

A Critical Review on Guduchi (*Tinospora cordifolia*) With Special Reference to Visha Chikitsa

Dr. Anjum M. Shaikh

Department of Agadatantara Evum Vyadhi Ayurveda

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ABSTRACT : Various properties of *Guduchi* (*T. cordifolia*), described in ancient texts of Ayurveda, like *Rasayana*, *Sangrahi*, *Balya*, *Agnideepana*, *Tridoshshamaka*, *Dahnashaka*, *Mehnashaka*, *Kasaswasahara*, *Pandunashaka*, *Kamla-Kushta-Vataraktanashaka*, *Jwarhara*, *Krimihara*, *Prameha*, *Arshnashaka*, *KricchHridroganashak*, etc.¹

Potential medicinal properties reported by scientific research include anti-diabetic, antipyretic, antispasmodic, anti-inflammatory, anti-arthritic, antioxidant, anti-allergic, anti-stress, anti-leprotic, antimalarial, hepato-protective, immuno-modulatory and anti-neoplastic activities.²

So this review paper is an attempt of the author to explore the medicinal value of *Guduchi* and highlight the *Vishaghna* property based on its pharmacological activity.

KEYWORDS – *Guduchi*, *Agada*, *Visha*, *Vishaghna*.

I. INTRODUCTION

T. Cordifolia is widely used plant in folk and Ayurveda systems of medicine. It is distributed throughout the India and china, ascending to an altitude of 300 m. The term *Amrita* is attributed to its ability to impart youthfulness, vitality and longevity.

Almost all classical texts of Ayurveda i.e., *Samhita*, *Nighantu*, *Chikitsagranth* and *Rasa Grantha* have reported the properties and uses of *Guduchi*. Among these, *Nighantu* texts provides information about its properties, characters and their pharmacological actions and indications. The present review aims to document on medicinal properties, especially *Vishaghna* Properties of *T. Cordifolia*.

***Guduchi* (*T. Cordifolia*) described in various Ayurveda *Nighantu*.**

<i>Nighantu</i>	<i>Varga</i>	Uses
<i>Dhanwantar i Nighantu</i> ³	<i>Guduchy adi Varga</i>	<i>It mitigates Visha (poison), Kushtha, Visarpa, Kandu, etc</i>
<i>Madanpala Nighantu</i> ⁴	<i>Abhyadi Varga</i>	<i>Kamala (Jaundice), Kushtha, Krimi, etc</i>

<i>Kaiyyadev Nighantu</i> ⁵	<i>Aushadhi Varga</i>	<i>Kushtha, Krimi, Pandu, Kamala, Hridya, etc.</i>
<i>Bhavaprakasha Nighantu</i> ⁶	<i>Guduchy adi Varga</i>	<i>Tridoshanashaka, Kushtha, Krimi, Pacifies Dosha and ama.</i>
<i>Raj Nighantu</i> ⁷	<i>Guduchy adi Varga</i>	<i>Raktavata(inflammatory diseases), Jwara, Daha, Pandu, etc</i>

II. MATERIALS AND METHODS:

This review has done with an intension to provide an overview on Pharmacological activities and *Vishaghna* (Anti-poisonous) property of *Guduchi*. The Data were collected from Ayurveda authentic texts, scientific journals and through the research papers.

Taxonomical classification of *T. Cordifolia* (*Guduchi*)⁸

Kingdom	Plantae
Subkingdom	Tracheophyta
Super division	Spermatophyta
Division	Magnoliophyta
Class	Mangnoliopsida
Subclass	Polypetalae
Series	Thalamiflorae
Order	Ranales

Family	Menispermaceae
Tribe	Tinosporeae
Genus	Tinospora
Species	Cordifolia

Vernacular Names⁹

<i>Sanskrita</i>	<i>Amrita, Amritavalli, Vatsadini, Kundalini, Chinnodbhava, Vatsadini, Chakralakshanika, Madhuparni, Tantrika, etc.</i>
<i>English</i>	<i>Tinospora</i>
<i>Marathi</i>	<i>Gulvel</i>
<i>Hindi</i>	<i>Gurcha</i>
<i>Kannada</i>	<i>Amrutvelli</i>
<i>Gujarati</i>	<i>Garo, Galac</i>
<i>Telugu</i>	<i>Thippateega</i>
<i>Tamil</i>	<i>Seendal, seendal kodi</i>
<i>Assamese</i>	<i>Siddhilata, Amarlata</i>
<i>Kashmiri</i>	<i>Amrita, Gilo</i>
<i>Panjabi</i>	<i>Gilo</i>
<i>Oriya</i>	<i>Guluchi</i>

III. MORPHOLOGY¹⁰

Cordifolia is a large deciduous, extensively spreading climbing shrub with several coiled branches with a different type of Morphology. The stem is of climbing in nature, filiform and fleshy. It is native to tropical region of India Ascending to an altitude of 500 meters in the range of 25 to 40 °C. The leaves are simple heart shaped and dark bright in color. Multicoated reticulate venation is found in lamina. Bark is Succulent, with deep clefts spotted and large rosette-like lenticels. The color of bark is white creamy or grey. Flowers are unisexual, small and greenish yellow on axillary and terminal racemes. Flowers grow during summer (March to June) while fruits develop during the winter (November) fruits are orange- red in color, fleshy and smooth.

CHEMICAL CONSTITUENTS¹¹

T. Cordifolia mainly consists of alkaloids, glycosides, steroids, and mixture of fatty acids, phosphorus, proteins, polysaccharides, aliphatic compounds, lignans, terpenoids and essential oils. The stem of *Cordifolia* contains clerodane furano diterpene glucoside (amritoside A, B, C, and D) and the structure has been established by different spectroscopic studies leaves of this plant are rich in protein.

Pharmacological properties of *Guduchi* according to Ayurveda^[12]

<i>Rasa</i>	<i>Tikta</i> (bitter), Kashaya
<i>Guna</i>	<i>Laghu</i> (lightness), Snigdha
<i>Virya</i>	<i>Ushna</i> (hot)
<i>Vipaka</i>	<i>Madhura</i>
<i>Prabhava</i>	<i>Vishaghna</i> (Anti-toxic)

Pharmacological activities and medicinal properties proven by modern research findings :

Anti-inflammatory activity¹³

The alcoholic extract of *T. cordifolia* has been found to exert anti-inflammatory action in models of acute and sub-acute inflammation. *T. cordifolia* that grow on *Azadirachta Indica* (*neem*) significantly inhibited acute inflammatory response evoked by carrageenan in a dose of 50mg/100g given orally and intraperitoneally.

The dried stem of *T. cordifolia* produced significant anti-inflammatory effect in both acute and sub-acute models of inflammation. *T. cordifolia* was found to be more effective than acetylsalicylic acid in acute inflammation, although in sub-acute inflammation, the drug was inferior to phenylbutazone.

Antipyretic activity¹⁴

Traditionally *T. cordifolia* is known for its antipyretic activity. The water- soluble fraction of 95% ethanolic extract of *T. cordifolia* has significant antipyretic activity. In other experimental study, antipyretic effects have been reported in the hexane and chloroform soluble portions of *T. cordifolia* stem

Antioxidant Activity¹⁵

T. Cordifolia is mentioned as *Vishaghni*, *Vishahara* and *Tridoshshamaka* in various texts of Ayurveda. In various studies *T. Cordifolia* was found effective in iron-mediated lipid damage and gamma-ray-induced protein damage.

Antiallergic Activity¹⁶

Cordifolia is traditionally used for the treatment of asthma and the juice is used for the treatment of chronic coughs. In a clinical study, 100% relief was reported from sneezing in 83% of patients on treatment with *T. cordifolia*.

Hepatoprotective activity¹⁷

Plant Part	Ethnobotanical use
Leaves	Used in the treatment of gout and ulcer
Stem	Stimulates bile secretions, diuretic, enriches the blood, cures jaundice, in skin diseases
Stem+root	Combination with other drugs as an antidote to snake bite and scorpion sting
fruit	Dried fruit with ghee or honey used as tonic and treatment of Jaundice and rheumatism.
Bark	Anti-allergic, anti-spasmodic, anti-leprotic

Various Ayurveda preparations of *T. cordifolia* are reported in *Kamla* (Jaundice). A clinical study has shown that *Guduchi* plays an important role in normalization of abnormal liver functions (ALT, AST). The antihepatotoxic activity *T. cordifolia* normalizing liver function by assaying SGPT, SGOT, Serum Alkaline Phosphatase and serum bilirubin

Diuretic activity¹⁸-

T. Cordifolia has been reported as useful in urinary trouble separately and in the form of various formulations in Ayurveda. In a specific study of rats and human volunteers *Guduchi* was found to have diuretic effect.

Anti-toxic activity -

Lead Toxicity¹⁹-

The present findings clearly suggested that *T. cordifolia* stem and leaves crude extracts are capable of scavenging lead-induced hematological alternations to some extent. When the *T. Cordifolia* extract along with lead was administered, they decreased the toxic effect of lead in blood as compared to lead-treated animals, thus indicating the protective role of plant extract in lead toxicity.

Arsenic toxicity²⁰ -

In histopathological study, the arsenic treated rats showed degenerative changes in the liver and kidney tissues such as lesions and vacuolization's in hepatocytes and nephrocytes respectively. However after administration with *T. cordifolia* rats, there was considerably significant restoration in liver and kidney tissues. Hence *T. cordifolia* played the vital role to combat the arsenic induced toxicity in rats.

ANTIDOTE TO SCORPION STING

The root and stem of *T. cordifolia* are prescribed in combination with other drugs as an antidote to scorpion sting²¹.

T. cordifolia prescribed in combination with other drugs as an antidote to snakebite and scorpion bite²². The paste of *Guduchi* is applied to the part bitten and administered internally through mouth at intervals of half hour²³

Garavisha Chikitsa -

T. Cordifolia can be used with other drugs in the treatment of *Garavisha* along with *Anupana* like *Takra* or lukewarm water²⁴.

Exploration of *Guduchi* and its formulations in *Visha Chikitsa*

Agada (Anti poisonous formulations) containing *Guduchi*²⁶

S. No	Formulations	References
1	<i>Astika Agada</i>	<i>Chikitsa Kalika</i>
2	<i>Aushanasa Agad</i>	<i>Ashtang Sangraha</i>
3	<i>Kanchayanasa Rasa</i>	<i>Rasayogasagara</i>
4	<i>Karanja Aragwadha Yoga</i>	<i>Sushruta Samhita</i>
5	<i>Kirattiktadi Kwatha</i>	<i>Ashtang Sangraha</i>
6	<i>Koshatkyadi Kwatha</i>	<i>Sushruta Samhita</i>
7	<i>Koshatkyadi Yavagu</i>	<i>Ashtang Hridaya</i>
8	<i>Murvadi Yoga</i>	<i>Ashtang Hridaya</i>
9	<i>Mustadi Churna</i>	<i>Ashtang Sangraha</i>
10	<i>Nishadi Ghrita</i>	<i>Ashtang Sangraha</i>
11	<i>Pathadi Kwatha</i>	<i>Kashyapa Samhita</i>
12	<i>Shleshmatakadyadi Agada</i>	<i>Yogaratnakara</i>
13	<i>Shobhanjan Muladi Churna</i>	<i>Ashtang Sangraha</i>
14	<i>Shwetadi Agada</i>	<i>Ashtang Sangraha</i>
15	<i>Vishaghni Peya</i>	<i>Ashtang Sangraha</i>

IV. DISCUSSION

T. Cordifolia an important medicinal shrub having various biologically active compounds including alkaloids, steroids, glycosides, etc. These compounds have been reported to have a therapeutic potential. Various scientific studies that have been conducted on T. Cordifolia states that it is effective against diseases by its Anti-inflammatory, Anti-oxidant, Anti-allergic, Diuretic, Anti-pyretic, Hepatoprotective and Anti-toxic action.

Guduchi is renowned for its Vishaghna Karma by Prabhava and hence it is included in many Agada (anti-toxic formulations) used in poisoned person.

Further evaluation needs to be carried out on T. Cordifolia in order to explore their clinical and practical application, as far as management of poisoning.

V. CONCLUSION

Guduchi having a potential deserves special attention for its *Vishaghna* (anti-poisonous) property as it is mentioned in various *Agada* (anti-poisonous formulations) in classical texts. Its Hepatoprotective, anti-toxic property against lead poisoning, arsenic poisoning have been proved in scientific journals. Hence we can conclude that *Guduchi* is an herb which can be used as anti-toxic drug. Hence, this review can be used for further research as well as clinical purpose.

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