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Stachys lavandulifolia Vahl. and its Relation With Marmazad Activities in Traditional Manuscripts

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Context: In modern phytotherapy, *Stachys lavandulifolia* Vahl., a type of *Stachys* also known as Mountain Tea (Chay-e-Kouhi) has been widely studied based on its botanical and therapeutic characteristics over the recent decades.
Evidence Acquisition: The present study investigated morphology, botanical characteristics, and some therapeutic activities of this plant and compares them with those of Marmazad, as the traditional equivalent of *Stachys* in traditional iranian medicine (TIM), to evaluate the similarities between *Stachys* and Marmazad.
Results: In this study by exploring morphology, botanical properties and therapeutic activities of Stachys from modern botany and Marmazad in TIM, comparing them and considering similarities between those botanical properties and some of therapeutic activities this outcome was drawn that what had been known as Marmazad in TIM nowadays is equal to Stachys or Chay-e-Kouhi in modern botany.
Conclusions: The achieved findings from this comparison between botanical characteristics and therapeutic activities of *Stachys* based on modern researches and those of Marmazad by referring to traditional manuscripts revealed significant similarities between them. Also, there were some applications mentioned for Marmazad in TIM which could help new researchers in modern phytotherapy to deal with those dimensions of this herb which are not worked out yet.

Keywords: Stachys; Traditional Medicine; Modern Medicine

1. Context

The Lamiaceae family is one of the largest and most widely recognized families of flowering plants and comprises 258 genera and around 7000 species worldwide (1). The genus *Stachys*, one of the largest genera of the Lamiaceae family, includes about 300 species. More than 39 species of this genus are grown and distributed in various regions of Iran (2). *Stachys lavandulifolia* Vahl., a type of *Stachys* (3), is a native plant that is widely distributed in different regions of Iran and known as chay-e-kouhi (4-7). This plant is used as herbal tea and a medicinal plant in Iranian folk medicine (5, 6). It is widely distributed in different regions of Iran and popularly known as Chay-e-Kouhi (8). Different studies have mentioned *Stachys lavandulifolia* Vahl. (*S. lavandulifolia*) as medicinal plant in Iranian folk medicine (7, 8).

Based on Iranian folk medicine manuscripts, this plant is known as Marmazad and in order to rationalize the correspondence between *Stachys lavandulifolia* Vahl. and Marmazad, first it is necessary to explore TIM role and its relevance with modern medicine.By representing traditional medicine knowledge in today's universities and scientific communities after years of ignoring this comprehensive knowledge, reemploying this experience undoubtedly requires knowing the language and special terms of these resources and correct recognition of their current equivalents as well. On one hand each of these valuable resources belongs to its own historical period, sometimes with time distance of 1000 years between them, and also their language, style of writing and dialect has its origin in diverse geographical areas. These cases cause many differences in terms and even common names of medicines and remedies mentioned in traditional references.

On the other hand, searching a herb of modern botany in traditional manuscripts is too difficult and is possible just by knowing the specific equivalent name of the herb. It is obvious that definition of current names of herbs, namely equalizing their name in traditional manuscripts with scientific name of the herb is necessary to obtain better effect and efficacy.

2. Evidence Acquisition

The current paper deals with the similarities between *Stachys lavandulifolia* Vahl. and a remedy named Marmazad mentioned in Makhzan al-Advia, which is morphologically and characteristically similar to *Stachys lanavdulifolia* Vahl., also known as chay-e-kouhi (Mountain Tea), in traditional and medicinal herbs (9). In the following sections *Stachys lavandulifolia* is compared with Marmazad, based on its botanical, morphological and therapeutic aspects, to indicate similar characteristics between them and find the potential research activities.

3. Results

3.1. Morphology of Stachys lavandulifolia Vahl.

Suffrutescent perennial with basal rosettes of sterile shoots, flowering stems numerous, 10 cm - 30 cm, sparsely to densely pilose, sometimes absent, rarely white-tomentose with unequal stellate hairs. Verticillasters (at least lower ones) usually remote, [2 or 4 or 6]-flowered. Bracteoles few, linear, 2 - 3 mm, hirsute. Pedicels 1.5 - 2 mm. Calyx regular, subcampanulate, patently pilose, tip softly spinescent. Corolla purple to mauve, 13 mm - 15 mm, tube subincluded (10).

3.2. Morphology of Marmazad in Makhzan-al-Advia

It is a herb with the height of one Shabar is about 22 cm (between 16 - 25), pilose in such a manner that seems to be covered with soft carded cotton; reddish violet small flowers; and from the stem to the end is covered with very small leaves mixed with flowers (11).

3.3. Constituents of Stachys lavandulifolia Vahl.

Based on recent studies on this herb, seventy-nine compounds were identified, representing 98.2% of the essential oil, in which the major components were germacrene-D (13.2%), β-phellandrene (12.7%), β-pinene (10.2%) myrcene (9.4%), α- pinene (8.4%) and Z-β-ocimene (5.8%). In another study spathulenol (35.0%) and caryophyllene oxide (25.6%) were the main components of the oil (12). Another study revealed the existence of α-thujone (0.3% - 32.3%), Δ-cadinene (11.6%) and 1, 4-methano-1 H-indene (10.1%) (13).

3.4. Temperament of Marmazad

As Aghili and Chaghmini (cited in Rahimi et al. (14)) note the principles of TIM are based on quadratic elements. These four elements are air, fire, water, and soil and have their specific qualities: air is hot and moist, fire is hot and dry, water is cold and moist, and soil is cold and dry. Followers of this doctrine believe that the entire world is made from quadratic elements and the differences and diversities between objects are attributed to different ratios of these four elements used in their structures. Thus, every object in the world has a specific quality based on dominant element (s) in its structure. This specific quality is known as temperament.

Shahabi et al. (15) certify that the belief about temperament has existed not only in TIM but also in many other traditional medical theories, including Greek, Arabic, Roman, Indian, European, and Chinese traditional medicines. Plants are not an exception to this rule and have their own temperaments. In the present study, the nature of the herb is warm and dry (11).

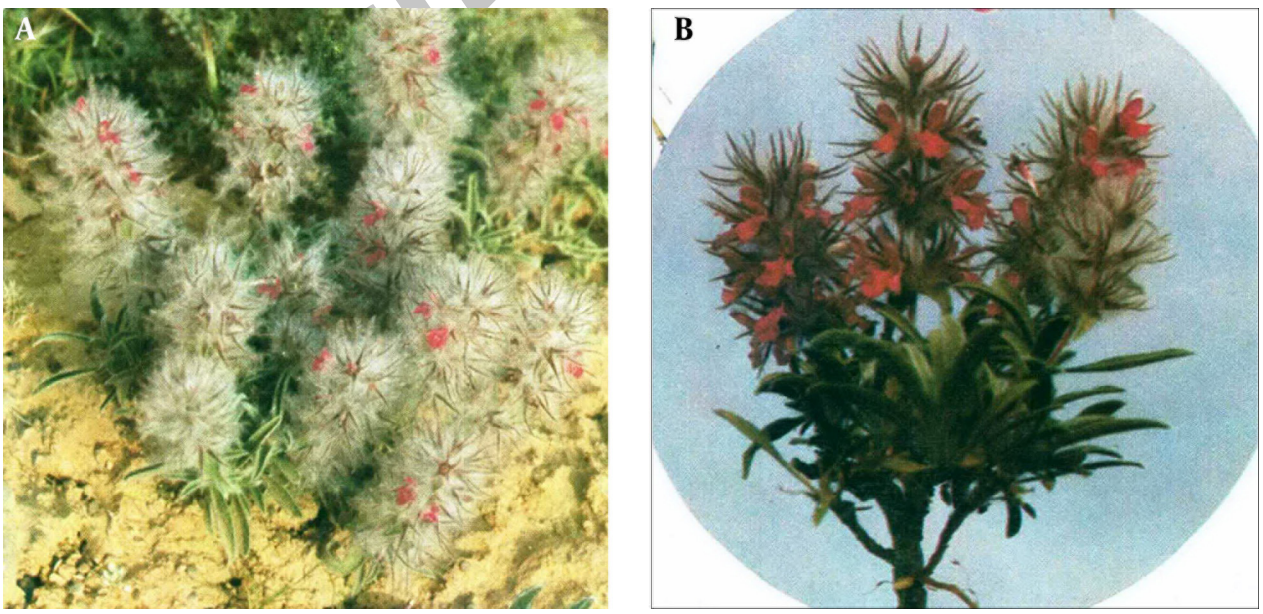

Figure 1. Pictures of *Stachys lavandulifolia Vahl.*(3)

3.5. Studies on Stachys lavandulifolia Vahl. or Chay-e-Kouhi

On the basis of the studies conducted on the activities of Chay-e-Kouhi or *Stachys lavandulifolia* Vahl. some events are declared as follows:

Possibility of abortion depending on dosage in animals (16), useful to control premenstrual syndrome (PMS) and primary dysmenorrhea symptoms (17), anxiolytic in animals (18), strengthening stomach and preventing gastric ulcers caused by alcohol consumption (19), useful to treat *Leishmania* Major (20), sedative and hypnotic (4, 21), analgesic and anti-inflammatory (8) useful to treat fatigue, nausea and vomiting associated with primary dysmenorrhea (22), may be a potentially effective treatment for dysmenorrhea, particularly because of its antispasmodic effects (23), antipyretic and spasmolytic effects (21, 24), gives rise to failure in fetus survival and consequently, abortion (21). Tundis et al. (25) certify that anxiety disorders are among the most prevalent of all mental disorders that exist in many forms and could have a huge impact on the quality of life. Some *Stachys* species have attracted attention for their anxiolytic effects. Particularly, *S. lavandulifolia*, is used as an anxiolytic and sedative in the Iranian folk medicine (20, 26). Its action on insomnia (20) is approved. It is known for its anti-depressive, and appetite stimulant effects (27).

It is used for digestive disorders (28-30); *Stachys* species are used as herbal remedies and consumed as wild tea in Anatolia as well as Iran. Decoctions or infusions of *Stachys* are applied as tonics to treat skin or taken internally for stomach disorders (29).

As Taheri et al. (30) certify the flowering shoots and the boiled trichate flowers of this plant are extremely important to treat diseases such as headache, stomachache, gastritis, and nerve disorders. In their study they also showed that extracts of *Stachys lavandulifolia* Vahl. contain some compounds with antibacterial properties that can be used as a traditional drug to treat infectious diseases.

Mountain tea is anti-inflammatory (31, 32), antibacterial (33), anticancer (34), prevents infection to *Helicobacter pylori* (35)and has antioxidant effects (36).

3.6. Some Activities of Marmazad

Following parts demonstrate the properties ascribed to Marmazad in traditional sources.

3.6.1. Nervous System

It is beneficial for diseases related to phlegm excess (11) and efficient to strengthen the brain and ameliorate some types of headaches (11, 37, 38).

3.6.2. Digestion and Genital Systems

It is beneficial to strengthen stomach and treat its diseases, to treat some liver disorders , strengthening it and amelioration of its diseases, to treat diseases of internal organs (11, 37). Sometimes the existence of excessive gas in body can result in pains (39). Marmazad is useful to expel excessive gas. It is beneficial for uterus disorders such as amenorrhea in which it works as menstruation activator and prevents nausea and vomiting (11, 37).

4. Conclusions

From a comparative view, in the first step it is obvious that many new applications of the herb Chay-e-Kouhi or *Stachys* are in accordance and conformity to those of herb Marmazad since both have similar properties to treat brain, stomach, uterus, and internal organs. This conveys the fact that in spite of unequal facilities and laboratory equipment of the old days compared with the modern technological and scientific equipment, power of knowledge and accuracy of recognition in old sages were so considerable that can be compared with new scientific findings and it shows how they established their perceptions of herbs properties on the basis of clinical evidence.

Next, it is noteworthy that in traditional manuscripts more applications and sometimes more comprehensive activities were pointed under the name of Marmazad than what is mentioned for Chay-e-Kouhi or *stachys* today; furthermore those qualities of Marmazad, like treating some types of headache and liver diseases which are not researched yet, could help scientists to deal with undiscovered aspects.

Considering the results of the present study, it is worth concluding that clarifying the connection between the traditional names of a specific herb with its new scientific name can help us to benefit much more from its properties in today medicinal applications. When it is said that Marmazad is a menstruation activator, this herb not only is an abortive agent but also includes the wide range of applications such as amelioration of dysmenorrhea or amenorrhea. Also when it is stomach strengthening, it is possible to study on wider use of this herb to treat stomach disorders like vomiting, nausea, dyspepsia, gastroesophageal reflux disease (GERD) and peptic ulcers.

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Authors' Contributions

Mr. Sadeghpour: developing original idea and designing the framework of the research; Mr. Minae: supporting the idea and observing the trend of the study by giving step by step practical hints and helpful guides; Mr. Sardari: providing information from traditional resourc-

es; Mr. Sharifi: data collection from modern botany; Mr. Sedigh in cooperation with Mr. Sardari, studied, selected and compared both traditional and modern activities of the herb and abstracted.

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