Therapeutic Uses of Mom Zard (Beeswax) in Unani System of Medicine - A Review

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Abstract

Mom Zard (beeswax) is an animal source of origin medicine which is secreted by wax glands of honey bees. Since ancient periods Unani physicians have been using it as medicinal purpose orally as well as topically as a base of Qairooti (oil+beeswax), Zamad (paste) and Marham (ointment). Ibn-e-Sina (Avicenna) stated that Mom Zard has mainly talyeen (aperient), tahleel-e-a ramifications (resolution of inflammations) and indemal (healing) properties. The effects of mom zard can be attributed to the presence of palmitate, palmitoleate and oleate esters and triacontanyl palmitateto cerotic acid. The aim of this paper is to highlight the pharmacological actions and therapeutic applications of the Mom Zard as per descriptions in Unani literatures.

Keywords: Mom Zard, Anti-inflammatory activity, Healing activity, Anti-hemorrhoid Activity

Introduction

Mom Zard (beeswax) is an animal source of origin medicine which is secreted by wax glands of honey bees. The ancient Persians used wax to embalm the dead, while the ancient Romans modeled death masks and life-size effigies from beeswax. The world mummy derives from a Persian word meaning wax. In ancient times beeswax was used as an adhesive to join two surfaces together [1]. The great Greek physician Discorides wrote of rolling beeswax into sheets which was then used to make artificial flowers [1]. The Greek-Roman doctor Galen (2nd AD) used beeswax in a cooling ointment. The famous Iranian physician Avicenna (10th AD) recommended beeswax for medicine [1, 2]. The Greek philosopher Aristotle wrote between 344 and 342 B.C. that beeswax originates in the flowers. This theory, which was supported by the Roman apiculturists and writers Varro (116 to 27 B.C.) and Pliny, the Elder (23 to 79 A.D.), predominated until the Renaissance. Swammernerdam wrote in 1673 that wax was prepared by bees from pollen. In 1684 Martin John observed for the first time wax scales. In 1744 the German scientist Hornbostel reported that bees themselves produce the wax [3]. This report was not considered by the scientific community until the publications by Hunter in 1792 and in 1814 by Huber [4-5]. Hunter noted that bees secrete wax and build combs, and also, that newly built combs are white [4]. He observed that bees do not need pollen to make wax [4]. The views of Hunter were expanded by Huber, who proposed that sugar is needed to produce wax [5]. In 1903 the process of wax synthesis was described in detail by Dreyling [6].

Beeswax is used for cosmetics 25-30%, pharmacy 25-30%, candles: 20% and other purposes: 10-20%. Cosmetic applications are found in cold creams, moisturizing cream, depilatories (hair removers cream), hair creams, hair conditioners, lip balm, natural lip gloss,
DESCRIPTION

Beeswax (Cera alba) is a natural wax produced by honey bees of the genus Apis. The wax is formed by worker bees which secrete it into “scales” from eight wax-producing mirror glands on the inner sides of the sternites (the ventral shield or plate of each segments of the body) on the abdominal segments 4-7. For the wax-making bees to secrete wax, the ambient temperature in the hive must be 33 °C to 36 °C (91 °F to 97 °F) [14].

Mom Zard (Beeswax)

Source: The Beeswax Book, Chapter 1, Page No. 14, Bee Product Science, September 2009.

PHYSICAL PROPERTIES

The new is initially glass-clear and colorless, becoming opaque after mastication and adulteration with pollen by the hive worker bees. Also, the wax becomes progressively more yellow or brown by incorporation of pollen oils and propolis. The wax scales are about 3mm (0.12 in) across and 0.1 mm (0.0039 in) thick and about 1100 are required to make a gram of wax. Beeswax has a relative low melting point range of 62 °C to 64 °C (144 °F to 147 °F). If beeswax is heated above 85 °C (185 °F) discoloration occurs. The flash point of beeswax is 204.4 °C (400 °F). Density at 15 °C is 958 kg / m³ to 970 kg / m³ [14-15]. The taste of beeswax is normally pleasant and is not specific – any unpleasant taste is a sign of quality deterioration due to foreign matter. Odour should be pleasant and honey-like [15].

Identification of natural beeswax

When cold it is brittle; at ordinary temperatures it is tenacious; its fracture is dry and granular. The specific gravity at 15 °C (59 °F) is from 0.958 to 0.975, that of 85 ºC (185 ºF) discoloration due to 60 ºC (144 ºF) to 85 ºC (185 ºF) occurs. The flash point of beeswax is 204.4 ºC (400 °F). Densities at 15 °C is 958 kg / m³ to 970 kg / m³ [14-15]. The taste of beeswax is normally pleasant and is not specific – any unpleasant taste is a sign of quality deterioration due to foreign matter. Odour should be pleasant and honey-like [15].

Chemical properties

Chemically, beeswax consists mainly of esters of fatty acids and various long-chain alcohols. Its main components are palmitate, palmelate and oleate esters of long-chain (30-32 carbons) aliphatic alcohol, with the ratio of triacontanyl palmitato to cerotic acid. Beeswax can be classified into European and Oriental types. The saponification value is lower (3-5) for European beeswax and higher (8-9) for Oriental types. [14, 16]

Temperament (Mizaj)

Equable (Moatadil) [8, 9, 13, 17]
Hot -Wet (Har-Ratab) [10, 11]

Pharmacological actions (Af’aad)

i. Muhallil-e-Waram (Anti-inflammatory) [8-13, 17]
ii. Musakkin-e-Auja’a (Pain Sedative) [8-13, 17]
iii. Mulayyn-e-A’asab (nerves aperient) [8-13, 17]
iv. Mundaml-e-Qurooh (Wounds Healer) [9, 11, 17]
v. Mubhit-e-Laham (muscle fibre grower) [8, 12-13]
vi. Mujaffih-e-Qurooh (Cicative) [9, 11, 17]
vii. Kasir-e-Riyah (Carminative) [9-10, 17]
viii. Dafeey-e-Hikkah (Anti-pruritic) [9, 17]
ix. Dafeey-e-Jarah (Anti-scabies) [9, 17]
x. Nafeey-e-Bawaseer (Piles Reliever) [9, 13, 17]
x. Nafeey-e-Zaheer (Dysentery Reliever) [9, 13, 17]
xii. Nafeey-e-Kasrat-e-Tamas (Menorrhagia Reliever) [9, 13, 17]
xiii. Nafeey-e-Waj-ul-Mafasil (Arthritis Reliever) [9, 12-13]
xiv. Nafeey-e-Waj-us-Sadar (Thoracic Pain Reliever) [9, 12-13]
xv. Nafeey-e-Waj-ul-Meda (Stomach ache Reliever) [9, 12-13]
xvi. Nafey-e-Khushooonat-e-Halaq (Sore Throat Reliever) [9, 17]
xvii. Dafey-e-Jaraseem (Anti-bacterial) [18]

THERAPEUTIC USES (MAHALL-I-ISTEMALAT)

According to Ibn-e-Sina (Avicenna) Mom Zard has mainly talyeen (aperient), tahleeel-aauram (resolution of inflammations) and indemal (healing) properties [2]. It is specially recommended in the treatment of waj-ul-Mafasil (arthritis), waj-us-sadar (thoracic pain), waj-ul-meda (Stomach ache) and bawaseer (hemorrhoid) [8-13, 17]. It is also recommended in saual-e-yabis (dry cough), bahwat-us-saut (horseness of voice), qarha-e-medi (peptic ulcer) and kasrat-e-tamas (Menorrhagia) [8-13, 17].

SCIENTIFIC STUDIES

Few scientific studies are illustrated below regarding Mom Zard.

ANTI-INFLAMMATORY ACTIVITY

Mendoza et al (2013) showed that D-002 (A Mixture of Beeswax Alcohols) in the dose of 50 – 400 mg/kg was effective for preventing cartilage injury and structural cartilage changes, pannus formation and the degree of inflammation in rats with Monosodium Iodoacetate (1mg/50 µL) induced Osteoarthritis [19].

Mendoza et al (2013) further studied that oral administration of D-002 (50 – 400 mg/kg) significantly decreased the formaldehyde (0.1 mL of 2.0%) induced increases of rat paw and ankle enlargement [20]. Both studies suggest D-002 (A Mixture of Beeswax Alcohols) has potential anti-inflammatory action on osteoarthritis.

ANTI-STRESS ACTIVITY

Anilkumar et al (2007) studied that the polyphenols from beeswax exhibit hepatoprotective and antioxidative properties in rats. In this study the polyphenols extracted by 80% methanol from bee wax (PBW) were fed to Wistar rats with CCl4 (1.5 ml/kg body weight) -induced stress, at 100 mg/kg body weight and 200 mg/kg body weight for 14 days. On 15th day all the rats were sacrificed, blood was collected for serum and organs/tissues were excised for biochemical analysis. The results showed a significant decrease in hepatic antioxidant enzyme activities viz. catalase, glucose-6-phosphatedehydrogenase (G-6-PDH), glutathione peroxidase (GSH-Px), glutathione reductase, superoxide dismutase (SOD) and a significant increase inglutathione S-transferase (GST) and γ-glutamyl transpeptidase (G GT) byCCl4, probably due to the peroxidative effects. The prophylactic use of PBW at 200 mg/kg level resulted in a significant increase in CCl4-induced reduction in catalase, G-6-PDH, GSSGR and SOD. The hepatic levels of lipid peroxides viz. malondialdehyde, conjugated dienes and lipid hydroperoxides, enhanced by the administration of CCl4 were brought down by the ingestion of PBW at a level of 200 mg/kg. The hepatotoxicity caused by the administration of CCl4 was reduced significantly [21].

ANTI-HEMORRHOID ACTIVITY

Noori et al (2006) showed a mixture of honey, olive oil and beeswax is safe and clinically effective in the treatment of hemorrhoids and anal fissure when applied locally. It was resulted, significant reduction in pain, bleeding and itching with hemorrhoids and anal fissure after the 4 weeks of treatment [22].

HEALING ACTIVITY

Moustafa et al (2015) revealed that a Mixture of, Beeswax, Honey and Olive oil, clinically effective in Treatment of Canine Deep Second-Degree Burn. This study is performed in animal model to compare the healing of deep second degree burns treated with silver sulfadiazine (SSD) and a Mixture of Honey, Beeswax and olive oil (MHBO). A standard deep second-degree burn wound was produced, in five dogs, each dog has three groups; MHBO, SSD 1% cream and control group(no topical therapy at all). The efficacy of treatment was assessed based on the healing percentage of the wound, time to complete wound healing and the degree of inflammation and exudation. Wound contraction was higher in MHBO group than both SSD and control group. It was significantly higher in MHBO group than the control group on days 18, 21, 24 and 27 while significantly higher than the SSD group on days 21 and 24. The mean times for wound complete closure were 21.9±2.23 and 24.7±2.39 days for MHBO and SSD, respectively, being significantly shorter for MHBO. Clinically, inflammatory reaction and exudation were less in MHBO group than the SSD group and control group. Using topical MHBO will accelerate the burn wound healing process in comparison with both the control and SSD groups [23].

THERAPEUTIC DOSAGE (MIQDAR-E-KHOORAK)

500 mg. – 1 gm. for internal use. [11-13]
12 gm. for external use. [11]

Adverse effects (mu'zir asraat)

Muqalil-e-Ishtheha (Anorexia), Masدوood-e-Masaam (Obstruction of skin pores) [12, 13].

Corrective (Musleh)

Zeerah wa shaker, Roghan-e-Kunjad (Flaxseed Oil) [12, 13, 17].

Substitute (Badal)

Zift wa Zait, Roghan-e-Gul wa Murdarsang, Ard Baqla [12, 13, 17].
Formulations (Murakkabat)

Ointments (Marahim)
Marham Kafoor, Marham Quba, Marham Dakhilyoon, Marham Raal, Marham Kharish Jadeed, Marham Hina, Marham Bawaseer, Marham Khanazeer, No Bars Ointment [24-26].

Pastes (Zamadat)
Zamad Jaleenoos, Zamad Bawaseer [24, 27].

Creams
Jiyofresh Cream, Acne Pimple Remover Cream [26].

Qairooti
Qairooti Ard Baqla, Qairooti Ard Jau, Qairooti Ard Krishna [24-27].

CONCLUSION

Mom Zard is a very important and beneficial medicine for inflammation of joints, thoracic pain, gastric pain, ulcers, internal and external hemorrhoids, orally as well as topically. The scientific studies undertaken in this regard amply testifies and validates the claims of Unani physicians. However, Extensive research should be carried out on it for their better therapeutic utilization.

REFERENCES

1. Bogdanov S: Beeswax: Uses and Trade. Bee Product Science, September 2009, 1-14.
2. Ibn-e-sina AAH: Al-Qanoon Fit-Tib. Urdu Translation by HSGH Kantoori, Idarah Kitab-us-Shifa, New Delhi, YNM, 2: 391.
3. Hornbostel HC: Neue Entdeckung wie das Wachs von den Bien enentsteht. Vermis Bibliothek Hamburg, 1744, 62.
4. Hunter J: Observation on bees. Philos. Trans. R. Soc. Lond B Biol. Science, 1792, 82: 128-196.
5. Huber F: Nouvelles observations sur les abeilles. Tome 1 & 2. J.J. Paschoud, Paris & Genève, 1814, 479.
6. Dreyling L: Die wachsbereitenden Organe bei den geselliglebenden Bienen. Dissert. Uni Marburg, Zool. Jahrhucb, 1905, 22: 1-42.
7. Crane E: Bees and beekeeping: Science, practice and world resources. Cornell University Press Ithaca, New York, 1990, 231.
8. Goswami HRL: Bayan-ul-Advia. 2nd Edition, Goswami Kutub Khana Delhi, 2:227-228.
9. Ghani N: Khazanat-ul-Advia. Munshi Naval Kishore, Lucknow, 1920, 2:757-759.
10. Khan W, Khan MJ: Makhzan-ul- Mufradat Ma Khawas-ul-Advia. MatbaAb-ul-ala Agra, YNM, 246.
11. Ali HSS: UnaniAdvia-e-Mufrada. 8th Edition, Qaumi Council Barai Farogh Zaban-e-Urdu, New Delhi, 1999, 295.
12. Rafeequddin M: Kanz-ul-Advia Mufrada. 1st Edition, published by university publication unit, Sarfaraz House, AMU, Aligarh, 1985, 463.
13. Kabeeruddin HM: Makhzan-ul-Mufradat Almaroof Khuas-ul-Advia. Faisal Publication Deoband, U.P., 2000, 558-559.
14. Mendoza S, Noa M, Valle M, Mendoza N, Mas R: Ameliorating Effects of D-002, A Mixture of Beeswax Alcohol, on Monosodium Iodoacetate-induced Osteoarthritis in Rats. Int. J. Pharm. Sci. Rev. Res, 2013, 19 (1): 10-15.
15. Mendoza S, Noa M, Valle M, Mendoza N, Mas R: Effects of D-002 on Formaldehyde-Induced Osteoarthritis in Rats. IOSR Journal Of Pharmacy, Aug-2013, 3 (7): 9-12.
16. Noori S, Khelod S, Thia N, Ali N: The Safety and Efficacy of a Mixture of Honey, Olive Oil, and Beeswax for the Management of Hemorrhoids and Anal Fissure: A Pilot Study, The Scientific World Journal, 2006, 6: 1998-2004.