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A Review on Terminalia Arjuna (Roxb.)

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1.Introduction

Terminalia arjuna, commonly known as *Arjuna*, is a medicinal herb that has been used for centuries in traditional Ayurvedic medicine. The bark of the *Arjuna* tree is rich in bioactive compounds that have been shown to have numerous health benefits, particularly for cardiovascular health.

T.arjuna is one of the most accepted and beneficial medicinal plant in indigenous system of medicine for the treatment of various critical disease.

It is being recommended to alleviate various disease conditions like *Hridyaroga* (Cardiac diseases), *Raktavikara* (Blood disorders), *Shotha* (Inflammation), *Raktapitta* (Epistaxis), *Pandu* (Anemia), *Swasa* (Asthama), *Kandu* (Itching), *Kustha* (Leprosy), *Charmaroga* (Skin diseases), *Jwara* (Fever), *Medoroga* (Obesity), *Asthibhanga* (Bone fracture), *Vrana* (Wound), *Yauvanpidika* (Acne), *Netraroga* (Eye diseases) and *Karnaroga* (Ear diseases).(1)

Brahmanagranthas and *Śrouta sutras* have delineated *Arjuna* as the substitute for *Soma*.(2)

Botanaical Name - Terminalia arjuna Wight and Avn.

Terminalia - Disposition of leaves of some species towards the end of branchlets.

arjuna - Derived from *Sanskrit* word '*Arujna'*.

Family -Combretaceae

Kula-*Haritaki kula*

Synonyms- *Indradru, Kkubha, Dhavala, Vīravṛkṣa. Nadīsarja, Pärtha*.

External Morphology(3)

A large tree with a huge buttressed trunk and horizontally spreading branches.

Bark - Smooth, Gray, flaking off in large flat pieces. Sap wood is reddish white and heart wood is brown.

Leaves-Sub-opposite, 10-15 cm long, 4-7 cmwide, oblong oelliptic oblong, obtuse or subacute, pale dull green above, pale brown beneath. Shallowly crenate, serrate in the upper part. Base rounded or cordate, often unequal sided, main nerves arcuate, 10- 15 Pairs, reticulate venation. Petiole is 0.5 to 1 cm long, with 1 or usually 2 prominent glands at the top immediately below the leaves.

Inflorescence-Short axillary spikes or terminal panicles.

Flowers- Sessile, bracteoles linear, shorter than flowers.

Fruit - Drupe, 2.5-5 cm in diameter, ovoid or obovoid-oblong, fibrous, woody. glabrous, dark brown with 5 hard projecting wings.

Useful part-Twak (Bark)

Classification of Dravya

Caraka - Udardapraśamanavarga

Suśruta- Nyagrodhādigana, Salasarādigana

Bh.Pr.Ni - Vatadi varga

Arjuna plant

Arjuna leaf

Arjuna pusp

Arjuna fruit

2.Material and Method [4]

Systematic literature searches were carried out and the available information on various plants traditionally used for cardiovascular disorders was collected via electronic search (using Pubmed, SciFinder, Scopus, Scirus, ScienceDirect, Google Scholar and Web of Science) and a library search for articles published in peer-reviewed journals and also locally available books.

Important phytoconstituents[5]

Hydrolysable tannis (15%), Triterpenoid saponin, Arjunolic acid, b-sitosterol, El- lagic acid, Arjunic acid, Arjunine, Arjunetinc, Calcium, Aluminium and Magnesium.

3.Result –

Terminalia arjuna is a medicinal herb that has been used for centuries in traditional Ayurvedic medicine. Numerous pharmacological actions, such as cardio-protective, antioxidant, anti-inflammatory, and anti-atherosclerotic effects, have been demonstrated for its bark extract. Terminalia arjuna has a wide range of clinical uses, and more study is necessary to completely understand its medicinal potential.

Its bark extract has been shown to possess various pharmacological activities, including cardio-protective, antioxidant, anti-inflammatory, and anti-atherosclerotic effects. The clinical applications of Terminalia arjuna are diverse, and further research is warranted to fully explore its therapeutic potential.

4.DISCUSSION -

Pharmacological Activity of plant: -

Properties -

Rasa- Kaşaya

Guna -Laghu, Rükşa

Vipaka- Katu

Virya- Sita (acc. to Dha. Ni.)

Antimicrobial activity: Scientifically analysis reported that water extract of Terminalia arjuna barks shows maximum amount of antimicrobial activities against Proteus Vulgaris, Klebsiella aerogenes, Eschrichia.[6]

Anticancer activity: Arjuna extract inducing DNA damage in HepG, cells indicated that Terminalia Arjuna extract induces ROS production in HepG, cells and consequently causes apoptosis.[7]

Anti-inflammatory: Herbal ethanolic extract of Datura stramonium (leaves) Terminalia arjuna (bark) and Withania somnifera (root) that analyze polyherbal preparation have anti inflammatory ability to resist the enzyme cycloxygenase (COX) leading to resist of prostaglandin synthesis causing inflammation at the 3rd stage.[8]

Antioxidant activity: Methanol extract of Terminalia Arjuna has intense antioxidant activity and may have ability use in medicine.**[9]**

Antiasthmatic activity: Terminalia Arjuna contain Arjunolic acid and alcoholic extract have significant mast cell stabilization activity.[10]

Gastro protective effect: Terminalia Arjuna play important role as a gastroprotective agent probably because its cytoprotective nature and free radical scavenging activity.**[11]**

Decrease arsenic-induced toxicity: Arjunolic acid play important role against arsenie-induced cellular oxidative expose.[12]

Antidiabetic activity: Diabetic rats model treated with Terminalia arjuna extracts.

Analgesic activity: Extract was found to be effective by both oral and i. p. routes significantly and reaction time was found to be increased by both methods. The extract compared well with Acetylsalicylic acid.

Antiulcer activity: Cissus at a dose of 500 mg/kg given for 10 days significantly increased the mucosal defensive factors like mucin secretion, but also promotes healing by inducing cellular proliferation.

Antihemorrhoidal Activity: As the combination of flavonoids (90% diosmin and10% hesperidin) used clinically for the treatment of hemorrhoid was reported to have antiinflammatory and analgesic activities.

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