertilized eggs and for this reason, beekeepers often replace queens every year or two. The life span of workers varies considerably with workers born in spring and summer having a lifespan of only a few weeks while those born in autumn live for several months [22] (Table 1).

Preparation and Chemical Composition of *Apis Mellifica* Extract/Tincture

Live honey bees are placed in a clean, wide-mouthed suitable container, preferably of glass. After much mincing and shaking, the menstrum is poured in, and macerated for fourteen days, swirling three times daily. The mother tincture obtained is filtered. It is important that the bees should not be pressed. It is repeatedly diluted till the removal of the virulent aspect of the bee venom, leaving only the curative agent. As a consequence, it becomes an effective potent for an actual honeybee sting and for ailments that have similar symptoms [29].

USES OF APIS MELLIFICA

Apis Mellifica leads to a variety of precious natural products into the beehive which include honey, propolis, royal jelly and pollen. It is believed to have many health benefits and is being used for many medical conditions.

Honey

The use of honey in medicinal mixtures has a long tradition in America [30]. According to a study conducted in northern part of Misiones province in Argentina, honey has been a popular remedy to treat gastrointestinal, respiratory and dermatological problems in Polish traditional medicine. Honey has also been of high value for heart disorders and for contagious diseases like chicken pox and measles. It has been used in mixture or pure. For example, honey was used with garlic and butter in hot milk as a mixture to treat cold and flu. For contagious diseases like Measles, a mixture of lactofermented cabbage juice, whey, honey and fat was used and was given to children to externalize skin eruption intensively and with this precipitate a healing process. These cures represent remedies mostly used in the past [31]. A study conducted among the farmers of mixed cultural (Criollos) and polish origins show that pure honey is used in respiratory system disorders (Poles: 67.3%, Criollos 54%). The order of importance is however different between groups for other body systems. Poles use pure honey to treat ailments of digestive system (10.9%), ophthalmic (9.1%), skin and humoral medicine syndromes (3.6%),

circulatory, and psychological and general problems (3.6%) while Criollos use pure honey to treat skin (16%), digestive, ophthalmic, and musculoskeletal (8%), psychological problems (4%), and general (2%) [32].

Royal jelly

Royal Jelly (RJ), a honeybee hypo pharyngeal gland secretion of young nurse and an exclusive nourishment for bee queen, has been used since ancient times for care and human health and it is still very important in traditional and folkloristic medicine, especially in Asia within the apitherapy. It is an emulsion of proteins, sugars and lipids in a water base, and is produced by the bee from pollen. Around 82 to 90% of protein content comprises of a group of proteins found in royal jelly and worker jelly, known as the major royal jelly proteins (MRJPs). These contain essential amino acids which cannot be biosynthesized.

The lipids present are different from the lipid of typical insect fats. These royal jelly lipids contain 8-10 carbon acids, hydroxy acids and diacids, which may be saturated, unsaturated, linear or branched. These unusual lipids make royal jelly highly acidic and a good antimicrobial [33].

Although there are many medical records of the usage of royal jelly all over the world, it has been mainly used in Asia. Recent reports indicated a high potential of this natural product to improve human health. Royal jelly's pharmaceutical properties, from animal models to humans, have been widely investigated. Despite the mechanisms of action are still under research, it attracted the attention of many investigators around the world. Royal jelly improves the reproductive health, neurologic diseases, and possesses several biological properties, such as: antibacterial, vasodilative, anti-inflammatory, hypotensive, anticancer, estrogen-like, antihypercholesterolemic, and antioxidant effects [34]. In the last years, royal jelly was reported as a valuable medicinal agent [35,36] for healthy aging and longevity. Due to its similarity with estrogen [37], it is used by postmenopausal women for the improvement and treatment of menopause-related complications and aging-related pathologies. It also inhibits tumor cells growth, tumor-related angiogenesis and activates immunity. According to Mofid et al. [38], up to 50% of cancer patients experience cancer-related fatigue, and the administration of both royal jelly and processed honey can alleviate the symptomatology. Anti-hypertensive and vasodilative effects of royal jelly were studied on hypertensive rats and isolated rabbit thoracic aorta rings [39]. This natural product can delay the natural aging process and disorders related to aging, can promote longevity and is useful in improving the quality of life [40]. Daily intake of royal jelly was reported to consolidate the memory abilities and learning skills in honeybees and rats [41]. Furthermore, this natural product

stimulates neurite outgrowth, induces the regeneration of hippocampal granule cells, and protects the central nervous system against oxidative injuries [42,43]. Royal jelly also has anti-diabetic effects. In healthy individuals, royal jelly significantly decreased serum glucose levels and increased insulin concentration [44].

China became the largest producer of royal jelly, and nowadays it possesses almost 90% of all world production. Annually, more than 4000 tons of royal jelly are produced and exported from China to the United States or Europe [45,46].

APIS MELLIFICA FOR URTICARIA

It is evident from many studies that *Apis Mellifica* has a role in treating Urticaria. It is used for minor burns with an excessive amount of erythema, swelling and pain. If clinically indicated, the patient must seek care at an emergency care facility without delay [47]. The French dentist, Jean Meuris, writes: "The treatment of anaphylactic shock: the worst kind of shock is the kind that occurs suddenly. The patient suffocates (edema of the glottis), while red spots appear on the throat and face which burn and sting and are worse by warmth. That is the picture of *Apis*, a remedy which we have always been able to rely on. Placing a few globules of *Apis* 15 (or 200 Korsakov) on the patient's tongue brings the shock to an immediate halt, and the symptoms usually disappear in the time that it takes for the globules to dissolve." [48]. During anaphylactic shock or severe allergic reactions, rapid doses of *Apis* can be given when there is rapid swelling and difficult breathing while seeking or waiting for emergency help [49].

Apis Mellifica has been rated as a top medicine for urticaria after the insect's bite, indicated for people with sensitive red rosy hue skin [50]. It has also been rated as a top medicine for urticaria that gets triggered in heat [51] and for urticaria that is accompanied by intense itching and a stinging and burning sensation on the skin [49,52]. It is one of the best homeopathic medicines for Urticaria [55] and also a leading medicine for cases of angioedema [53].

Apis mellifica was shown to be extremely effective and successful in treating urticaria in a study conducted on a 22-year-old male with urticaria in India. [54] Another research study done on five patients suffering with urticaria in Noida, Uttar Pradesh, India proved *Apis* to be beneficial [55].

This natural remedy for urticaria is effective for acute (e.g., bug bites, allergic reactions, etc) and chronic forms of urticarial [56]. The potential for permanent relief and recovery from chronic urticaria is possible by ensuring a restricted and strict diet by avoiding specific foods that cause hives like nuts, chocolates, fish, eggs, tomatoes, fresh berries, soy, wheat and milk, and also by avoiding

certain medications and using anti-itch medications (topical ointment like Apis Mel) [53].

A research study which included 60 Japanese patients with chronic skin diseases, including urticaria, observed that the holistic approach employed in homeopathy was effective in urticaria treatment and relief. In the study, a total of 88.3% of patients were reported with markedly substantial improvement in their condition [57]. Urticaria is not a local skin disease but a systemic disorder. Evidently, numerous factors such as genetics, systemic, emotional, physical and environmental factors trigger urticaria by destabilization and weakening of the immune system of the host.

Homoeopathic medicines such as Apis Mellifica, help to correct immune dysfunction and injury, enhance resistance to the allergen, improve emotional imbalance, revive a weakened immunity, relieve itching & wheals, alleviate associated allergen responsible conditions e.g., allergic asthma), help balance the internal body environment, and thus strengthening the system and eradicating the symptoms to improve overall health through recovery and relief [58].

Antibacterial and anti-inflammatory properties of Apis mellifica

"401", a peptide from the venom of Apis Mellifica has been found to have anti-inflammatory properties [59]. Another peptide from bee pollen (Apis Mellifica) suppressed the production of pro-inflammatory cytokines including cyclooxygenase-2 (COX-2), inducible nitric oxide synthase (iNOS), tumor interleukin-6 and necrosis factor transcript expression (TNF-alpha) in RAW254-7 macrophage cells [60]. A study from three regions of Kenya shows antibacterial activity of propolis (a complex resinous mixture) collected from Apis Mellifica [61].

CONCLUSION

Apis mellifica, a homeopathic medicine, have been found to be very beneficial in reducing the intensity, frequency and duration of attacks of Urticaria. There are a lot of conclusive evidences on the anti-inflammatory properties of Apis mellifica and its beneficial effects in the treatment and management of Urticaria through reducing the occurrence of pruritus, swelling, nervousness, decreasing the intensity of wheals and improving sleep quality, mood and concentration. Apis is also associated with significant alleviation of Urticaria symptoms in affected patients with the most encouraging results especially during the most severe and chronic cases of Urticaria, thus also leading to reduction in the use of conventional traditional anti-allergic medications. The general population, however, is advised to use Apis mellifica only when recommended by healthcare professionals, medical specialists, and certified

qualified homeopaths. Despite the fact that several clinical trials and studies have confirmed the effectiveness of Apis mellifica in treating urticaria, there is still some debate over its use for urticaria, and further clinical trials and studies with larger sample sizes are critically needed to assess and investigate the potential involvement of Apis mellifica in the treatment of urticaria.

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