

## Asthisamhari (Cissus Quadrangularis Linn.), a Medicinal Plant In Ayurveda And Modern Perspective: A Comprehensive Review

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**ABSTRACT:** Herbs are natural source of medicines and also gained attention for many reasons such as fewer side effects, solutions for many chronic diseases and for preventive approaches. Cissus quadrangularis L. or Asthisamhari one of the most important plant, belong to the family Vitaceae. Asthisamhari (Cissus quadrangularis) is the drug which is being used for strengthening of bone by traditional Vaidya since long. It is a succulent plant found in warm tropical areas. Almost all parts of its like Root, Stem, Leaf are used in traditional system of medicines. It is also known as “Bone Setter” in English, or Hadjod in hindi because of its ability to join bones and Asthisamhari, Kandvalli, Vajrangi in Sanskrit. Asthisamhari possesses many activity like Thermogenic, Laxative, carminative, Haemostatic, Ophthalmic and Union promoting. The plant is well known in Ayurveda for its bone strengthening property, fracture healing properties and promoting bone growth. In Ayurveda, it is used as Vatahara, Pachana (digestive aid), Sara (relieves constipation), Asthiyuka (strengthening bones), Vrishya (Aphrodisiac) etc. This review article deals with the taxonomy, distribution, morphology, Ayurvedic and modern literature about Asthisamhari, Pharmacological activity and traditional uses of the plant.

**KEYWORDS:** Asthisamhari, Cissus quadrangularis, bone healing, pharmacological, phyto-chemical.

### I. INTRODUCTION:

Ayurveda has two basic aims- first, to preserve the health of healthy people and second, to treat illness and disease. In present era there has been enormous increase in the use of plant-based healthcare. One of plant that has shown beneficial effects on bone and one of the most important plant used in traditional system of medicine is Cissus quadrangularis L. It is a succulent plant of family Vitaceae commonly found throughout the hotter parts of India. It can be cultivated in plains coastal areas, jungles and wastelands up to 500m elevation. Plant is propagated using cuttings<sup>(28)</sup>. Asthisamhari stem resembles the shape of bones and joints in the body. And indeed, it is very effective in strengthening the bones and joints. Asthisamhari literally means that which saves the bones from their destruction. Precisely, it is also named as asthisandhani, which describes its peculiar quality of healing the bone fractures. This plant is mentioned in all ancient scriptures of Ayurveda.

**Scientific name:** Cissus quadrangularis L. **Family:** Vitaceae.

### TAXONOMICAL CLASSIFICATION :<sup>(1)</sup>

<b>Kingdom</b>	Plantae
<b>Sub kingdom</b>	Viridiplantae
<b>Super division</b>	Embryophyta
<b>Division</b>	Tracheophyta
<b>Class</b>	Magnoliopsida
<b>Subclass</b>	Rosidae

<b>Order</b>	Vitales
<b>Family</b>	Vitaceae
<b>Genus</b>	Cissus
<b>Species</b>	quadrangularis



Leaves, Stem, Inflorescence, Dry stem

**VERNACULAR NAMES:**<sup>(3,4)</sup>

<b>English</b>	Edible –stemmed vine, Devil’s backbone
<b>Hindi</b>	Hadjod,,Hadsamdhari, Hadjoraba
<b>Bengali</b>	Hadjod, Harbhanga.
<b>Assami</b>	Harjara
<b>Oriya</b>	Hadbhanga
<b>Urdu</b>	Hathjod

**CLASSICAL NAMES :**<sup>(3,4)</sup>

Asthisamhari , Asthisrinkhala, Vajravalli

**SYNONYMS AND THEIR NIRUKTI (ETYMOLOGY)**<sup>(2)</sup>

- 1)Asthisanjyokak:** (अस्थिसंयोजकः )- “ भग्नमस्थिसंयोजयतीति” (प्रि०)  
It promotes union of Fracture.
- 2)Asthisamhari :** (अस्थिसंहारी)- “अस्थिभानसंहारयतियोजयतीति” | -(भा०)  
It helps to reunion of the fracture bones.
- 3)Asthisrinkhala:** (अस्थिभङ्खला )- “लताअम्नांशृङ्खलेवप्रतिभाति | “-( भा०)  
It looks like chain structure
- 4)Chatushira :** (चतुःसिरः)- “चतस्रः सिराःकाण्डेऽस्या”- (श०)  
It having quadrangular stem.

5) **Granthiman** : ग्रन्थिमान (भा०)- “काण्डेग्रन्थियुक्तः।”-(भा०)

It has nodular stem.

6) **Vajravalli** : वज्रवल्लरी – “वडमस्थि, तस्यलवा।”-(कै)

Asthisamhari is a weak plant.

**SYNONYMS OF ASTHISAMHARI AS PER DIFFERENT NIGHANTU:**

SYNONYMS	S.N	R.N	P.N	B.P.N	K.N	M.D.N	N.A
Asthisamharaka	+	-	-	+	+	+	+
Hadsanhari	-	-	-	+	-	-	-
Asthisamhari	+	-	-	+	-	-	-
Vajrangi	+	-	-	+	+	-	-
Asthishrunkhala	+	-	+	+	+	+	+
Vajravalli	+	-	-	-	-	-	+
Kulish	+	-	-	-	-	-	+
Shiralak	+	-	-	-	-	-	-

(+ denotes presence, - denotes absence)

M.D.N- Madanpal Nighantu  
 KN-Kaiyadev Nighantu  
 R.N-Raj Nighantu  
 B.P.N- Bhava Prakash Nighantu,  
 S.N- Shaligram Nighantu,  
 P.N –Priya Nighantu ,  
 NA-Nighantu Adarsha.

**LITERATURE REVIEW OF ASTHISAMHARI AS PER DIFFERENT TIME PERIODS:**

**SAMHITA KALA-**

- **Sushruta Samhita (6-7<sup>th</sup> Century BC):** lakshadi guggul containing Asthisamharaka is described in Asthibhagna chikitsa as bone tonic or bone setter.

- **Chakradatta(11<sup>th</sup> century AD) :** Asthisamharaka sidhdha ghrita is described in Asthiroga chikitsa Sanghraha kala.

**NIGHANTU KALA-**

**1.BHAVPRAKASH NIGHANTU (16<sup>th</sup> CEN AD):** Mentioned Asthisamharaka in Guduchyadi varga and also mentioned in ‘Vataroga chikitsa’.

Compilations of Nighantus were a revolutionary progression after a long-time interval. Huge number of different varieties of many plants with their synonyms, guna, karma and therapeutical actions has been described in well-mannered order.

**2.SHODHAL NIGHANTU(12<sup>th</sup> CEN AD) :** In this nighantu Asthisamharaka has been described in treatment of Urustambha and various Vata-vyadhi.

**3. MADANPAL NIGHANTU (14<sup>th</sup> CEN AD):** In this nighantu , it is included in Abhayadi varga and mentioned various synonyms according to karma. Also mentioned Properties e.g. Arshgna, Krimighna, Asthibhagna etc

**4. KAIYADEV NIGHANTU (13-14<sup>th</sup> CEN AD) :** In this nighantu Asthisamharaka is described as balya and various names and synonyms are Described in It according to its morphological character and uses.

**5.NIGHANTU ADARSH (13<sup>th</sup> CEN AD):** In this nighantu acharya Bapalal vaidya has included Asthisamharaka Drakshadi gana and also given its uses according to various nighantus and samhitas.

**6.PRIYA NIGHANTU:** In this nighantu, Asthisamharaka has been described as bone healer , vata-nashaka properties.

**7.NIGHANTU RATNAKAR (1867 CEN AD):** In this nighantu Asthisamharaka has been included in Guduchyadi varga and various types of Asthisamharaka. E.g. – Tridhara, Dwidhara, Charadhara

**8.SHALIGRAM NIGHANTU (1896 CENAD):** In this nighantu Asthisamharaka in Guduchyadi varga and also uses. e.g. Krumighna ,arshohar, baldayak, agnidipak, viryajanak.

**9.VAIDYA MANORAMA:**Described Vajravalli Ghrita in putrajanan.

**MODERN ERA:**

In the modern era most of the botanists have scientifically explained the Pharmacological and Morphological description of the plant and its taxonomical classification. The drug Asthisamharaka has been described by them as follows-

**1. THE WEALTH OF INDIA-**

In this book the complete description regarding cultivation , morphology, varieties,

properties and use of the plant ,Asthisamharaka has been explained very well also the properties, chemical Constituents and use of Asthisamharaka has been described.

**2. INDIAN HERBAL PHARMACOPOEIA-**

In Indian herbal pharmacopoeia , the vernacular names of drug Asthisamharaka have been collected then the book gives complete description about macroscopic characters, microscopic, chemical constituents, identity test, adulterants, qualitative standards. Pharmacology and safety aspect of Asthisamharaka. (Published by Indian drug manufacturer association).

**CLASSICAL CATEGORIZATION OF ASTHISAMHARI IN SAMHITAS & NIGHANTUS:**

SL NO	TEXTS	VARGA/GANA
1	Susruta Samhita	➤ In Asthibhanga chikitsa
2	Chakradatta	➤ In Asthiroga chikitsa
3	Shaligram Nighantu	➤ Guduchyadi varga
4	Kaiyadev Nighnatu	➤ Ousudhu varga
5	Madanpal Nighnatu	➤ Abhayadi varga
6	Bhavprakash Nighnatu	➤ Guduchayadi varga
7	Shodhal Nighantu	➤ In Urustambha chikitsa
8	Priya Nighnatu	➤ Pippaladi Varga
9	Nighnatu Adarsha	➤ Drakshadi gana
10	Nighantu ratnakar	➤ Guduchyadi varga

**BOTANICAL DESCRIPTION<sup>(3)</sup>**

It is a fleshy perennial climber ,reaches a height of 1.5m and has quadrangular -sectioned branches with internodes 8-10 cm long and 1.2-1.5 cm wide.

- **Leaves :** Leaves are simple and heart shaped ,1-2.5 inch long, entire or 3-lobed, 2-5 x 2-5 cm, ovate-suborbicular or sub reniform, base truncate, margin distantly spinulose-crenate, apex obtuse, thick-coriaceous; petiole to 1 cm long.
- **Flower :** Small , Greenish white in colour. flowers in leaf-opposed, peduncled, umbellate cymes Calyx cup -shaped ,petals 4,ovate – oblong ,hooked at apex, disk 4-lobed ,stamens 4, anthers introrse ,Ovary bilocular ,cells 2 -ovuled style short.
- **Fruit :** Round shaped, pea like structure , diameter ¼ inch , cherry red in colour , fleshy , solitary seed.

- **Inflorescence :** Umbellate cymes, red while growing, are compound umbels on short peduncle opposite to the leaves.
- **Seed :** Seeds are black in colour , solitary seed.
- **Stem :** Long ,fleshy ,Glabrous , quadrangular, deep greenish in colour. Young branches sharply angular ,tendrils long and simple.
- **Flowering and fruiting time :** June to July.

**DISTRIBUTION<sup>(3)</sup>**

This plant ,found throughout the hotter parts of India along side hedges, neighbouring countries like Pakistan, Bangladesh, Sri Lanka and Malaysia. It can be cultivated in plains coastal areas, jungles and wastelands up to 500 meter elevation.

**AYURVEDIC PROPERTIES<sup>(4)</sup>**

**Rasa :** Madhur

**Guna:** Laghu and Ruksha

Virya: Ushna

Vipak : Madhur

**RASAPANCHAKA OF ASTHISAMHARI FROM VARIOUSNIGHANTUS**

RASAPANCHAK		B.P.N	N.A	K.N	Sg.N	Md.N	P.N
RASA	MADHUR	+	+	+	+	+	+
	KATU	+	-	-	-	-	-
	KASHAY	-	+	-	-	-	-
GUNA	GURU	-	-	+	-	-	+
	USHNA	-	-	-	+	-	-
	LAGHU	+	+	-	+	+	-
	RUKSHA	+	+	+	+	+	+
VIRYA	USHNA	+		+	+	+	+
VIPAK	MADHUR	+	-	-	+	-	+
	KATU	-	+	+	-	+	-

(+ denotes presence, - denotes absence)

B.P.N-Bhav Prakash Nighantu, N.A-Nighantu Adarsha, K.N-Kaiyadev Nighantu, Sg.N-Shaligram Nighantu, Md.N-Madanpal Nighantu, P.N-Priya Nighantu

**KARMA<sup>(3)</sup>**

- **Dosha karma:** kapha-vata nasak and Pitta vardhak.

- **Saririk karma :** Sthambhan, Sandhaniya, deepan , Pachan, Krimighna, Raktasodhak, Raktastambhan, Vrisya, Sandhaniyas, Arshoghna, Raktasamgrahak, Netray.
- **Vyadhikarma :** Asthibhagna,Asthighataja sotha, , artabhavikar, Tamakswas, raktadosa, Pachanvikar, karna srab, Netra roga, Arsa, nasagata roga, Agnimandaya, Ajirna, Vatarakta, Firangi, Upadamsha, , Vajikaran.

**VYADHIKARMA OF ASTHISAMHARI ACCORDING TO VARIOUS NIGHNATUS AS FOLLOWS**

SL.N	KARMA AND PRAYOGA	B.P.N	M.D.N	N.A	S.N	S.G.N	K.N	P.N
1	Urustambha	-	-	-	+	-	-	-
2	Vatavyadhi	-	+	-	+	-	-	+
3	Asthibhanga	+	+	-	+	+	-	+
4	Arsha	-	+	+	-	+	+	-
5	Netraroga	-	+	-	-	-	-	-
6	Karna-roga	-	+	-	-	-	-	-
7	Pradar	-	+	-	-	-	-	-
8	Dourbalay	-	+	-	-	-	-	-
9	Krimi	-	+	+	-	-	+	-
10	Swas	-	+	-	-	-	-	-
11	Timir	-	-	+	-	-	-	-
12	Vatarakta	-	-	+	-	-	-	-

(+ denotes presence, - denotes absence)

B.P-Bhav Prakash Nighantu, N.A-Nighantu Adarsha ,K.N-Kaiyadev Nighantu, S.G.N-Shaligram Nighantu, M.D.N-Madanpal Nighantu, P.N-Priya Nighantu ,S.N-Sodhal Nighantu.

**PARTS USED<sup>(4,5)</sup>**

Stem, root, leaf and whole plant

**DOSAGE<sup>(4,5)</sup>**

Fresh juice (Swarasa) : (10-20) ml

Paste (Kalka) : 5-10gm

**INDICATIONS**<sup>(4,5)</sup>

Differents parts of this drug is prescribe for the treatment of Gastritis, Bone fractures, Skin infections, Constipations, Eye diseases, Piles, Anaemia, Asthma, Irregular menstruation, burns and wounds, haemorrhoid, , certain bowel infections, Scurvy, stomachic, Cardiovascular diseases, Bleeding nose, Fracture Swelling and pain, Obesity.

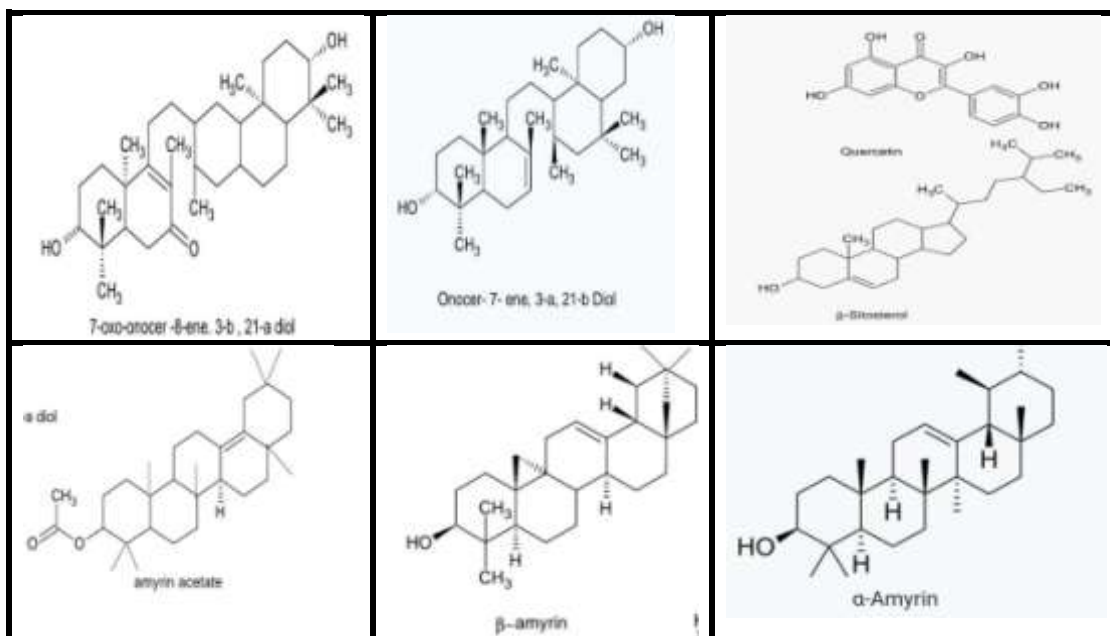
**THERAPEUTIC INDICATIONS**<sup>(3)</sup>

**External Use :**  
**Asthibhanga, Asthigataja sotha, Karna Shrab**  
**Abhayantara-Pachansamsthan :**  
 Agnimandaya, Ajeerna, Arsha.  
**Raktavaha samsthana :**  
 Vatarakta, Firanga, Upadamsha, ,rakta Shrab.  
**Prajanana samsthana :**  
 Vajikaran  
**Satmikarana :**  
 Asthibhanga.

**CHEMICAL CONSTITUTES**<sup>(6)</sup>

The stem of the plant consists of ,Calcium oxalate, Carotene, Vitamin C, Sitosterol, Traaxerol, Triterpenoids, Sodium ,

potassium , Magnesium , Calccium carbonate , Phasfate, Calcium oxalate,  $\alpha$ -Amyrin,  $\alpha$ -Amyrone, onocer-7-en  $3\alpha$ ,  $21\beta$ -diol, onocer -7-en- $3\beta$ ,  $21\alpha$ -diol,7-oxo-onocer-8-en- $3\beta$ ,  $21\alpha$  - diol., n - Hexadecanoic acid, Ethan -1,1-diethoxy, 9, 12, 15 - Octadecatrienoic acid methyl ester, Tetradecanoic acid, ethyl ester, 9, 12, Octadecadienoic acid, methyl ester, Ethyl a - d - glycopyranoside, Glycerin, Benzene - 1, 2, 4 - trimethyl, 2- Formylhistamine, Phytol , Glycerin, 2 - Cyclopenten - 1 - one, 2 - hydroxyl, Undecanoic acid, Octadecanoic acid, ethyl ester, DL - 3, 4 - Dimethy - 3, 4 - hexane diol, Hexanedioic acid, mono 2-ethylhexyl ) ester, 4H-Pyran-4-one, 2, 3 - dihydro- 3, 5 - dihydroxy - 6 - methyl, DL - 3, 4 - Dimethyl - 3, 4 - hexane diol, Benzene - 1 - ethyl - 3 - methyl, 2 - Furancarboxaldehyde, 5 - hydroxyl methyl ), n - Decanoic acid, Asarone, 1, 3, 8 - P - Menthatrien, Phenol- 4 - (3-hydroxyl-1-Propenyl ) - 2 - methoxy, Nonanoic acid, 5 - methyl, ethyl ester, 1, 2, 3 - Propanetriol, monoaceta, Oleic acid, D - Glycero - d - tallo - heptose, Hexadecanoic acid.



**Major Chemical constituents of Asthisamhari**

**PHARMACOLOGICAL ACTIVITIES:**<sup>(7)</sup>

Anti-inflammatory, Anti Osteoporotic activity , Anti haemorrhoidal activity, Bone fracture healing activity, Analgesic activity, Antioxidant activity, Antiulcer activity,

Parasympathetic activity , Anabolic and Androgenic activity, Gastro-protective Activity, Antibacterial activity, Central nervous system activity.

**Anti-inflammatory activity :** Flavonoids are inhibiting the inflammatory process. They are inhibitor of lipoxygenase especially luteolin, which is compound of . *Cissus quadrangularis* L is known to be inhibitor. The anti-inflammatory activity of  $\beta$ -sitosterol was demonstrated to have an inhibitory effect on oedema induced by both carrageen's and arachidonic acid. It is suggested that *C. quadrangularis* L. is dual inhibitor of arachidonic acid metabolism.

**Anti Osteoporotic activity :** *C. quadrangularis* L. has been reported in Ayurveda for its anti-osteoporotic activity. The phytoestrogen rich fraction (IND- HE) from the aerial parts of plant shows its activity. Plant contains phytoestrogen and triterpenoids. The phytoestrogen steroids isolated plant shows influence on early regeneration and quick mineralization of bone. The ethanolic and petroleum ether extract of *C. quadrangularis* L. shows prominent effect. Various studies confirms the anti-osteoporotic activity and phytoestrogen rich fraction (IND- HE) of *C. quadrangularis* L. increased blood calcium level, Vitamin D3, Serum estrogen, bone mineral density and bone mineral content. There is significant increase in bone thickness, bone density and bone hardness. it also significantly inhibits the anti-anabolic effect and exerts some beneficial effects on recovery of bone mineral density. The ethanolic extract of *C. quadrangularis* L. shows ethanol extract of the plant had definite anti-osteoporotic effect.

**Anti haemorrhoidal activity :** Phytochemical study of *C. quadrangularis* L, revealed that its major compounds are flavonoids. The bioflavonoids Particularly diosmin , hesperidin , oligomeric proanthocyanidin complex have demonstrated potential in the treatment of haemorrhoids and Varicose vein.. These bioflavonoids exhibit phlebotonic activity, Venotonic effects vasculoprotective effects and antagonistic effect on bio-chemical mediator of inflammation. As diosmin and hesperidin are used in combination to treat haemorrhoid ,the extract of *C. quadrangularis* L. produce same activity can also be used as anti-haemorrhoidal drug. The herb also possesses analgesic effect which is very useful in painful haemorrhoids. The plant also used as an anti-haemorrhoidal drug in their folk medicine.

**Bone fracture healing activity :** *Cissus quadrangularis* , a rambling shrub, characterized by a thick quadrangular fleshy stout stem, Commonly known as the "Bone Setter," the plant is referred to as "Asthisamdhani" in Sanskrit and "Hadjod" in Hindi because of its ability to join bones. A

phytogenic isolated steroid is believed to be the main constituent in *Cissus quadrangularis*. Studies on fracture healing suggest that this unidentified anabolic steroid may act on estrogenic receptors of the bone. Efficacy of *Cissus quadrangularis* on early ossification and remodelling of bones have been reported and it has been observed that *Cissus quadrangularis* acts by stimulation of metabolism and increased uptake of the minerals calcium, sulphur and strontium by the osteoblasts in fracture healing.<sup>(8,9)</sup> *Cissus quadrangularis* is found to contain vitamins and steroids, which are found to have specific effect on bone fracture healing. The anabolic steroidal principles from *Cissus quadrangularis* showed a marked influence in the rate of fracture healing by influencing early regeneration of all connective tissues involved in the healing and quicker mineralization of callus.<sup>(10,11)</sup>

**Analgesic activity :** The analgesic effect of the drug as observed by Haffner's tail flip and Eddy's hot plate methods were dose related. There was increase in reaction time even with such small dose as 1/40<sup>th</sup> of the LD50 . The effect lasted for about 4 hrs. *Cissus quadrangularis* exhibited significant analgesic activity compared to that of Aspirin when tested using Haffner's clip and Eddy's hot plate methods. The extract was found to be effective by both oral and intraperitoneal routes significantly ( $P < 0.001$ ) and reaction time was found to be increased by both methods. The duration of analgesic activity was from 2 to 4 hr and optimum effect was observed at 1/20th-1/10th of LD50 dose. The extract compared well with Acetylsalicylic acid.<sup>(12,13)</sup> The analgesic effect of this plant when used in bone fractures may be of great value in relief of pain which is a constant feature in these cases. As it compared well with acetyl salicylic acid in its analgesic response the nature of its chemically active constituents needs to be explored.<sup>(14)</sup>

**Antioxidant activity :** Extracts of *Cissus quadrangularis* Linn were tested for antioxidant activity by  $\beta$ -carotene linoleic acid model and also by 1, 1-diphenyl-2-picrylhydrazyl model. The ethyl acetate fraction of both fresh and dry stem extracts at a concentration of 100 ppm showed 64.8% antioxidant activity in the  $\beta$ -carotene linoleic acid system and 61.6% in the 1, 1-diphenyl-2-picrylhydrazyl systems.<sup>(15)</sup> Another study was performed to evaluate the effect of the methanolic extract of *Cissus quadrangularis* against free radical damage. The test extract exhibited significant inhibition in DPPH free radical formation, superoxide radical production and lipid peroxide

production in erythrocytes. The activities of liver marker enzymes and antioxidant defence enzymes in rat liver homogenate were assessed in control and experimental animals.<sup>(16,17,18,19)</sup> Carbon tetrachloride (CCl<sub>4</sub>) caused a significant increase in aspartate amino transaminase (AST) and alanine amino transaminase (ALT), alkaline phosphatase (ALP) and decrease in superoxide dismutase (SOD), catalase (CAT), glutathione peroxidase (GPx) and reduced glutathione (GSH), which was reverted by *Cissus quadrangularis* pre-treatment. The results obtained suggest that *Cissus* showed inhibition of lipid peroxidation, free radical production and increase in antioxidant enzymes activities, which reveal its antioxidant property. It can be concluded that the free radical scavenging activity of the plant extract may be responsible for the therapeutic action against tissue damage. The stem part of *Cissus quadrangularis* contains vitamin C, carotenoids, calcium, steroidal and these are known to be excellent antioxidants and numerous studies suggest that dietary intake of plant polyphenol antioxidants may have positive effects in oxidative stress related pathologies. These anti-oxidative constituents present in *Cissus* might be responsible for the free radical scavenging activity, anti-lipid peroxidative and antiperoxidase formation.<sup>(20,21,22,23)</sup>

**Anti-ulcer activity :** *Cissus quadrangularis* is an indigenous plant commonly mentioned in Ayurveda for treatment of gastric ulcers. The ulcer-protective effect of a methanol extract of *Cissus quadrangularis* was comparable to that of the reference drug sucralfate. Further, gastric juice and mucosal studies showed that *Cissus* at a dose of 500 mg/kg given for 10 days significantly increased the mucosal defensive factors like mucin secretion, mucosal cell proliferation, glycoproteins and life span of cells. The present investigation suggests that *Cissus* not only strengthens mucosal resistance against ulcerogenic but also promotes healing by inducing cellular proliferation.

**IMPORTANT FORMULATIONS :** <sup>(24,25,26)</sup> Lakshadi Guggul Asthisamharadi churna, Dasyadi Kashayam, Darvi Kashayam., Asthisamhari vataka, Asthisamhara swarasa Asthisamharaka lepa, Asthisamharaka Tailam.

## II. CONCLUSION:

The plant *Asthisamhari* (*C. quadrangularis* L.) is considered as a versatile medicinal plant because of its valuable medicinal uses. Mainly it is used as bone protective agent and also in many other diseases. As in Ayurvedic literature

*Asthisamhari* used extensively in the management of *Asthibhagna* and disorders related to bones. Bhavprakash Samhita, Yoga Ratnakar, Bhaishajya Ratnavali indicated it in *Asthibhagna*, *Sandhimukta* etc. Also this plant has Madhur rasa, which has property of Dhatuvardhana and Kshina-Kshata sandhankara. The property of plant is Sandhaniya, which means the drugs which are helpful in reunion of mansa, asthi etc. Sandhaniya drugs are effective against the sub-luxation of connective tissues. *C. quadrangularis* is recommended as a supplementary drug to aid in healing of fractures. This review attempts to encircle the available literature on *Cissus quadrangularis* L. with respect to its chemical constituents, Ayurvedic and modern literature, traditional uses and its various pharmacological activities. Therefore, there is the requirement to investigate the biological activity of its phyto-constituents at extensive research to exhibit its unexplored potential for development of an effective, safe and cheap herbal drug.

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