



# REVIEW ON HERBAL GOILOY SYRUP

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## ABSTRACT

Giloy (*Tinospora cordifolia*) is Herbal drug of traditional system of medicine. The common names are Amrita and Guduchi and belong to the family of Menispermaceae. It is considered an essential herbal plant of Indian system of medicine (ISM) and has been used in the treatment of fever, urinary problem, dysentery, skin diseases leprosy, diabetes, and many more diseases. In this article, we have reviewed the literature on the Hepatoprotective effect, safety profile and terms and conditions for medicinal use of *Tinospora cordifolia* and critically analyzed to provide perspectives and instructions for future research.

**Key words** – Guduchi, Hepatoprotective, safety.

## INTRODUCTION

Earlier in the twentieth century, herbal medicine was the prime medication system as antibiotics or analgesics were not available. Increasing use of an allopathic system of medicine due to its fast therapeutic action and herbal medicine gradually lost their popularity among the people. Giloy (*Tinospora cordifolia*) is one of the plant that Acharya Charaka and Acharya Vaghbata mentioned in *Aagryasangraha*, *Agrya Sangraha* means collection of leading or principle substances. *T. cordifolia* is a miraculous plant that belongs to the family Menispermaceae. It is also known by diverse names Guduuchi, Guduuchikaa, Guluuchi, Amrita, Amritalataa, Amritavalli, Chinnaruuhaa, Chinnodbhavaa, Madhuparni, Vatsaadani, Tantrikaa, Kundalini, Guduchi sattva in Ayurveda, and Giloya in folk. Furthermore, this plant is also known as the herbal ingredient of “soma” or “heavenly elixir” (food for immortals, mentioned in Rigveda) altogether more than 100 herbal ingredients. *T. cordifolia* is also known as “nectar of life”, as it strengthens the immune system of the body and maintains the functions of various organs in harmony. *T. cordifolia* is a large, glabrous, deciduous, climbing shrub found in the tropical region of India, Andamans, China. The structure of the stem is fibrous and the transverse

section exhibits a yellowish wood with radially arranged wedge-shaped wood bundles, containing large vessels, separated by narrow medullary rays. It has creamy-white to grey bark, deeply left spirally and the stem contains rosette-like lenticels. The leaves are membranous and cordate in shape. Flowers are in axillary position, 2–9 cm long raceme on leaflet branches, unisexual, small, and yellow. Male flowers are clustered and female is usually solitary. The seeds are curved. Fruits are fleshy and single-seeded. Flowers grow during the summer and fruits during the winter.

Now a days due to multiple benefits of Giloy (*Tinospora cordifolia*) specially immunomodulatory effects peoples are using this herbs widely, due to lack of information about this plant people consuming without medical supervision and hence they get harms instead of benefits. In this article review of hepatoprotective action, safety profile, and terms and conditions for medicinal use was performed and presented systematically.

### Hepatoprotective Effect:

Liver disease is becoming a major public health problem. Epidemiological data report that incidence has been increasing rapidly worldwide over the past two decades. Data from Global 2017 The Burden of Disease study shows an average of 2.14 million liver-related deaths worldwide. In an interesting human study conducted in the Department of Gastroenterological Surgery, Seth G.S doctor College, Mumbai, India, the effect of percutaneous transhepatic biliary drainage (PTBD) was studied. The PTBD is were performed as part of a jaundice surgery to unload the bile ducts and improve liver function. However, there is a risk Due to immunosuppression, the incidence of sepsis in these patients is high and surgical outcomes remain poor. And there for Effective alternative treatment can significantly change the outcome of this condition. Established Researchers four groups of patients. The first two groups are (A) people undergoing surgery without PTBD (n=14) and (B) underwent surgery for PTBD (n = 13). Mortality was 57.14% in Group A versus 61.54% in Group A Group Surveys of bilirubin performed during drainage (3 weeks) showed a gradual increase and a significant drop. The half-life of antipyrine did not change significantly. Phagocytic and intracellular destruction Neutrophil (ICK) abilities remained suppressed. Therefore, PTBD did not improve the liver's metabolic capacity, and mortality was higher due to sepsis. Patients in group (C) received gauche during PTBD (n=16) and group (D) patients (n=14) received Guduchi without PTBD. After 3 weeks there was a marked improvement in neutrophil function weeks in both groups. Mortality in groups C and D in the preoperative period was 25% and 14.2%, respectively Period. There was no postoperative mortality. The results of this study show that immune functions such as Reflexes in neutrophil function play an important role in influencing prognosis and this improvement Guduchi's immune function offers significant potential for increased survival.

In a similar study conducted at the Department of Pharmacology, Seth GS Medical College, Mumbai, the effect of *T. cordifolia* was noted evaluated the outcome of surgical treatment in patients with malignant obstructive jaundice. Thirty patients were randomly divided into two parts groups matched for clinical features, hepatic impairment (assessed by liver function tests included). elimination of antipyrine

) and immunosuppression. Group I received conventional management, e.g., Vitamin K, antibiotics and biliary drainage; Group II additionally received *T. cordifolia* (16 mg/kg/day orally) during biliary drainage. liver The function of remained comparable in both groups after dehydration. However, the phagocytic and destructive abilities of neutrophils are limited normalized only in patients treated with *Tinospora*. Post-drainage bacteria were found in 8 patients in Group I and 7 in Group I

II, but clinical signs of sepsis were observed in 50% of patients in group I and none in group II ( $p < 0.05$ ). Postoperative The survival rate of in groups I and II was 40% and 92.4%, respectively ( $p < 0.01$ ). The researchers found that Guduchi appears to be doing better

### Terms and condition for medicinal use-

In Ayurvedic therapeutics, drug therapy is given prime importance. There is a very well-developed sub-discipline entirely devoted to drug formulations known as “Bhaisajya Kalpanaa”. five basic forms of formulation known as 1-‘Swarasa’ the expressed juice, 2-‘Kalka’, a fine paste obtained by grinding fresh or wet grinding dried plant material 3- ‘Kwaatha’, the decoction, 4- ‘Sheeta’ or ‘Hima’, the cold-water infusion and 5- ‘Faanta’, the hot water infusion. Proper time for administration of Aushadha is known as Bhaishajya Kaala. Bhaishajya Kaala are the essential tools for administration of Aushadha, negligence may lead to the grave deficit in the treatment. All therapeutic measures administered to treat a disease even though

wholesome and skillfully given, fail to cure it, if they are used in lesser or in excessive dose or at wrong time or in wrong manner. If appropriate therapy is administered in appropriate manner it certainly cures the disease.

In context to Giloy (*Tinospora cordifolia*) and all Ayurvedic herbs the following things should remember before

using the herbs for medicinal purpose.

- 1) Drug identification
- 2) Drug dose
- 3) Drug administration time
- 4) Total duration of drug administration
- 5) Forms of drug at the time of administration
- 6) Site of collections
- 7) Time of drug collection
- 8) Anupan
- 9) Contraindication
- 10) Used only under medical supervision.

#### **Chemical constituents: Various chemical constituents have been found in different parts of the Giloy**

plant. They belong to different classes such as alkaloids, diterpenoid, lactones, steroids, glycosides, aliphatic compounds, polysaccharides. These are as follows

**Stem:** Berberine, Palmatine, 18-norclerodane glucoside, Furanoid diterpene glucoside, Cordifolisides A to E

**Bark:** Berberine, Palmatine, 18-norclerodane glucoside, Furanoid diterpene glucoside, Cordifolisides A to E, Palmatosides C and F, Cordioside

**Whole Plants:** Furanolactone, Clerodanederivatives and Tinosporon, Tinosporides, Jateorine, Columbin, Octacosanol, Cordifol.

**Root:** Jatrorrhizine, Tetrahydropalmatine, Isocolumbin, Palmatine, Magnoflorine, Tembetarine.

Scientific Reports:-

**Hypoglycaemic activity:** The stem extract (both aqueous and alcoholic) of Giloy in dosages form (200 and 400mg/kg. body weight) in streptozocin diabetic albino rats has antihyperglycaemic action. It also increases the activity of the glycogen synthase in liver and also increase the storage of glucose in hepatocytes. The root extract of Giloy is pancreatoprotective properties and hypoglycaemic action in nature.

**Hepatoprotective:** The leaf extract of Giloy shows a hepatoprotective effect against CCl<sub>4</sub> induced hepatotoxicity in rats. The potential to minimise the effects of free radicals including the proxy radicals and its antioxidant activity in association with the inhibition of lipid peroxidation, thereby Giloy plant material can be considered as hepatoprotective agent by the combined synergistic effect of its constituents and micronutrients rather than any single factor through free radicals activity  
**Antispasmodic:** Dry barks of Giloy have antispasmodic activity.  
**Anti-ulcer activity:** An ethanolic extract of the roots of Giloy in combination with *Centella asiatica* afforded significant protective action against restraint stress induced ulcer formation.  
**Anti-microbial activity:** The crude extract of the Giloy stem showed activity against bacteria and

fungi.

Antipyretic: Studies have shown insignificant antipyretic effects in the hexane and chloroform soluble fractions of the stem of Giloy. Anti- hyperlipidemic activity: The administration of the root extract of Giloy for six weeks in alloxan diabetic rats resulting in, significant reduction in tissue cholesterol, phospholipids and free fatty acids. The root extract of Giloy significantly decreases the level of cholesterol, TG, LDL, blood and increase the level of the HDL cholesterol.

## **BOTANICAL DESCRIPTION :-**

The plant family Menispermaceae consists of about 70 genus & 450 species that are found in tropical low land regions. *Tinospora cordifolia* is a perennial deciduous twiner with succulent stem. The bark is papery, creamy white to gray in appearance with large rosettelike lenticels. Leaves are simple, alternate or lobed, cordate, entire, 7-9 nerved; flowers are small cymose, yellow or greenish colour. Male and female flowers are formed on separate branches. Male flowers are clustered while female flowers are usually single [8]. Fruits are pea shaped, shiny, druping and become red when fully grown. Flowers grow during summer; and fruits, during winter. It is propagated by cuttings. The leaves afford a good fodder for cattle [9]. It has tubercles on the surface of grayish stem. Leaves are broad and heart shape.

Discussion- Medicinal plants are the reservoir of wide arrays of the majestic secondary metabolites, which can treat severe diseases. Medicinal plants are the blessings by nature to humankind on this earth. Secondary metabolites developed into more effective and less toxic medicines. India is sitting on the goldmine of traditionally well-practiced and well-reported knowledge of the medicinal system. India is bestowed with an enormous diversity of plants on this earth due to it is rightly called a “botanical garden of the world”

Giloy (*Tinospora cordifolia*) is the one of the Rasayan dravya explained in ancient literature and widely used in many formulations. In present study three clinical trial conducted by well known institute suggesting that Giloy poses hepatoprotective activity and more than three experimental study also suggests its hepatoprotective activity. Safety profile of Giloy when used in the form of Ghana Vati it is safe for 10 days at a dose of 500mg twice daily, another study conducted for safety evaluation of Giloy extract at a dose of 500mg once daily suggest that Giloy is safe for 21 days. The highest dose of aqueous extract of Giloy is 1.6 gm/kg also safe.

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