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ISSN 2321 - 6328

## Review Article

### SANKHAHOLI (*EVOLVULUS ALSINOIDES* LINN): A VALUABLE HERB OF UNANI MEDICINE

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Article Received on: 19/07/22 Accepted on: 08/09/22

DOI: 10.7897/2321-6328.104159

#### ABSTRACT

*Sankhaholi* (*Evolvulus alsinoides*) is a small perennial herb belonging to the family Convolvulaceae. It is also known as Vishnukranti (Sanskrit), Sankhavalli (Marathi) and Vishnukraandi (Tamil). According to Unani Medicine the notable medicinal properties reported for the treatment of flatulence, haemorrhoids, diabetes, frequency of micturition, burning micturition, gonorrhoea, syphilis, and other renal and bladder diseases. It contains pentatriacontane, triacontane and betasitosterol. Various pharmacological properties reported are Antihypertensive, Antioxidant, Anti Stress, Hypolipidaemic etc. This review presents a detailed survey of the literature on the identification of plant, phytochemistry and medicinal properties from the perspective of Unani Medicine and pharmacological studies.

**Keywords:** Sankhaholi, *Evolvulus alsinoides*, Nervine Tonic, climber, Anti-stress.

#### INTRODUCTION

Medicinal plants have been used for centuries in traditional health care systems and numerous cultures worldwide. With the recent advancements in plant sciences, there has been a tremendous increase in the use of plant-based health products in both developing as well as developed countries. According to an estimate of the World Health Organization (WHO), about 80% of the world population uses herbs and other traditional medicines for their primary health care needs. The present drug Sankhaholi (*Evolvulus alsinoides* blue flowered and *Convolvulus pluricaulis* white flowered), belonging to the family Convolvulaceae is an important climber used as single and in many compound preparations in Unani system of medicine, possessing memory enhancing, anthelmintic, aphrodisiac, appetizer, brain tonic, blood purifier, nervine tonic, anti-inflammatory, diuretic, hypoglycaemic, anti-convulsant and other activities. There is a great confusion about the proper identification of *Sankhaholi* as four plants are referred to Sankhaholi in literature, they are: *Convolvulus pluricaulis* Chois, and *Evolvulus alsinoides* from Convolvulaceae family, *Canscora decussata* Roem from Gentianaceae family, and *Clitoria ternatea* from fabaceae family<sup>1</sup>. As in several articles, researchers mentioned *Sankhaholi* and *Sankhpushpi* synonymously but now it is clear that the source of *Sankhpushpi* is another drug named *Clitoria ternatea* of Fabaceae family, which is named due to the resemblance of its flower with Sankh. *Canscora decussata* Roem is used as substitute of Sankhpushpi in Bengal.<sup>2</sup> According to Unani Medicine as described by Hakim Najmul Ghani, Sankhaholi (*Evolvulus pluricaulis* white flowered) is a climber having thin branches and leaves spread on the ground. It has numerous tiny white flowers which give a marvellous look in full moon, especially at the last portion of night. It gives astringent taste.<sup>3</sup> Some scholars have wrongly mentioned it as Sankhpushpi which is obtained from *Clitoria ternatea* of fabaceae family.

#### Habitat and Distribution

Sankhaholi (*Evolvulus alsinoides*) is a small, hairy, diffuse and perennial herb. It grows in open and grassy places throughout India and other sub-tropical countries.

#### Botanical Description

*Evolvulus alsinoides* is a perennial herb belonging to the family Convolvulaceae. It is a small woody branched root stock; stem, membranous, more than 30 cm long, prostrate, spreading, slender, rounded, wiry usually covered with long spreading hairs but sometime quite glabrous. Leaves are small numerous 6-20 by 4-8 mm, alternate, elliptic-oblong, obtuse, strongly petioles very short, sometimes almost absent. Flowers are light blue or deep blue, very small, solitary or sometimes in pairs. Peduncles are very long, filiform, axillary; calyx, densely silky and sepals 4 mm long, lanceolate, very acute. Corolla 5 mm long; fruits are usually glabrous, four-valved thin capsules, 3-4 mm diameter<sup>4-7</sup>.

#### Taxonomical Classification

Kingdom: Plant  
Subkingdom: Tracheobionta - Vascular plants  
Super division: Spermatophyta - Seed plants  
Division: Magnoliophyta - Flowering plants  
Class: Magnoliopsida - Dicotyledons  
Subclass: Asteridae  
Order: Solanales  
Family: Convolvulaceae - Morning-glory family  
Genus: *Evolvulus*  
Species: *alsinoides*

**Mutaradifat (Vernacular names)** <sup>3,8-12</sup>.

Bombay: Sankhavalli  
 Gujarati: Sankhavalli, Kalisankhavali  
 Hindi: Sankhaholi  
 Malayalam: Vishnukranti  
 Marathi: Vishnukranta  
 Punjabi: Kodyali  
 Sanskrit: Vishnukranti, Vishnugandhi  
 Tamil: Vishnukarandi, Vishnukaranthi  
 Telugu: Vishnukranta  
 Unani: Sankhaholi  
 Urdu: Sankhaholi  
 English: Canscora

**Mizaj (Temperament)** • Hot and wet <sup>9,13</sup> Cold and wet <sup>3,14</sup>

**Miqdar Khurak (Therapeutic Dosage):** 6-9 g <sup>13,14</sup> 3-8 g <sup>15</sup>

**Af'al-o-Khawas (action and uses)**

Muqawwi-i-Hāfiza (memory tonic), Qātil-i-Didan (anthelmintic), Mufarrih (alexiteric), Nāfi' Ishāl (anti-diarrheal), Muqawwī-i-Bāh (aphrodisiac), Mushtahi (appetizer), Muqawwī-i-Dimāgh (brain tonic), Muqawwī-i-Qalb (cardiac tonic), Mulayyin (laxative), Musakkin-i-Harārat (febrifuge), Mudirr-i-Hayd (emmenagogue), Mu'ayyin-i-Hamal (conception promoter), Qābid (astringent), Hādīm (digestive), Muqawwī-i-'Ām (General tonic), Musaffi-i-Khūn (blood purifier), Muqawwī-i-Sha'ar (hair tonic), Muqawwī-i-A'sāb (nervine tonic), Mughalliz-i-Mani, Muhallil-i-Awarām (anti-inflammatory), Muqawwī-i-Basar (eye tonic), Dāfi' Su'āl (antitussive), Dāfi' Bawāseer (anti-haemorrhoidal), Jali (detergent), Mudirr-i-Bawl (diuretic) Dāfi' Dhayabitus (hypoglycaemic), Dāfi' Tashannuj (anti-convulsant),

Mani' Qai (anti-emetic), Musakkin-i-Atash (thirst quencher), Mubarrid (coolant), Mumbit-i-Sha'r (hair grower). <sup>3,9,10, 11-14,16-19</sup> It is mostly used in Du'f Dimāgh (cerebral weakness), Du'f Qalb (cardiac weakness), Du'f A'sāb (nerve weakness), Dhayabitus (diabetes), Ihtibās-i-bawl (retention of urine), Ihtibās-i-Hayd (amenorrhoea), Istisqa (ascites), Du'f Mi'da (gastric upset), Nafakh-i-Shikam (flatulence), Iztirāb (anxiety neurosis), Tanāo (stress), Qūlanj (intestinal colic), Bawāsir (piles), Waram-i-Rahim (metritis), Intishār-i-Sha'r (hair loss), Waja' al-Qutn (backache), Sar' (epilepsy), Taqtir al-bawl (dribbling of Urine) <sup>3,10,20</sup> It is also used in Nazla (common cold), Su'āl (cough), Diq al-Nafas (asthma) and Dard-i-Chashm (eye pain) <sup>21</sup>, it is also used in skin eruption and Fasād-i-Khūn (pytriasis, vitiligo, boils etc.) and used to treat Suzāk (gonorrhoea) and Ātashak (Syphilis) <sup>3,16</sup> It is used to cure insomnia, irritability as well as epilepsy <sup>10-12</sup> as it has a relaxing effect on the brain <sup>3,9-12,22</sup>

The bark of its root is used to increase libido and to make semen viscid. 7 gm of the powder bark along with 1.75 gm of Tukhm Sambhalu (*Vitex negundo* seeds) is taken to treat flatulence, Diabetes, frequency of micturition, burning micturition, and other renal and vesicular diseases. For the treatment of internal and external haemorrhoids fresh parts of the plant 35 gm is rubbed with 5 *Piper nigrum* in water and then the filtrate is taken in the morning for 4-5 days.<sup>3</sup>

8 gm *Piper nigrum* powder mixed with 8 gm of Sankhaholi juice with honey is used to treat vomiting. The decoction of the plant is used to cure fever occurs in children. <sup>3</sup>

**Badal (substitute):** Brahmi (*Centella asiatica*) can be used as substitute of Sankhaholi <sup>13</sup>

**Murakkabat (compound formulations):** Various compound formulation are being prepared in which Sankhaholi is one of the main ingredients.

**Table 1: Name of compound, dose and method of administration, action and uses**

| Name of the compound           | Dose and method of administration               | Action and uses   |
|--------------------------------|---|---|
| Habb-i-Sar' Khas               | One pill twice a day/ orally                    | It tones up brain and nerve hence used in epilepsy and infantile convulsion <sup>25</sup>       |
| Ma'jun Supāri Pāk              | 12-24 gm at morning with milk or water/ orally. | It is used for leucorrhoea <sup>23, 24</sup>  |
| Qurs-i-Bukhār                  | 2 tablets twice a day/orally                    | It is antipyretic and used to treat fever <sup>25</sup>   |
| Dimagheen (Tibbiya Dawakhana). | 10 gm twice a day/orally                        | It is a nerve tonic and used for enhancing memory.  |
| Safi (Hamdard Dawakhana)       | 20 ml twice a day/orally                        | It is blood purifier and used for infectious and skin diseases like boils, itching, rashes etc. |

**Chemical Constituents**

The ability of herbal medicine to affect body systems depends on the chemical constituents that it contains. The plant *Sankhaholi* contains pentatriacontane, triacontane and betasitosterol<sup>2</sup>. Fresh plant of Sankhaholi contains volatile oil. It also contains a yellow neutral fat, an organic acid and saline substances. An unidentified compound has also been isolated. Scopoletin, scopolin, umbelliferone, 2-methyl-1,2,3,4-butanetetrol, ferulic acid esters with alcohols and palmitic, stearic, oleic, 8-methyldecanoic, and heptadecanoic acids have been reported <sup>26,27</sup> 2,3,4-trihydroxy-3-methylbutyl 3-2-propenoate and 1,3-di-O-caffeoyl quinic acid methyl ester, caffeic acid, 6-methoxy-7-O-glucopyranoside coumarin, 2-C-methyl erythritol, kaempferol-7-O-glucopyranoside, kaempferol glucopyranoside, and quecetine-3-O-glucopyranoside were reported from n-BuOH soluble fraction from the ethanol extract of *Evolvulus alsinoides* <sup>28,30</sup>

**Pharmacological / Clinical / Pre-Clinical Studies on Sankhaholi**

**Antihypertensive Activity**

Profound antihypertensive activity of *Evolvulus alsinoides* herb was exhibited by Methanolic extract in adrenaline induced hypertensive model. <sup>31</sup> In another study the antihypertensive effect of methanolic extract of whole herb was apparent in DOCA (Deoxy corticosterone acetate) salt induced hypertensive mice and the study also revealed that its activity was due to ACE inhibitor mechanism as the extract of *Evolvulus alsinoides* lowered the blood pressure similar to enalapril without interfering with pulse rate <sup>32</sup>

**Antioxidant Activity**

Ethanol extract of the entire herb was evaluated by in vitro methods for free radical scavenging activity and findings specified promising antioxidant activity of the crude extract of *Evolvulus alsinoides* <sup>34</sup>

In another study a number of successive extractions (viz. petroleum ether, chloroform, ethyl acetate, ethanol, hydro alcoholic) of *Evolvulus alsinoides* were studied and study established the antioxidant potentials of the herb.<sup>35</sup>

#### Anti-Stress Activity

The study reports the isolation and structure revelation of the new flavonol glycosides- evolvoside C, evolvoside D and evolvoside E and their anti-stress activity. The compounds have revealed significant anti-stress activity by normalizing hyperglycemia, corticosterone level, creatine kinase and adrenal hypertrophy<sup>29</sup>

#### Hypolipidaemic Activity

Oral administration of *Evolvulus alsinoides* extract to streptozotocin induced diabetic rats for 45 days significantly reduced the levels of triglycerides, phospholipids, cholesterol and free fatty acids in serum and tissues. It increases the high density lipo-protein in serum as that of control.<sup>33</sup>

#### CONCLUSION

In view of the above findings, it can be concluded that Sankhaholi (*Evolvulus alsinoides* blue flower and *Convolvulus pluricaulis* white flower) possesses a wide range of activities for the treatment of various ailments like, stress, diabetes, hypertension etc. This herb is used in Unani and Ayurveda since long time, but a few studies are found. Hence this review may be helpful to the researchers to conduct further pharmacological studies and new drug development.

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**Cite this article as:**

Asrar Ahmad et al. Sankhaholi (*Evolvulus alsinoides* Linn): A valuable herb of Unani medicine. *J Biol Sci Opin* 2022;10(4):45-48.  
<http://dx.doi.org/10.7897/2321-6328.104159>

Source of support: Nil; Conflict of interest: None Declared

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