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A CRITICAL REVIEW OF CHAKRAMARDA (CASSIA TORA L.) RELATED WITH SKIN DISEASES

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ABSTRACT

Ayurveda is an Ancient science of Medicine with its own basic traditional values and Principles. *Ayurveda* is an Indian system medicine having abundance of Medicinal treasures of herbs and their formulations, which promotes healthy life and Cures diseases. *Chakramarda (Cassia tora Linn.)* is one of the Important Medicinal Drug which is mentioned in the *Ayurvedic* Literature. There are many Clinical references which are given in Classical Literatures which were shown in Classical texts that it has been cure various Skin Diseases. In *Ayurveda* Skin diseases comes under heading of *Kushtha*. In present era due to change in dietary habits, daily routine and increase in Pollution there is increase in incidence of various Skin diseases. *Chakramarda* has *Madhur Rasa, Katu Vipak, Ushna Veerya* also having *Krimighna* and *Kushtaghna* property which helps to cure *Kushtha*. The aim of this paper to throw light on *Chakramarda* can be drug of choice in Skin diseases by using classical literature.

KEYWORDS:– *Chakramarda, Cassia tora, Kushtha,* Skin Diseases.

INTRODUCTION

Chakramarda (Cassia tora Linn.) is an ancient medicinal plant mentioned as *'Chakramardak'* in *Vedic* time period.[1] Commonly named as Ringworm plant. *Chakramarda* means destroyer of Ringworm or useful in Ringworm & skin diseases. *Aacharya Charak* has mentioned *chakramarda* in *Shamivarga* & *Shaka varga, Aacharya Vagbhat* has also mentioned *chakramarda* in *Shaaka Varga*. *Aacharya Sushrut* has mentioned it for *Urdhwabhaghar* in *Sanshodhan Samshan Adyay*. According to *Bhaprakash*

Nighantu it has mentioned in *Shaak Varga* having properties *Laghu, Ruksha, pittavatahara, Kapha Swashara, krimihar* but seeds of *chakramarda* is *Ushna.*[2] Seed of *chakramarda* used in Skin Diseases for ringworm and itch. Its action contains *kaphavatashamana* (alleviate vitited *kapha* and *vata dosha*), *swasaghna*, *hridya*, *kusthaghna* (treats skin disorders), *dadrughna* (destroys ringworm), *krimighna* (removes worm infestation), *kandughna* (antipruritic), *vishaghna* (removes toxic particles).

Botanical description[3]

Annual herbs or undershrub, 1-2 m high. Leaves compound, Peripinnate, Leaflet 3-pairs, ovate-oblong. Flowers bright yellow, usually in pairs, axillary. Pods long, Slender, obliquely septate, 15-25 cm long. Seeds rhombo-hedral, green, 25-30.

Botanical Name-*Cassia tora Linn*.

Natural order- *Caesalpiniaceae*

Vernacular names[4]

English- Foetid cassia, Ring worm plant

Hindi- Chakunda, Chakravat

Bengali- Chakunda, Panevar

Gujarati- Kawario, Konariya, Kunvadio

Kannada - Tagace, Taragasi, Gandutogache

Malayalam- Chakramandarakam, Takara

Marathi- Tankli, Tarota, Takla

Punjabi- Chakunda, Panwar, Pawas,Pawar

Tamil- Togarai, Senavu, Vindu, Ushit, togarai

Telgu- Tantemu, Tagirisa, Tantiyamu, Chinnakasinda, Tellakasinda, Tagarisha-chettu

African- Mwango, Swahili

Arabi- Sanjsaboyah, Kulb

Burmese- Dan-gyme, Dang-we,Kunje

Kashmiri - Haedma

Konkani – Daddupan

Oriya- Chakunda

Persian- Sangasaboyak, Sangesabuya

Rajasthani - Chakuada, Panwar, Pumaria

Santhal – Chakaoda arak

Singhalese- Peti-tora

Synonyms[5]

Edgaj, Gajakhya, Meshavya, Edhasti, Vyavartak, Chakragaj, Punnad, Punnat, Vimardaka, Dadrughna, Arvat, Chakravya, Shukranashan, Drudhbeeja, Prapunnat, Khajuraghna, Meshaksha, Kushtaha, Punnat, Prapunnat, Kridavartak, Dadrughna, Pamagati, Shukanama, Vartula Prapunnat, Dadrughna, Meshlochan, Padnad Chakramarda, Edgaja, Meshaakshikusum, Prapunnat, Tarvat, Chakravya, Chakri.

Properties *(Gunadharma)*

Guna- Laghu, Ruksha

Rasa- Katu,

Veerya-Ushna,

Karma- Lekhan, Kushthaghna Krimighna, Yakritottajaka, Rechana, Hridya, Raktaprasadan, Kaphanissarak, Medohara

Doshakarma- Kaphavatshamak

Dhatu- Rakta, Meda

Mala-Purisha

Beeja- Balya, Deepan, Twakdoshhar

Patra- Virechan, Krimihar, Paryayik jwara

Parts used- Seeds, Leaves, Root, *Panchang, Twak*

Flowering – Occurs in rainy season.

Fruiting- in winter season

Taxonomical classification[6]

Kingdom- Plantae

Division- Magnoliposida

Class- Magnoliopsida

Subclass- Rosidae

Order- Fabales

Family- Fabaceae

Subfamily- Caesalpiniodeae

Tribe- Cassieae

Subtribe- Cassinae

Genus- *Cassia*

Species- *S. tora*

Classification of drug as per *samhita* & *Nighantu* as follows

Sr. No	Text book	Name of *Varga*
1.	*Charak Samhita*	*Shaka, Shami-Dhanya*
2.	*Sushrut Samhita*	*Sanshodhana, Shamniya*
3.	*Vagbhata*	*Shaka Varga*
4.	*Amarkosh*	*Vanaushdhi*
5.	*Dhanvantri Nighantu*	*Karveeradi Varga*
6.	*Kaiyadeva Nighantu*	*Aushadhi Varga*
7.	*Raj Nighantu*	*Shatavhyadi Varga*
8.	*Madanpal Nighantu*	*Shaka Varga*
9.	*Bhavprakash Nighantu*	*Haritkyadi Varga*
10.	*Nighantu Aadarsh*	*Putikaranjadi Varga*

Pharmacological aspect of *chakramarda* as per different classical texts:

Sr. No	Name of book	*Guna*	*Rasa*	*Veerya*	*Vipak*	*Doshghanata*	*Rogghanata*
1.	*Charak Samhita*	*Guru, Ruksha*	*Madhur*	*Sheet*	*Madhur*	*Kaphahara*	*Kushtha, Dadru*
2.	*Sushrut Samhita*	–	–	–	–	–	*Krimi, Dadru, Kushtha, Pama , Shwitra, Nadidushta vrna, Gandmala, Bhagndar*
3.	*Ashtanga Samgraha & Sartha Vagbhat*	–	–	–	–	–	*Kushtha, Dadru, Krimi, Dushtanadi Vrana, Twakdosha, Pama, Sidhma, Mandala , Kandukushtha, Kotha, krimi, Vicharchika, Shwitra*
4.	*Dhanwantri Nighantu*	–	*Katu*	*Ushna*	–	*Vatakaphahara*	*Dadru, Kandu*
5.	*Kaiyadeva Nighantu*	*Ruksha, Sheet*	*Swadu*	–	–	*Pittavatashamak*	*Krimi, kushtha, Jwara, Shwas, Kaas, Prameha, Aruchi*
6.	*Raj Nighnatu*	*Teekshna*	*Katu*	–	–	*Vaatkaphara*	*Vrana, Kandu, Kushtha, Arati, Dadru, Pama*
7.	*Shaligram nighantu*	*Laghu, Ruksha*	*madhur Phala- Katu*	–	–	*Pittavatahara*	*Phala- Kushtha, Kandu, Dadru, Visha, Krimi,*

							Gulma, Shwas, Kaas
8.	*Madanpal Nighantu*	*Laghu, Ruksha*	–	*Phala-Ushna*	–	*Pittavatashamak Shaka-Kaphakar*	*Kushtha, Kandu, Dadru, Krimi, Shwas*
9.	*Bhavprakasha Nighantu*	*Laghu, Ruksha*	*Madhur*	*Sheet Beej-ushna*	–	*Kaphavatghna, pittaghna*	*Kushtha, Dadru, Krimi*
10.	*Yogaratnakar*	–	–	–	–	–	*Sidhma, Dadru, Kitibha, Pama, Kapalkushtha, visha, Kandu, Raksa, Pama, Vicharchika, Kachhu, Visarpa, Vispotaka, neela, Vyanga*
11.	*Chakradutta*	–	–	–	–	–	*Kushtha, NadiVrana, Dushta Vrana, Pama, Vicharchika, Dadru, Kandu, Neeleeka, Vyanga, Visphotak, Nyachhaya, Kilas, kitibha, Shwitra, Kachhu, Krimi, Sidhma,*
12.	*Sharangadhar Samhita*	–	–	–	–	–	*Pama, Dadru, Vichachika, Shwitra, Shiroshoola, Updansha, NadiDushtavrana, Bhagndar, Kushtha, Gandmala*
13.	*Bhaishjya ratnawali*	–	–	–	–	–	*Kandu, Kushtha, Dadru, Krimi, Sidhma, Dadru. Mandal kushtha, Pama, Vicharchika*

Chemical constituents[7][8]

Parts	Constituents
Leaves	Anthraquinone glycosides (chrysophanol, rhein, emodine, physion, Obtusin, chryso-obtusin, chryso-obtusin-2-O-β-D-glucoside, obtusifolin and chrysoobtusifolin-2-O- β -D-glucoside) and Flavonoids.
Leaves & Seed	Amino acids, fatty acids, aloe-emodin, chrysophanol, emodin, rhein and sitosterol.
Stembark	3,5,8,3',4',5-hexahydroxy flavone, hydroxycoumarin, auraptenol, euphol,basseol,emodin,rhein,palmatic,isostearic,behenic acids,ethyl arachidate and **β**-sitosterol
Seeds	Emodin, chrysophanol, physion, rubrofusarine, two glycosides namely 8-Hydroxy-3-methyl anthraquinone -1- β –gentiobioside & rubrofusarin -6- β -gentiobioside and sitosterol.
Seed oil	Palmitic, stearic oleic, linoleic and lignoceric acids
Flower	Kaemferol glucoside
Root	Methylanthraquinone-1-**β**-gentiobioside,a naptho-**α**-pyrone, physcion, rubrafusarin, its 6-**β** –gentiobioside, toralactone 1, 3, 5- trihydroxy-6, 7-dimethoxy-2-methylanthraquinone, **β**-sitosterol, leucopelargonidin3-0-**α**-L-rhamnopyrnoside

Formulations- *Dadrughni vati, Dadrugajendrasingha rasa, Maadhyammanjisthadi kvatha, Brihatamarichadya taila, Somaraji taila, trinaka taila, Kandarpasara taila, Mahatrinaka taila, Sarvatobhadra lauha.*

Doses-Seeds-1-3 gms, Leaf juice-3-6ml

Substitutes &Adulteration-*Cassia occidentalis Linn*.is used as Substitute of *Cassia tora* & *Cassia tora* seeds are as substitute for coffee.

Propagation and Cultivation- it can be easily propagate through seeds.

Habitat & Distribution- Widely throughout India as a weed, which is very common in rainy Season and wayside waste places.

Contraindications: Pregnancy, Low blood pressure, Diarrhoea

Drug Interactions: Squill, digoxin, warfarin, diuretics.

Modern Pharmacological activities of *Cassia tora*:

Antimicrobial activity

Antimicrobial study of ethanolic extract (0.15mg) and aqueous extract (0.31mg) of *Cassia tora* leaves were investigated by against *Pseudomonas aeruginosa, Lactobacillus, Salmonala typhi, P.vulgaris, Bacillus subtilis, Staphylococcus aureus, Streptococcus pneumoniae, E.* coli

and *Enterobacter bacterias* by using filter paper disc method. Ethanolic extract show less activity as compared to aqueous extract but show maximum activity against *Staphylococcus aureus* and *Lactobacillus* as comparative to standard ciprofloxacin.[9]

Antioxidant activity

In vitro Antioxidant activity of the methanolic extract of leaves of *Cassia tora* was investigated by using experimental parameters which were DPPH scavenging activity, total antioxidant assay activity, scavenging superoxide anion radicals, nitric oxide radical, hydrogen peroxide scavenging capacity and total phenolic content. Reduction of the DPPH radicals was found in concentration- dependent manner. Connection between the antioxidant activity and phenolic content was found in this study, indicating that phenolic compounds could be major contributors to antioxidant activity.[10]

Anti-inflammatory activity

In-vivo anti-inflammatory activity of the methanolic extract of *Cassia tora* leaves against carrageenin, histamine, serotonin and dextran induced rat hind paw oedema. The result of this study, *cassia tora* was found having significant anti-inflammatory activity against all these agents. The maximum inhibition of oedema was found at a dose of 400mg/kg. [11]

Antifungal activity

Antifungal activity of the dealcoholized extract of *Cassia tora* leaf extract against different fungal organisms. Result of this Study showed the significant inhibition growth of *C.albicans, A.niger, S.cerevistiae*, and *T.mentagophytes* when crude leaf extract was tested by turbidity and spore germination methods in concentration dependent manner.[12]

Hepatoprotective activity

In-vivo hepatoprotective effects of methanolic extract of dried powder leaf of *Cassia tora* against carbon tetra chloride induced liver damage in albino rats in both sexes approximately weighing 500 gm. This study showed the hepatoprotective effect of *Cassia tora* due to effective free radical scavenging property.[13]

Purgative activity

In-vivo purgative study of the methanolic extract and aleo-emodin isolated from the *Cassia tora* leaves in male wistar rats weighing between 150-180 gm. The results achieved were comparable to that of standard purgative drug sennoside.[14]

Anthelmintic activity

Anthelmintic activity of alcohol and aqueous extracts from the seeds of *Cassia tora* against *Pheretima posthuma* and *Ascardia galli*. Each extract was used in concentration of 25, 50 and 100 mg/ml which involved the determination of time of paralysis and time of death of the worm. Piperazine citrate as a standard reference and distilled water as a control in same concentration as that of extract was used. The alcoholic seed extract of *Cassia tora* demonstrated paralysis and also death of worms in a less time as compared to piperazine citrate especially at higher concentration of 100 mg/ml, though water extract also showed significant activity.[15]

CONCLUSION

Chakramarda is easily available medicinal plant throughout India, shows remarkable therapeutic activities in skin diseases. It also exhibits Antimicrobial activity, Antioxidant activity, Anti-inflammatory activity, Antifungal activity, Hepatoprotective Activity, Purgative activity, Anthelmintic activity and much more besides these, in numerous preclinical and clinical studies has been proved to be effective in tinea manifestation. Thus, it is the essential to conduct further clinical trials with large number of samples to explore, establish, validate and authenticate the therapeutic benefits of *Chakramarda*.

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