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A LITERARY STUDY ON *HARIDRA* (*CURCUMA LONGA*) - A REVIEW STUDY

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ABSTRACT

Curcuma longa (Haridra) is an essential medicinal plant from Zingiberaceae family. Haridra is frequently utilised in Ayurveda for the treatment of different illnesses through its Rasapanchak, since it is a constituent of *Chandraprabha vati, Mahatikta Ghrita, Haridra Khand, Dashamulaarista,* and others. *Haridra* is the name given to it because of its colour. Haridra is utilised in numerous formulations in India's Ayurvedic Formulary. In many formulations it is used as a key component. It has long been prized for its wide range of therapeutic benefits, traditional uses, and cosmetic value. Anti-inflammatory, antibacterial, antidiabetic, anthelminthic, hepatoprotective, hypolipidemic, antihistaminic, and antifungal agents are all widely utilised. Prameha, Krimi, Aruchi, Apachi, Pandu, Visa, and other Ailments have been documented in Ayurvedic scriptures. The current page contains all of the material needed to understand Haridra in Ayurveda, including all of the relevant classical references.

KEYWORDS: *Haridra, Ayurveda,* Curcuma longa etc.

INTRODUCTION

Haridra (Curcuma longa Linn.) is an essential herb that is used for both ceremonial and therapeutic purposes. It's a popular spice that's generally associated with Indian cuisine, where it's used in curries and other ethnic cuisines.[1] Turmeric has also been utilised in

Ayurvedic medicine for ages, which combines the curative effects of plants with the consumption of food.

Ayurved considers Curcuma longa Linn, a member of the ginger family (Zingiberaceae), to be a golden medicine. After various studies, modern science has uncovered several of its functions. It's worth noting, though, that this ubiquitous and well-known plant is also revered in numerous Ayurvedic scriptures.[2] Because of its vast spectrum of medical advantages, this amazing plant has found its way into the limelight. But, above all, before researching any herb, we must first understand the ancient literary references, which is why the review research was conducted.

Haridra's pharmacological action has earned it the names Varnya, Medaghna, Vrana ropak, Visodhani, Stanya sodhak, and others. It is a well-known Ayurvedic medication that is auspicious as well as having aesthetic and religious significance. Haridra is critical in preventing and controlling Prameha.[2,3] It is commonly used to treat ailments such as Krimi, Aruchi, Apachi, Pandu, Visa, and others. Haridra is referenced in several literature under various names.

It is described in several texts from the ancient time to Nighantu Kala in relation to many preventative features and ailments. Haridra is referenced in several Mahakashayas, Ganas, and Vargas in many Samhitas and Nighantus. This research was carried out in order to compile all of the information regarding the ancient references in order to gain a comprehensive understanding of Haridra in Ayurveda.

AIM & OBJECTIVE

To evaluate the effect of *Haridra* **(***Curcuma longa***)** on human body.

METHOD AND MATERIALS

Ayurvedic and modern publications, authentic websites (PubMed, Medicinal Plants, etc.), genuine magazines, literature, manuscripts, Sanskrit Dictionary, Shabdakosha, and other sources are used to compile information about *Haridra* **(***Curcuma longa***).**

Outline of Haridra Plant.[4]

Local name: Haridra, halud.

Botanical name: Curcuma longa Linn.

Family: Zingiberaceae/ Scitaminae.[5]

Curcuma: This word is derived from the Sanskrit Kunkuma, means referring to both turmeric and saffron.

Longa: Plant is long/tall. Vernacular names of Haridra.[6]

Specific Feathers.[7,8]

Flowers: Yellow.

Rhizome: The useful part is rhizome and it is golden-yellow within, used for dyeing.

Uses: It is effective drug for jaundice, worms, Prameha and poisoning.

Taxonomical position of Haridra.[9]

Kingdom – Plantae – plants.

Subkingdom –Viridiplantae.

Division –Tracheophyta.

Class –Magnoliopsida.

Order – Zingiberales.

Family –Zingiberaceae/ Scitaminae.

Genus –Curcuma.

Species –longa.

Descriptions of morphology.[10]

Root stock is big and ovoid, and sessile tubers are thick, cylindrical, and bright yellow on the interior.

Leaves have a long petiole and are oblong with a narrow base. Bracts pale green; blooms pale green, as long as bracts; blossoms during wet seasons.

Habitat and distribution.[11]

The plant is native to South Asia and is widely cultivated in warmer regions of the world, including India.

Rhizome macroscopic and microscopic characteristics.[12]

Macroscopic

Externally yellowish to yellowish-brown, with root scars and leaf base annulations, horny fracture, shattered surface orange to reddish brown, centre cylinder twice the width of cortex: rhizomes oval, oblong, or pyriform (round turmeric) or cylindrical, typically short branching

(long turmeric), former approximately half as wide as long, later 2-5cm long and around 1-1.8cm thick, aroma and taste.[13]

Microscopic

Transverse section of rhizome reveals epidermis with thick-walled, cubical cells of various dimensions, cortex with mostly thin-walled rounded parenchyma cells, scattered collateral vascular bundles, a few layers of cork developed under epidermis, and scattered oleo-resin cells with brownish contents; cork generally composed of 4-6 layers of thin-walled, brick-shaped parenchyma cells.

Kanda is a part of use-

Dose[14]: 1-3 gram of powdered medication.

Anupana[15]: Chitraka, Triphala, Darvi, and Kalinga Dhatri rasa and Madhu or Guduchi Swarasa or Amalaki Swarasa or Kashaya.

Traditional uses include spices and holy occasions such as weddings and sacred thread ceremonies.

Phytochemistry:[16] is the study of the chemical composition of plants.

Chemical Ingredients - Curcuminoids (approx. 6%), the yellow colouring principles of which curcumin accounts for 50-60%, and essential oil (2-7%) with a high amount of bisabolane derivatives are the main. Curcuminoids (3-6%) are the principal polyphenolic chemicals in turmeric.[17] Curcumin, desmethoxycurcumin, and bisdemethoxycurcumin are the main chemical ingredients.

Other Chemical Constituents

Compounds that are both phenolic and non-phenolic: 1-hydroxy-1, 7-bis (4-hydroxy-3methoxyphenyl)-, 1-hydroxy-1, 7-bis (4-hydroxy-3methoxyphenyl)-, 1-hydroxy-1, 7-bis (4-hydroxy-3methoxyphenyl)-, 1-hydroxy-1, 7-bis (4-hydroxy-3methoxyphen (6E) 1-heptene-3, 5-dione; -6-heptene-3, 5-dione (4- hydroxy-3, 5-dimethoxyphenyl) -7+ (4hydroxy-3-methoxyphenyl) – (1E, 6E) -1, 6heptadiene-3, 4-dione, and so on Other non-phenolic chemicals include curlone, -turmerone, terpinolene, and others.[18] Turmerin is a water-soluble peptide that contains aspartic acid/aspargine, glutamic acid/glutamine, serine, glysine, argenine, proline, alanine, tyrosine, valine, methionine, leucine, and isoleucine.

Adulterants

Curcuma longa is seldom tampered with or replaced. TLC and GLC fingerprint profiles, on the other hand, may differentiate the medicine from other Curcuma species. Berberis aristata (Druharidr) is replaced by Curcuma longa.

Pharmacological Action

Turmeric's major active element, curcumin, is as potent and antioxidant as vitamins C, E, and Beta-Carotene, making it a popular option among consumers for cancer prevention, liver protection, and anti-aging (Rasayana).[19] Turmeric has also been shown in multiple studies to suppress the development of a variety of cancer cells (as Lekhaniya). Curcumin has been demonstrated to be non-toxic to humans in a number of investigations. Turmeric has been shown to help with post-surgical inflammation (Sothahara). It works wonders for wound healing (Vrana ropak). It guards against infections of the respiratory tract (effect on Shwasa and Kasa).[20] Helicobacter pylori, which causes stomach ulcers and has been associated to stomach cancer, is inhibited by curcumin (effect on Aruchi, Grahani and Krimi). Curcumin has the ability to bind to heavy metals like cadmium and lead, lowering their toxicity (Vishaghna). Curcumin's protective effect on the brain is explained by this feature.

Medicinal Properties of Haridra

Anti –inflammatory Action

The immune system has been stimulated by turmeric to cause infection, damage, and inflammation. Chronic inflammation can cause chronic sickness such as cardiovascular, pulmonary, metabolic, and neurologic disease, obesity, cancer, pancreatitis, arthritis, and type 2 diabetes by triggering the immune system over lengthy periods of time. Turmeric has been used in Indian medicine to treat pain, wound healing, edema, and inflammation in a way that is akin to phenylbutazone, a chemical medication. Curcumin, a curcuma longa extract, has anti-inflammatory properties both in vivo and in vitro.[21]

Anti-Oxidant Action

Antioxidants serve a critical role in protecting the body against oxidative stress and radical damage, both of which are common causes of illness. Curcumin's anti-oxidant activity is an essential feature of turmeric, which is utilised to treat chronic illnesses, mutagenesis, carcinogenesis, DNA damage, and harmful bacterial growth suppression.[22]

Anti-Diabetic Action

The most serious medical worry associated with DM is its impact on the body's organs. In diabetics, high blood sugar levels (hyperglycemia) can lead to a variety of complications. Curcumin may have a hypoglycemic impact by boosting the function of surviving pancreatic beta cells, decreasing the quantity of beta 2- adrenoreceptors, and upregulating the activity of the insulin receptor gene in the skeletal muscle of STZ-induced type diabetic mice, among other functions. Curcumin can help with pathological changes associated with chronic diabetes by decreasing inflammation, oxidative stress, hyperglycaemia, and hyperlipidaemia. Curcumin formulations have been developed in order to improve its physiochemical and pharmacokinetic characteristics. Diabetic nephropathy is the most devastating consequence of diabetes. In individuals with uncontrolled lupus nephritis, curcumin supplementation at a dosage of 66.3 mg per day for eight weeks was beneficial in reducing proteinuria (an excessive quantity of protein in the urine), haematuria (blood in the urine), and systolic blood pressure.[23]

Anti-Cancerous Action

Cancer is characterised by aberrant cell growth. Curcumin has a considerable inhibitory impact on the gene that promotes tumour cell proliferation, angiogenesis, transformation, and metastasis. By activating CHOP/GADD135, curcumin exerts cytotoxic anticancer action on tumour cells by triggering G2/M phase cell cycle and death. Curcumin inhibits cell proliferation by demonstrating the regulatory protein that controls aberrant cell growth during the cell cycle. Cyclin D1 plays a critical role in the genesis and development of many malignancies, including prostate, breast, and oesophageal cancers.[24] Curcumin has the capacity to neutralise carcinogenic oxygen radicals such peroxides, hydroxyl radicals, and super-oxides.

Table showing Types of Haridra According to Bruhatrayi

Name of *Samhita*	Types of *Haridra*
Acharya Charaka	***1. Lekhaniya Mahakashaya*** ***2. Kusthaghna Mahakashaya*** ***3. Visaghna Mahakashaya*** ***4. Sirovirecana dravya*** ***5. Apatarpanaausadha*** ***6. Tikta Skandha*** ***7. Vamana dravya***
Acharya Susruta	***1. Vacadi gana*** ***2. Haridradi gana***

	3. Mustadi gana ***4. Vata samsamana*** ***5. Slesma samsamana*** ***6. Lakshadi gana*** ***7. Tikta varga***
Acharya Vagbhatta	***1. Haridradigana*** ***2. Mustadigana*** ***3. Vacaharidradigana***

(References – Dr. Swagata Chakraborty, Aparajita Das. A Classical Ayurveda Review on Haridra.AYUSHDHARA, 2020;7(Suppl 1):47-55)

Some formulations

Kasaya: *Varaadikashaya,Mahatiktakkashaya* etc.

Avaleha: *Haridrakhand Avaleha.*

Churna: *Rajaniaadi Churna, Bhunimbaadi Churna* etc.

Ghrita:*, Panchatikta guggulu ghrita, Triphala ghrita, Phala ghrita, Jatyadi ghrita, Maha Kalyanak Ghrita,* etc.

Taila: *Jatyadi taila, Vajrak taila* etc.

Gutika: *Punarnava mandoor, Chandraprabha vati ,Vasantakusumakar rasa* etc

Asava-arista: *Dashamulaarista, Kanakvindaarista, Pippalyasava* etc.

Guggulu: *Chandraprabha Guggulu.*

CONCLUSION

In a nutshell, the current study shows that Haridra can be used to treat a variety of clinical ailments and disorders. It possesses Katu-tikta rasa, Ruksha-ushna guna, Ushna virya, and Katu vipaka, according to several Ayurvedic scriptures. According to Acharya Vagbhata, Haridra is primarily a Pittasamak, but it also serves as a Tridoshasamak. Haridra's Rasapanchak has a multifaceted activity. Haridra, after all, has a wide range of benefits, and has long been considered a golden medication in Ayurveda.

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