

A REVIEW ON *HARIDRA (CURCUMA LONGA Linn.)* IN BRIHTRAYI AND NIGHANTUS:
AN OVERVIEWPremlata*¹, Shubham Khandekar², Anurag Gangwar³ and B. Ram²¹Senior Resident, Department of Dravyaguna, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi, Uttar Pradesh, India 221005.^{2,3}Junior Resident, Department of Dravyaguna, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi, Uttar Pradesh, India 221005.²Professor, Department of Dravyaguna, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi, Uttar Pradesh, India 221005.

*Corresponding Author: Premlata

Senior Resident, Department of Dravyaguna, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi, Uttar Pradesh, India 221005.

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ABSTRACT

Objective: This review article aims to reveal the classical uses of *Haridra* for health care and management of various disorders. **Data Source:** The available literature on *Haridra* was collected from original scriptures, classical Ayurvedic texts, modern sciences and scientific databases like PubMed, Google Scholar etc. with *Haridra* and *Curcuma longa Linn.* **Review Methods:** This article reveals the ancient inventiveness behind the therapeutic use of *Haridra* from traditional system of medicine to contemporary science. The traditional application confirms that the principles of available *Ayurvedic* classics in various periods from Vedic to modern era. **Conclusion:** In this review work, it was found that *Haridra* overcomes different kinds of diseases related to respiratory system, GIT system, cardiovascular system, skin diseases and inflammatory diseases etc. Various herbomineral and polyherbal formulations of *Haridra* have used to maintain the overall health of individual.

KEYWORDS: *Haridra*; *Curcuma longa*, *Ayurveda*, Classical Texts of *Ayurveda*, Modern texts etc.

1. INTRODUCTION

Haridra has been identified as *Curcuma longa* Linn. belongs to family *Zingiberaceae(Scitaminae)*.^[1] *Curcuma longa* Linn. is a Latin name derived from 'Kourkoum'; a word of Arabic origin meaning saffron. *Curcuma* is also the name of the species chosen by Linnaeus in 1737 for this kind of monocotyledonous herb of India. Rhizome of curcuma is one of the most common spices for its special taste and colour. Infact the powder of this plant used in Hindu rituals especially in wedding where ladies use it to make a beauty spot on the forehead. In north India, people living on the mountains use this plant to protect the skin against sun rays.^[2] *Haridra* is native of South Asia and is cultivated extensively through out warmer parts of the world, including India, Combodia, China, Indonesia, Madagascar, Malaysia, Phillipines, and Viet Nam. It is extensively cultivated in China, India, Indonesia, Thailand and throughout the tropics, including tropical regions of Africa.^[3] Crop is harvested after 9-10 months when lower leaves turn yellow rhizomes carefully dug up with hand-picks between October-April and cured by boiling and dried.^[1] Tall herbs, root stock ovoid, tubers thick cylindrical light yellow in color inside. Leaves up

to 50 × 8cm, oblong lanceolate, apex –acuminate, base tapering. Petiole as long as the blade. Peduncle hidden by the sheathing petiole. Spikes 10-15cm long. Corolla white tube funnel shaped, flowering bracts pale green, bracts of coma tingled with pink.^[4] It is described in Astanga Sangraha in 'Agyra prakarana' separately while in Astanga Hridaya it is described along with Dhatri and said as best in Pramehahara dravya in 'Agyra prakarana'.^[5]

Properties and action of *Haridra* in database of CCRAS^[6]

Rasa : Tikta, Katu

Guna : Ruksha, laghu

Virya : Ushna

Vipaka : Katu

Doshaghnata: Tridoshashamak

Rogaghnata: Shotha, Vedana, Vrana, Shwasa, Aruchi, Vibandha, Kamala, Jalodara, Krimi, Pandu, Kasa, Pratishtyaya, Shukrameha, Prameha, Kandu, Shittapitta, Kushta.

Karma: Kaphapittanut, Vishaghna, Varnya, Kusthaghna, Krimighna, Kandughana, Pramehanashaka, Raktaprasadana, Raktvardhaka, Raktastambhana, Vranaropana, Anulomana, Pittarechaka, Shwasahara, Mootrasangrahaniya, Mootravirajaniya.

Siddhi Sthana, mostly for the treatment of disease and for Rasayan Karma.

In *Caraka Samhita*, *Haridra* is mentioned in *Lekhaniya Mahakashaya*, *Kusthaghna Mahakashaya*, *Vishaghna Mahakashaya*, *Tikta Skandha* and *Shirovirechana dravya sanghara* of *Vimana Sthana*.

2. MATERIAL AND METHODS

The full review of original classical *Ayurvedic* texts from different periods and scientific database was done.

2.1 Caraka Samhita (1000 B.C.E – 4th Century A.D.)^[7]

Acharya Caraka has described *Haridra* in *Sutra Stana*, *Viamana Sthana*, *Chikitsa Sthana*, *Kalpa Sthana* and

Table No. 1: Single and compound form of *Haridra* are presented below in tabular form.

S. N.	Preparations	Indications/Action	References
1.	<i>Haridra</i>	<i>Shirovirecana</i>	Su. 2/5
2.	<i>Kusthadi Lepa</i>	<i>Kustha</i>	Su. 3/8
3.	<i>Haridra Lepa</i>	<i>Kustha</i>	Su. 3/14
4.	<i>Prasavasoolanashaka Lepa</i>	<i>Prasavasoola</i>	Su. 3/25
5.	<i>Mustadi Kwatha</i>	<i>Santarpa/Eajanya vyadhi</i>	Su. 23/12
6.	<i>Vyoshadha Saktu</i>	<i>Prameha, MuOhavata, Kustha, A^asha</i>	Su. 23/19
7.	<i>Prathama Bamha Rasayana</i>	<i>Rasayana karma</i>	Ci 1-1/49
8.	<i>Haritakyadi Yoga</i>	<i>Rasayana karma</i>	Ci 1-1/77
9.	<i>Churna</i>	<i>Prameha</i>	Ci 6/26
10.	<i>Haridradi Kwatha</i>	<i>Kaphaja Prameha</i>	Ci 6/27
11.	<i>Trikantakadya Sneha</i>	<i>Kaphavataja prameha</i>	Ci 6/38
12.	<i>Phalatrikadi Kwatha</i>	<i>Prameha</i>	Ci 6/40
13.	<i>Kwatha</i>	<i>Kandu, Kustha</i>	Ci 6/31
14.	<i>Tiktaiksvakadi Taila</i>	<i>Pittaja prameha</i>	Ci 7/108
15.	<i>Mahatiktaka Ghrita</i>	<i>Kustha</i>	Ci 7/145
16.	<i>Mahakhadira Ghrita</i>	<i>Kustha</i>	Ci 7/153
17.	<i>Pippalyadi Lavana</i>	<i>Hridaroga, Shvayathu, Gulma, Pliha, Arshha, Udar roga</i>	Ci 13/159
18.	<i>Haridradha Churna Pralepa</i>	<i>Arsha</i>	Ci 14/52
19.	<i>Pippalyadi Pralepa</i>	<i>Arsha</i>	Ci 14/52
20.	<i>Mulasava</i>	<i>Deepana, Raktapitta, Aanah, Hridaroga, Pandu</i>	Ci 15/156
21.	<i>Punarnava mandura</i>	<i>Pandu, Pliha, Arsha,</i>	Ci 16/94
22.	<i>Haridra Churna</i>	<i>Kamala</i>	Ci 16/99
23.	<i>Dhuma</i>	<i>Hikka Shwasa</i>	Ci 17/77
24.	<i>Guducyadi Ghrita</i>	<i>Gulma, Shvasa,</i>	Ci 18/161
25.	<i>Peya</i>	<i>Vamanartha</i>	Ci 22/49
26.	<i>Gandhahastinamaka Agada</i>	<i>Visa</i>	Ci 23/71
27.	<i>Candanadi Lepa</i>	<i>Visa</i>	Ci 23/191
28.	<i>Haridra Kalka</i>	<i>Visa</i>	Ci 23/198
29.	<i>Parama Agada</i>	<i>Visa</i>	Ci 23/212
30.	<i>Pradhamana Churna</i>	<i>Shiroroga</i>	Ci 26/184
31.	<i>Devadarvyadi Kvatha</i>	<i>Urustambha</i>	Ci 27/31
32.	<i>Madhuchinna Pralepa</i>	<i>Vatarakta</i>	Ci 29/142
33.	<i>Madana Kalpa</i>	<i>Vamana</i>	K 1/19
34.	<i>Haridradi Vasti</i>	<i>Kapha nashaka</i>	Si 10/23

2.2 Sushruta Samhita (1000 B.C.E – 5th Century A.D.)^[8]

In *Sushruta Samhita*, *Haridra* is mentioned in *Sutra Sthana*, *Chikitsa Sthana*, *Kalpa Sthana* and *Uttartantra*.

In *Sushruta Samhita*, *Haridra* is described in *Haridradi Gana*(Su.Su. 38/28, *Mustadi Gana* (Su Su. 38/54 and *Lakshadi Gana*(Su.Su.38/55): *Vata Sansamana varga*(Su.Su., *Vallipancamula* (Su.Su 38/73).; and *Tikta*

varga(Su.Su43/22). In Chikitsa Sthana, Haridra is mentioned in Asthapanopayogi dravya(Su.C.).

Table No. 2: Single and compound form of Haridra are presented below in tabular form.

S.N.	Preparations	Indications/Actions	References
1.	Kalka	Jalouka Avacharana	Su. 13/19
2.	Haridradi Churna	Vrana	Su. 14/35
3.	Kvatha	Vrana shodhana	Su.36/16
4.	Snashodhana Ghrta	Vrana	Su. 36/16
5.	Ropana Taila	Vrana	Su. 36/27
6.	Rasakriya	Vrana Ropana	Ci. 1/73
7.	Haridra Patra Kalka	Vataja Vrana	Ci. 1/113
8.	Haridra Patra Kalka	Kphaja Vrana	Ci. 1/115
9.	Tail	Vrana Ropana	Ci. 2/38
10.	Tail	Sadhya Vrana	Ci. 2/75
11.	Tail	Vrana shodhana	Ci. 2/90
12.	Kashaya	Kaphaja Vatarakta	Ci. 5/10
13.	Aalepa	Arsha	Ci. 6/12
14.	Haridra Kashaya	Kaphapittaj Prameha	Ci. 6/2011
15.	Ghrta Abhyanjana	Vrana	Ci. 7/35
16.	Kalka	Nadi Vrana	Ci. 8/41
17.	Taila	Bhagandara	Ci. 8/48
18.	Mahatikta Ghrta	Kustha, Visamajvara, Raktapitta, Hrdaroga, Raktapradara, Pandu	Ci. 9/8
19.	Mahavajraka Taila	Kustha, Gandamala, Bhagandara, Nadi Vrana	Ci. 9/57
20.	Churna	Prameha	Ci.11/8
21.	Kashaya	Lavanameha	Ci. 11/9
22.	Varti	Udara roga	Ci. 14/11
23.	Karanjadi Ghrta	Dustha varana, , Chinna Vrana	Ci. 16/17
24.	Karanja Taila	Medo Arbuda	Ci. 18/42
26.	Ajeya Ghrta	Visa	Ka. 2/48
27.	Maha-Agada	Visa	Ka.5/61
28.	Kshara –Agada	Visa	Ka. 6/19
29.	Mahasugandhinama Agada	Visa	Ka. 6/19
30.	Kalka	Musika Visa	Ka. 7/39
31.	Trikantaka Yoga	Visa	Ka. 8/47
32.	Anjana Varti	Kaphaja Abhishyanda	U. 11/7
33.	Dhuma	Kaphaja Timira	U. 17/42
34.	Churna	Kaphaja Yoniroga	U. 28/27
35.	Katutrikadi Kvatha	Kaphaja jvara	U. 39/187
36.	Pancagavya Ghrta	Vishama jvara	U.39/240
37.	Haridradi Kvatha	Aamadasha	U. 40/28
39.	Brihatyadi Ghrta	Pandu	U. 44/22
40.	Nringyadi Ghrta	Shvasa, Kasa, Hikka	U. 51/44
41.	Raktadi Churna Ghrta	Kasa	U. 52/18
42.	Vyusadha Gutika	Visuchika	U. 5/18
43.	Naktamaladi Varti	Graha Dosha	U. 60/44

2.3 Astanga Hridaya (7th Century A.D.)^[9]

- In Astanga Hridaya, Haridra has been mentioned in Sutrasthana, Cikitsasthana and Uttarasthana.
- In Astanga Hridaya, Vagbhata mentioned Haridra in Haridradi gana, Mustadi gana.
- As described in Astanga sangraha in 'Agrya prakaraEa' separately while in Astanga hridaya it is described in Agrya prakaraEa along with dhatri and indicated in prameha (A.H.U. 40/48).

- In Astanga Hridaya along with nisha, rajani, haridra, and two other synonyms come that is pitang (A.H.U. 22/98) and Vishaghna (A.H.U. 6/30).
- It is also included in Tikta gana (A.H.Su. 10/29).
- One important thing for controversy is that, nisha and rajani described simultaneously at one place in a single preparation for kustha (A.H. Ci. 19/38-39).

S.No.	Preparations	Indications/Actions	References
1.	<i>Saktu</i>	<i>Hridaroga</i>	Su. 14/26
2.	<i>Mustadi Gana</i>	<i>Yonigata roga</i>	Su .15/40
3.	<i>Tikshna Dhuma</i>	<i>Murdha virechana</i>	Su. 21/17
4.	<i>Kalka</i>	<i>Jalauka Avacharana</i>	Su. 26/40
5.	<i>Nisha Taila</i>	<i>Asrutikarana</i>	Su. 27/36
6.	<i>Kvatha</i>	<i>Sannipataja Jvara</i>	Ci. 1/65
7.	<i>Churna</i>	<i>Shvasa, Hikka</i>	Ci. 4/42
8.	<i>Lepa</i>	<i>Arsha</i>	Ci. 8/21
9.	<i>Churna</i>	<i>Prameha cikitsa</i>	Ci. 12/17
10.	<i>Kvatha</i>	<i>Kaphaja Vidradhi cikitsa</i>	Ci. 13/5-6
11.	<i>Churna</i>	<i>Udar cikitsa</i>	Ci. 15/10
12.	<i>Antardhuma</i>	<i>Gulma, Asthila</i>	Ci. 15/70
13.	<i>Anjana</i>	<i>Panduroga</i>	Ci. 16/44
14.	<i>Mahatiktaka ghrta</i>	<i>Kustha</i>	Ci. 19/8
15.	<i>Bhunimbadi churna</i>	<i>Kustha, Mehaprasupti</i>	Ci. 19/33
16.	<i>Kvatha</i>	<i>Kaphapittaj Kustha</i>	Ci. 19/38
17.	<i>Vati</i>	<i>Kustha</i>	Ci. 19/42
18.	<i>Vati</i>	<i>Shvitra Kustha</i>	Ci . 19/64
19.	<i>Pachatikta guggulu ghrta</i>	<i>Vata vyadhi</i>	Ci. 21/59
20.	<i>Laksadi ghrta</i>	<i>Balagraha</i>	U. 2/55
21.	<i>Siddhartaka ghrta</i>	<i>Bhuta Pratishedha</i>	U. 5/10
22.	<i>Siddhartaka ghrta</i>	<i>Bhuta Pratishedha</i>	U. 5/15
23.	<i>Bhutravahya ghrta</i>	<i>Bhuta Pratishedha</i>	U. 5/19
24.	<i>Mahbhtarava ghrta</i>	<i>Bhta Pratishedha</i>	U. 5/20
25.	<i>Kalyanaka ghrta</i>	<i>Unmd chikitsa</i>	U. 6/27
26.	<i>Mahapaishachika ghrta</i>	<i>Unmada</i>	U. 6/39
27.	<i>Mahapancha gavya ghrta</i>	<i>Apasmara Pratishedha</i>	U. 7/19
28.	<i>Vajraka Taila</i>	<i>Kustha</i>	U. 19/79
29.	<i>Churna</i>	<i>Mukharoga</i>	U. 22/98
30.	<i>Phala ghrta</i>	<i>Graha Nashaka</i>	U. 34/64
31.	<i>Candrodaya agada</i>	<i>Visha chikitsa</i>	U. 35/26
32.	<i>Brahma rasayana</i>	<i>Rasayana</i>	U. 39/17
33.	<i>Agrya Samgraha</i>	<i>Prameha</i>	U. 40/48
34.	<i>Siddhartaka ghrta</i>	<i>Bhuta Pratishedha</i>	U. 5/10

2.4. HARIDRA IN NIGHANTU LITERATURE

The word *Nighantu* is based on the term *Nigama*. The term *Nigama* is that which brings out extremely concealed or secret meaning of words. *Nighantu* are defined as a glossary containing synonymous groups, the names of drugs, plants, animals, minerals or anything that is administered to the human body either as food or medicine.

2.4.1. Amarkosha (4th Century A.D.)^[10]

This book is the compilation of Amar Singh. In this book total subject was divided into 3 parts. In first and second part 10 chapters in each, and in third part 5 chapters are described. The total subject was narrated with synonyms. Dravyas are described in 4th chapter of second part.

Haridra has five synonyms – *Nishkhyā, Kanchani, Pita, Haridra, Varavarnini*.

(A.K. Kanda-2, *Vaisya varga-9, Shloka 41*)

2.4.2. Susruta Nighantu (7th century A.D.)^[11]

This is probably oldest *Nighantu* which is written by *Susruta*. This has been published from Nepal.

In this *Nighantu*, *Haridra* has been described in *Vallipanchamula* and *Haridradi gana*. *Haridra, Rajani, Pita, Varnavati, Krmighna, Kancani, Gouri, Yoshidvallabhika* are the synonym of it.

(*Sausruta Nighantu Haridradi gana Shloka 189*)

2.4.3. Astanga Nighantu (8th century A.D.)^[12]

An oldest *Nighantu* written by *Acharya Vahata*. In *Astanga Nighantu Haridra* has been described in *Haridradi gana*. Its synonym are described here – *Nisha, Ksapa, Ratri, Vara, Lomashmulika, Haridra, Nishahava, Rajni*.

(*Astanga Nighantu Haridradi gna Shloka 152*)

2.4.4. Dhanvantari Nighantu (10-13th Century A.D.)^[13]

Composed by *Mahendra Bhougika*. This *Nighantu* has been divided into 7 *Varga's* like *Guducyadi, Shatapuspadī* etc.

In this *Nighantu Haridra* is described in *Guduchyadi varga* with their synonym, properties and action as well. *Haridra Pitika, Pinga, Rajana, Ranjini, Nisha, Gauri, Varnavati, Pita, Harita, Varavarnini, Bhadratala,*

Vishaghni, Jayanti, Dirgharanga and Rangini are the synonyms.

(*Dhanvantari Nighantu Guduchyadi Varga Shloka 53-56*).

2.4.5. *Shodhala Nighantu (12th Century A.D.)*^[14]

The *Nighantu* written by *Shodhala*. He followed *Astanga Hridaya* because of the concise style and as such has quoted much for the same. The work has got intimate relation with the *Dhanvantari Nighantu*. This *nighantu* was composed by *Shodhala* in two parts named as *Naamasangraha* dealing with synonyms and *Gunasangraha* dealing with properties and actions.

Haridra is mentioned in the "*Guducyadi Varga*". The following synonyms are seen in this *Nighantu* i.e. *Nish, Rajani, Gauri, Pita, Varavarnini, Bhadrakta, Sumangallya, Harita, Haridra*.

(*Shodhala Nighantu Guducyadi varga Shloka 133-134*)

2.4.6. *Abhidhana Ratnamala (13th century)*^[15]

Haridra has been placed in "*Tiktaskandha*" and *Haridra, Haldi, Pita, Gouri, Nishahava, VarEini, Rajani, Dirgharaga*, are synonym given to it.

(*Abhidhana Ratnamala Tiktaskandha Shloka 14*).

2.4.7. *Hridaya Deepaka Nighantu (13 Century A.D.)*^[16]

The author of this work is *Bopadeva* son of *Keshava*. The subject matter of this work is well divided into eight *vargasa*. It follows metric style *Paryaya ratnamala* of *Madhava*.

Nighantukara has placed this drug in *Prathama Varga*. The following synonyms are given in this *Nighantu* – *Rajani, Nisha Pita, and Darvi*.

(*Hridaya Deepaka Nighantu Dvipada varga shloka 1*)

2.4.8. *Madanpala Nighantu (14th Century A.D.)*^[17]

Also known as *Madan Vinoda* written by *Madan Pal*. *Haridra* has been described in *Abhayadi Varga*. Following are the synonym of *Haridra* - *Rajani, Gouri, Ranjini, Varavarnini, Pinda, Pita, Varnavati, Nisha*. Regarding its properties it has been said as *Tikta in rasa, Ruksha in guna, Ushna in virya, Katu in vipaka*. It is indicated in *Vrananashaka*.

(*Madanpala Nighantu Abhayadi Varga 228-229*).

2.4.9. *Raja Nighantu (14th Century A.D.)*^[18]

This *Nighantu* is also known as *Abhidana Cudamani* or *Nighanturaja*, is written by *Narhari*, son of *Ishvarasuri*.

Haridra is included in *Pippalyadi varga*. *Haridranjani, Svarmavarna, Dirgharaga, Varnadatri, Varanga, Mangalya, Lakshmi, Bhadra, Shobhana, Shyama, Jayantika, Trishamna, Vilasini* are the synonyms of *Haridra* are found.

Its properties has been mentioned as *Katu, Tikta in rasa, Ushna in Virya* and indicated in *Kustha, Kandu, Prameha, Vrana, and Kaphavatashamaka*.

(*Raja Nighantu Pippalyadi varga Shloka 197-199*)

2.4.10. *Sarasvati Nighantu (14th Century A.D.)*^[19]

Haridra has been placed in *Latadi varga* and *Haridra, Rajani, Pinja, Varmi, Tami, Nisha, Ranjana, Kanchani, Ratri* are the synonym given to it.

(*Sarasvati Nighantu Latadi varga Shloka 22*)

2.4.11. *Kaiyadeva Nighantu (15th century A.D.)*^[20]

The other name of this *Nighantu* (8*Varga*) is "*Pathyapathyavibodhaka*" and written by *Acharya Kaiyadeva*.

In this *Nighantu*, *Haridra* is described in *Aushadhi Varga* with following synonyms *Varnini, Gauri, Pita, Romashamulika, Harita, Vaishya, Kanchani, Rajani, Nisha, Pindabhadra, Bhadrakta, Pitangi, Dirgharanga, Pinda, varnavilasini*.

(*Kaiyadeva Nighantu Aushadhi Varga Sloka 1113-1114*)

2.4.12. *Bhavaprakasha Nighantu (16th Century A.D.)*^[21]

This *Nighantu* is a part of *Bhavaprakasha Samhita* and written by *Acharya Bhava Mishra*. There are twenty three *Vargas* of drugs mentioned in this book.

Haridra has been described in *Haritakyadi Varga* and the following synonyms are found in this *Nighantu* - *Kanchani, Pita, Nisha, Varavarnini, Krimighna, Yoshitapriya, Httthavilasini*. Its properties has been mentioned as *Katu and Tikta in rasa, Ushna virya*. It is indicated in *Varnya, Tvaka vikara, Prameha, Shothahara, Pandu, Vranapaha*.

(*Bhavaprakasha Nighantu Haritakadi Varga 38 -40*)

2.4.13. *Nighantu Adarsha (19 Century A. D.)*^[22]

This book was published in *Gujarata*, its author, is *Vaidya Bapalalaji*. He has mentioned all the relevant materials from the different *Ayurvedic* texts as well as modern medical and botanical works.

Haridra in *Arkadi varga* and he gave same name as *Dhanwantari nighantu, Raja nighantu, and Bhavapraksha nighantu*.

(*Nighantu Adarsha Arkadi Varga*)

2.4.14. *Priya Nighantu (20th Century A. D.)*^[23]

This *Nighantu* is written by *Acharya Priyavrata Sharma*. *Haridra* has described in *Shatapuspadi varga*.

Nisha, Kanchani, Pitavarna, Haridra, Sadodvartana, Anganabhi are the synonyms and *Tikta in rasa, Ushna in virya*, and used in *Shitapitta, Tvakavikara and Prameha*.

(Priya Nighantu Shatapuspadi varga Shloka 170)

3. PHARMACOLOGICAL ACTIVITIES

3.1. Anti-inflammatory Activity

The laboratory studies have identified a number of different molecules involved in inflammation that are inhibited by curcumin including phospholipase, lipoxygenase, cyclooxygenase-2, leukotrienes, thromboxane, prostaglandins, nitric oxide, collagenase, elastase, hyaluronidase, monocyte chemoattractant protein-1 (MCP-1), interferon-inducible protein, tumor necrosis factor (TNF), and interleukin-12 (IL-12). The essential oil, containing ar-termerone, as a major component is known to possess anti-inflammatory activity. Ar-termerone is anti-mutagenic in nature and anti-platelet activator. It potentiates antioxidant activity of curcuminoids. Studies on the toxicity and anti-inflammatory properties of curcumin have included in vitro, animal and human studies.^[24-29]

3.2. Hepatoprotective Activity: The ethanolic extract of rhizome contain the flavonoid, curcumin and various volatile oils, including tumerone, atlantone, and zingiberene. It shows a significant hepatoprotective effect when orally administrated. The protective effect is dose - dependent. Turmeric due to direct antioxidant and free radical scavenging activity, indirectly augment I Curcumin down-regulate the inflammatory effects and fibrogenesis of liver.^[30-32]

3.3. Anti-diabetic Activity

In Ayurvedic literature, powder of Haridra is advised in diabetes along with Amlaki churna and honey. It proves to be better dietary supplement of high potential when used with milk. Curcuminoids lower lipid peroxidation by maintaining the activities of antioxidant enzymes like superoxidodismutase, catalase and glutathione peroxidase at higher level. Curcuma longa contains curcuminoids, glycosides, terpenoids and flavanoids. Maximal inhibition of Human Pancreatic Amylase (HPA) was obtained from isopropanol extract and acetone extract which reduces starch hydrolysis.^[33]

3.4. Antiallergic Activity

Glycosides of curcumin (bis-demethoxycurcumin and tetrahydrocurcumin) works in allergic reactions by inhibiting the release of histamine. The antioxidative activities were assessed by measurement of cell-free or cellular radical scavenging. All compounds but diglycosides or bisdemethoxycurcumin analogs distinctly exert anti-oxidative effects. Compounds with potent radical scavenging activities cause decrease in histamine release but with non-potent radical scavenging activities also inhibited histamine release. Curcumin has an ability to inhibit nonspecific and specific mast cell dependent allergic reactions.^[34]

3.5. Anti-carcinogenic Activity

Curcumin has been found to possess anticancer activities via its effect on a variety of biological pathways involved

in mutagenesis, oncogene expression, cell cycle regulation, apoptosis, tumorigenesis and metastasis. Its anti-tumor activity in cancer cells by altering the deregulated cell-cycle via cyclin-dependent, p53-dependent and p53-independent pathways.^[35]

3.6. Cardio protective Activity

The antioxidants in turmeric also prevent damage to cholesterol, thereby helping to protect against atherosclerosis. In fact, the ability of the antioxidants in turmeric to decrease free radicals is similar to that in vitamins C and E. Since the antioxidant activities of turmeric are not degraded by heat (unlike most vitamins), even using the spice in cooking provides benefits. Animal studies show that curcumin lowers cholesterol and triglycerides and circulates. In recent study of atherosclerosis shows, mice were fed diet (turmeric mixed in their food) have 20 % less blockage of the arteries than the mice fed diet without turmeric. In another study, several risk factors for the disease were improved including decrease in cholesterol, triglycerides and free-radical damage.^[36-37]

3.7. Protective role in skin diseases

Curcumin possess the ability to protect the skin from harmful UV-induced effects by displaying antioxidant, free radical scavenging, anti-inflammatory, antimutagen and anti-carcinogenic properties.^[38-39]

3.8. Antifungal Activity

Curcuma longa leaves proves a good antifungal agent against human pathogenic fungi various in vitro and in vivo viz, strong fungicidal action, long shelf-life, its tolerability of heavy inoculum density, thermo stability, broad range of antidermatophytic activity and absence of any adverse effect.^[40]

3.9. Protective role in Alzheimer's disease

It reduced oxidative damage and reversed the amyloid pathology in an Alzheimer's disease transgenic mouse. Curcumin's powerful antioxidant and anti-inflammatory properties reduces Alzheimer's disease symptoms.^[41]

Classical Medicinal Uses

1. Diabetes - Haridra powder + honey + Amalaka juice. (C.Ci.6/26, Su.Ci-11/8, A.S.Ci.14/5, A.H.Ci.-12/5)
2. Anaemia & Haridra – Triphala + Ghee + honey. (Su.U-44/17)
3. Jaundice + Haridradi ghrita (C. Ci. 16/53)
4. Cough - Powder + Vasa juice + milk. (SB.4/333)
5. Bronchial Asthma- Haridra Ash + honey. (SB.4/375)
6. Inhale dhuma of Haridra wick. (CS.Ci.17/77)
7. Calculus - Haridra + jaggery (equal parts). (BS. Ashmari-45)
8. Piles- Paste of Haridra powder + latex of Snuhi or Pippali. (C.Ci-14/52)
9. Vatavyadhi- Fine powder + oil for 3hours then oil is extracted and applied.

10. Freckles- Paste of *Haridra* + Rakta chandan + buffalo's milk should be applied on face. It removes the dark shade. (R.R.S.24/45)

Chemical constituents^[42]

According to database of CCRAS

1. Curciminoids - apprx.6% (Major chemical constituents)
2. Yellow coloring principle curcumin constitutes 50-60%,
3. Essential oil (2-7%) with high content of bisabolane derivatives
4. Minor component like- Desmethoxycurcumin, Bidesmethoxycurcumin, Dihydrocurcumin, Phytosterols, Fatty acid, Polysaccharides

4. DISCUSSION

Curcuma longa (*Haridra*) is one of the best herbal medicine which can be used as a single drug or compound form in many disease not only in present time but since ancient times. *Haridra* with amla and honey is stated in all types of *prameha* by *Acharya Charaka*. *Haridra* is used for the treatment of allergy, *Madhumeha* (DM-2) and various skin disorders. *Haridra* is known as Indian Saffron, used as spice in Indian and traditionally used in opportune occasions. In Ayurveda, its uses are well documented for the treatment of respiratory disorders like asthma, allergy as well as for liver disorders, rheumatism, diabetic wounds, cough and sinusitis. Recent researches revalidate the traditional uses of *Haridra* in various systems by in vitro and vivo studies. Hence it can be used for the preparation of various formulations for the treatment of inflammation, wound and microbial infections alone or associated with conditions like diabetes, tumor and cancerous abnormal growth. *Haridra* have high therapeutic range in disease related to respiratory system and skin. It is one of the basic constituent of cosmeceutical products due to its anti-oxidant and free radical scavenging profile added with anti-inflammatory and anti-tumor activity. It is also used as a nutraceutical product in diabetes. To meet the rising demand, *Haridra* is cultivated in India and trading is done on large scale. This review will help to reveal the uses and action of *Haridra* described in our classical literature as well as in recent researches to validate its traditional uses. This review underscores the significant scope for pharmaceutical industries to innovate and formulate diverse herbal, herbo-mineral, and polyherbal products enriched with the active phytoconstituents of *Haridra*, paving the way for advancements in nutraceuticals and cosmeceuticals..

5. CONCLUSION

In view of the above information, it may be inferred that Turmeric (*Haridra*) has a wide range of therapeutic applications. It has a wide range of activities with specific effects and is safe to use on a daily basis. In Hinduism, turmeric holds significant cultural, spiritual, and medicinal value. Turmeric is a staple spice in many cuisines, particularly in Indian, middle eastern and

southeast Asian cooking. Turmeric rhizome powder is also known as turmeric powder is used in various ways like curries and gravies, soups and stews etc. Turmeric has been used for centuries in traditional medicine to treat various diseases. Turmeric has many phytoconstituents, which are accountable for its effectiveness. Curcumin is however one phyto constituent, a nutraceutical ingredient with a variety of pharmacological actions that have been shown in both laboratory and clinical studies. It has anti inflammatory, anti-oxidant, anti-allergic, anti-cancer, anti hyperglycaemic etc., properties. There are many Scientific evidences available to prove the efficacy of *Haridra* (*Curcuma longa* Linn.).

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