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Review Article

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A Review on Traditional Indian Herbs *Convolvulus pluricaulis* Linn and its Medicinal Importance

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ABSTRACT

Shanka pusphi is a natural product. Shanka pushpi is indicated as Medhya (brain tonic), digestive, appetite stimulant and carminative for digestive system. It has cardio-protective, heart strengthener and controls hypertension. Though various indications are in use, controlled trials are needed to determine its real efficacy. The shanka pushpi plant, its properties, mechanism of action and clinical uses are briefly reviewed in this article.

Keywords*: Shanka pushpi, medhya, appetite stimulant.*

INTRODUCTION

Shanka pushpi is a perennial herb that seems like morning glory. Its branches are spread on the ground and can be morethan 30 cm long. The flowers are blue in color (5mm) and the leaves, which are elliptic in shape (2mm), are located at alternate positions with branches or flowers[1]. Known as Aloe weed in English, the herb is commonly found in India[2], especially in the state of Bihar. All the parts of the herb are known to possess therapeutic benefits. It is believed to be the
only herb that is capable of enhancing all the aspects related to brain power, such as learning, memory and the ability to recall[3]. However, its popularity stems from its ability to treat inosmia effectively[4].

Fig. 1

Scientific classification:

Kingdom: Plantae
Division: Magnoliophyta
Class: Magnoliopsida
Order: Solanales
Family: Gentianaceae
Genus: *Convolvulus*
Species: *pluricaulis*

Common Name: Shankhpushpi

Vernacular names: The Vernacular names of *C. pluricaulis* is described as follows:

Sanskrit: Sankhapuspa
Bengal: Sankhapuspi
Gujarathi: Shankhavali
Hindi: Shankhapushpi, Aparajit
Kannada: Bilikanthisoppu

Marathi: Shankhavela
Punjabi: Shankhapuspi
Tamil: Sanghupushpam, kakkurattai
Telugu: Shankhapushpi

Habit and Habitat: Plant of Shankhpushpi is found everywhere in India in sandy and stony areas and prefers dry climate[5]. The plant can be found in variety of places including sandy and rocky surfaces particularly in North India. This plant belongs to Convulvulaceae family and usually flowers during September and October. The flowers can range between white to light pink in colour.

Part Used: The whole plant is used in Ayurvedic.

Chemical Constituents

Research into the chemical constituents in Shankhpushpi had found presence carbohydrate-D-glucose, maltose, rhamnose, sucrose and starch, and certain other bio-chemicals which include glacial acetic acid, scopoletin, three coumarins, β-sitosterol, tropane alkaloids, kaempferol, convoline, convolidine, convolvine, confoline, convosine, palmitic acid (66.8%), linoleic acid (2.3%), and straight chain hydrocarbon hextriacontane, 20-oxodotriacontanol, tetratriacontanoic acid and 29-oxodotriacontanol[6].

Health Benefits

- **Reduces gastric ulcers:** Gastric ulcers are generally caused when the stomach produces more acid than required and in cases where the eating habits are irregular. In such cases, excess acid can rupture the stomach lining from the inside causing lesions or ulcers. Studies have shown that Shankhpushpi is a very good herb that can reduce gastric ulcers by healing the lesions faster and also by strengthening the mucus membranes and mucosal cells.
- **Reduces stress:** Classically, Shankhpushpi was one of the few drugs that were used to reduce stress levels and put the brain in a relaxed state. Studies on animals with induced stress showed that Shankhpushpi possesses stress and depression reducing properties. Further investigations into the process of stress reduction have to be done.
- **Controls neurotoxicity levels:** Shankhpushpi is not only a stress reliever and an anti-depressant, but it can also reduce the effect of toxins in the brain. Studies on lab animals administered with aluminium chloride showed an increased level of neurotoxicity. But administering Shankhpushpi extracts reduced neutrotoxicty to a significant extent. Further investigation into the neurotoxicity reducing effects has to be taken up.
- **Improves memory:** Simple memory tests such as pole-climbing apparatus, passive avoidance paradigm and active avoidance paradigm tests were conducted on lab animals which showed an improvement in memory after administering with shankhpushpi extracts.
- **Analgesic properties:** Pain killing or analgesic is one of the important properties of shankhpushpi plant. These pain killer properties are very much useful in dealing with rheumatic pains, arthritis, osteoarthritis, etc. The pain killer effects produced by Shankhpushpi were very similar to a morphine induced ones.
- **Can cure hyperthyroid:** Thyroid gland is an important gland which regulates the rate of metabolism in our body by producing thyroid hormones. Excess of thyroid hormones can lead to hyperthyroidism disease. Hyperthyroidism can be reduced by taking shankhpushpi extracts on a regular basis.

Main classical uses

Shankhpushpi is used in many formulations in Ayurveda. Main formulations containing Shankhpushpi are: Shankhpushpi panaka, Medhya kashay.

Uses and Benefits

- Primarily, shankhapushpi is used as a brain tonic. It is one of the best and prominent natural medicines that help in improving memory. The whole plant of shankhapushpi is used in medical treatment. Its consumption also prevents memory loss.
- The herb is also used as one of the most important ingredients in the treatment of disorders/syndromes, such as hypertension, hypotension, anxiety neurosis, stresses etc.

- It is also beneficial in rejuvenation therapy and works as psycho-stimulant and tranquilizer.
- The extract from shankhapushpi helps in reducing the level of cholesterol in blood, including triglycerides, phospholipids and fatty acids.
- The herb is helpful in fighting ulcers that are formed in the body due to glycoprotiens and mucous secretions, improving the nerve tissues and bone marrow quality.
- The studies on shankhapushpi have also put forward that it is beneficial in remedying hypothyroidism.
- It is also one of the best herbs that are used for enhancing beauty and helps in nourishing all the layers of skin.
- The herb serves to induce a feeling of calm and peace, promotes good sleep and brings relief in anxiety and mental fatigue. It brings a significant reduction in anxiety levels and neuroticism occurring due to varied stress levels.
- Shankhapushpi has an invigorating effect on overall health and promotes health and weight gain.
- It also helps in removing certain types of fatty acids that are harmful for the body.
- Not much research has been published in the western medical literature on shankhapushpi.
- There is one study on the herb, which throws light on its anti-ulcer properties and its helpfulness in alleviating the symptoms of hyperthyroidism, by reducing the activeness of a liver enzyme

Macroscopic characters

Preliminary macroscopical characters of ethanolic extracts of *C. pluricaulis* (leaves) are given in Table 1

C. pluricaulis		**Characters**
Stem structures	Length	Several prostrate stems (10-30 cm)
	Surface	Clothed with silky hairs
	Internodes	10-12 mm
	Taste	Tasteless
	Dimension	Length=1.12 cm; breadth=0.1 cm
	Attachment	Leaf stalk absent
Leaf structures	Lamina	Thin
	Stipules	Exstipulated
	Leaf lamina shape	Linear
	Leaf margin	Entire
	Leaf apex	Acute
	Leaf base	Decurrent
	Leaf texture	Whole (brittle)
	Venation	Parallel
	Phyllotaxy	Alternate
	Leaf surface	Hairy

Microscopic characters

Preliminary microscopical characters of ethanolic extracts of *C. pluricaulis* (leaves) are given in Table 2

C. pluricaulis		**Characters**
Stem structures	Outline in transverse section	Terete, wings absent
		Straited
	Cuticle	Present, conical, unicellular
	Trichomes covering	Present, stalk unicellular, head multicellular
	Glandular	
Leaf structures	Chlorenchyma	Present
	Collenchyma	Present
Stomata number	Endodermis	Indistinct
	Pericyclic fibers	Present
	Phloem fibers	Present
Stomatal index	Pith	Cells pitted in older stem
	Outline in transverse section	Concave-convex

Extractive value	Collenchyma	Present beneath upper
	Calcium oxalate	epidermis
	Lamina	Plenty, along veins
	Cuticle	Isobilateral
	Trichomes	Straited
	Stomata	Present
	Upper surface	Both anisocytic and paracytic
	Lower surface	types on either side
	Upper surface	202-216-238
	Lower surface	188-223-251
	Vein-islet number	16.9-18.0-17.2
	Water soluble	14.8-16.3-17.2
	Alcohol soluble	7.5-8.0-9.0
		18.21
		16.14

CONCLUSION

Thus, though shanka pushpi has wide spectrum of the properties and uses, some of them could myths and some of them could be real magic. In future, controlled studies are required to prove more effectiveness of shanka pushpi under various conditions.

The present review discusses the plant profile, pharmacognosy, pharmacology, phytochemistry of the herb, *C. pluricauli*. Glycosides, flavonoids, alkaloids, carbohydrates, steroids, proteins, gums and mucilage compounds are commonly present in this species. Pharmacological studies carried out on crude extracts and pure metabolites provided pragmatic documents for its traditional uses, and have revealed this herb to be a valuable source for medicinally important molecules.

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