

Ricinus Communis Significant role in Skin Disorders

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ABSTRACT :-

Ayurveda is the only safe medical science in the world which plays a vital role in improving the health level of people. Many plants have been mentioned in an ayurveda which work directly on the disease and provide relief to the patient That disease very soon. Similarly, In ayurveda medical science Ricinus communis or castor plant have been described as the best medicine for skin disorder. Ricinus communis or castor plant have many properties and it works on disease according to Its active principle and it quickly gives relief to the patient from skin disorder. The medicinal properties present in the castor plant play an important role in destroying all types of infection such as bacterial, fungal and viral. It cures the cause of skin disease and also generate the healing power of the skin due to Its medicinal properties. Ricinus communis or castor plant is beneficial in all skin disorders.

Keywords :- Ricinus communis, Skin disorders, Kushtha, Twak Vikar, Ayurveda.

I. INTRODUCTION :-

Traditionally a large number of plants are used for the management of skin disorders (kushtha). The word Kushtha is used for skin disorders in Ayurveda [1]. According to ayurveda medical science kushtha doesn't mean only leprosy

and leucoderma. It describes the majority of skin disorders.

According to acharya vagbhata has defined the kushtha roga as that which causes vaivarnya and dushti to the twacha. the disorder which disfigured the body is called kushtha (skin disorders).this causes deformity ranging from twacha to inner dhatus (Body Tissue). In Charak samhita, kushtha is caused when vitiation in the factors like Twacha, Rakta, mansha, Ambu (Lasika) and Tridoshas (vata, pitta, kapha) of the body [2]. These seven dravya, Tridoshas (vata, pitta, kapha) and Dushya (Twacha, Rakta, mansha, Ambu) are responsible for the origin of kushtha. when it becomes chronic, it vitiated the asthi, majja, sira, dhamni as well. Ricinus communis or castor plant is one of the herb is still widely used herbal medicine in skin disorders. In bhavpraksh nighantu, erand is mentioned as kushthaghana and erand Patra as vata kapha krimi vinashnama [3]. Erand oil is mentioned by acharya sushrut as twachya [4]. Castor plant can be used both externally and internally for skin disorder.

Approach and perspective :

Classification of Ricinus Communis:

Kingdom: Plantae

Phylum: Spermatophyta

Subphylum: Angiospermae

Class:Dicotyledonae:
Order:Euphorbiales
Family:Euphorbiaceae
Genus:Ricinus
Species:communis

Morphology: An evergreen, glabrous shrub, 2-4.5 m height. Leaves- palmately, 7- many lobed, lobes oblong to linear, acute or acuminate. Flowers-in large terminal subpanicked racemes; in a dense globose head of branched filaments and anthers; yellowish. Fruits- capsules, globosely oblong, smooth or echinate. Seeds- oblong, smooth, mottled. Flowers and fruits occur almost throughout the year.

Rasa panchaka (Classical properties):

Ras- Madhur, Katu, Kshaya.

Guna- Snigdha, Tikshna, Sukshma.

Virya-Ushna.

Vipaka- Madhura.

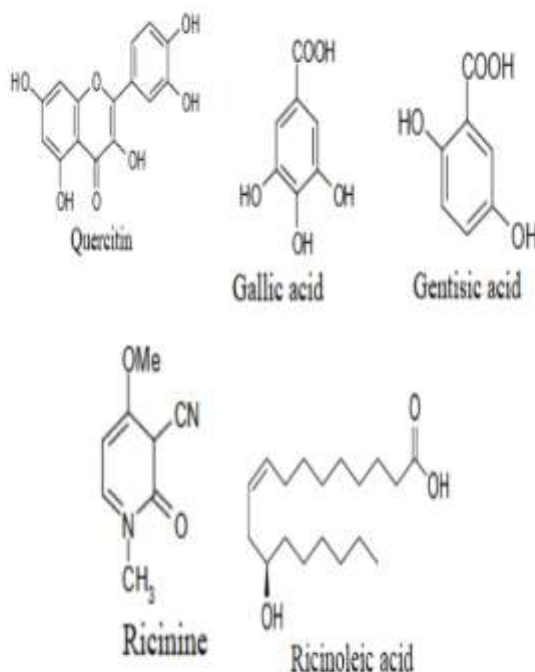
Karma-Vatasamak, kaphashamak, krimi, mutrakriccha, arsh-gulma-basti shulhara, yakrit-pliha-udar-vibandhamavathar, amapachak [6].

Parts used: Roots, seed and leaves.

Doses: Root bark paste - 3 to 6 gm , Root decoction -50 to 100ml, leave paste - 1 to 6 gm , leave juice - 10 to 20 ml , seed- 2 to 6 in number , Oil - 20 to 40 ml .

Phytochemical constituents:

A phytochemical study on *R. communis* revealed the presence of steroids, saponins, alkaloids, flavonoids and glycosides. The dried leaves of the plant showed the presence of two alkaloids- ricinine (0.55%) and N-demethylricinine (0.016%) and six flavones glycosides kaempferol-3-O-β-D-xylopyranoside, kaempferol-3-O-β-D-glucopyranoside, quercetin-3-O-β-D-xylopyranoside, quercetin-3-O-β-D-glucopyranoside, kaempferol-3-O-β-rutinoside and quercetin-3-O-β-rutinoside. The monoterpenoids (1,8 cineole, camphor and α-pinene) and a sesquiterpenoid (β-caryophyllene), gallic acid, quercetin, gentisic acid, rutin, epicatechin and elingic acid are major phenolic compound isolated from leaves. Indole-3 acetic acid has been extracted from the roots. The seeds contain 45% of fixed oil, which consists of glycosides of ricinoleic acid, iso ricinoleic, stearic and dihydroxystearic acids and also lipases and a crystalline alkaloid, ricinine [7,8].



Pharmacological properties:

Anti inflammatory activity: Anti inflammatory effect of the leaves and root extract were studied in wistar albino rats and paw oedema formation due to sub plantar administration of carrageenan, characterizing the cellular events of acute inflammation. The 250 and 500 mg/kg dose of methanolic leaves extract possess protective effect in prevention of cellular events during oedema formation and in all the stages of acute inflammation. The anti-inflammatory activity of methanolic extract was due to the presence of flavonoids. The effect of petroleum ether extract of root of *R. Communis* (150 mg/kg p.o) has been investigated against Carrageenan, 5-Hydroxytryptamine, Dextran, Bradykinin and Prostaglandin E, induced rat's hind paw oedema. The extract exhibited significant antiinflammatory activity against all the phlogistic agents except PGE. The anti-inflammatory activity was compared with standard drugs such as Phenylbutazone and Betamethasone, both in acute and chronic experimental models of inflammation in albino rats [9,10].

Analgesic activity : Aqueous extract of plant showed, presence of secondary metabolites such as alkaloid, flavonoid, saponin, terpenoid, tannin, carbohydrate and glycoside in root of both cultivated and wild varieties[11]. Alkaloids have been found to be responsible for both analgesic and anti-inflammatory actions in some natural products. Flavonoids are known to target prostaglandins which are involved in the late phase of acute inflammation and pain perception. Saponin and terpenoid have also been reported to inhibit histamine release in vitro. To evaluate the analgesic property of aqueous root extract of wild and cultivated varieties of *R. communis* using the tail flick method of rats by oral pre-treatment with wild variety of plant caused a profound significant analgesia in the treated rats and cultivated variety of *R. communis* caused a moderate analgesia in the treated rats. Above procedure consists of behavioral methods that have been developed to study nociception in animals. Animal response in these tests is usually integrated at the lower levels in the central nervous system, thus, giving information about the pain threshold.

Antioxidant activity: The methanolic extract showed significant free radical scavenging activity by inhibiting lipid peroxidation initiated by carbon tetrachloride and ferrous sulphate in wistar albino rats liver and kidney homogenates. The extract enhanced free radical scavenging activity of stable radical 2,2-diphenyl-1picryl-hydrazyl (DPPH radical hot), nitric oxide and hydroxyl radical in

vitro assay methods. *R. communis* seed extracts produced the antioxidant activity by using lipid peroxidation by ferric thiocyanate method and free radical scavenging effect on 2,2-diphenyl-1 picrylhydrazyl radical (DPPH) and hydroxyl radical generated from hydrogen peroxide. The high antioxidant activity of the seed which produce antioxidant activity are methyl ricinoleate, ricinoleic acid, 12-octadecadienoic acid and methyl ester and stem and leaves extracts also produce antioxidant activity due to the presence of flavonoids in their extract [12].

Antitumor activity: It has a very potent poison ricin, has been shown to possess antitumor qualities and has been used in cancer research and chemotherapy during recent years. One of the most promising uses of ricin is in the production of immunotoxins, where the protein ricin is joined to monoclonal antibodies. The antibodies are produced in a test tube (in vitro) and have protein receptor sites that recognize the specific target cells of a tumor. The resulting ricin-antibody conjugate is called an immunotoxin. By arming these antibodies with ricin, the deadly toxin can be carried directly to the site of the tumor in a cancer patient. Thus, ricin can destroy the tumor cells, without damaging other cells in the patient [13].

Antidiabetic activity: Administration of the effective dose of *R. communis* to the diabetic rats for 20 days showed favorable effects not only on fasting blood glucose, but also on total lipid profile. *R. communis* seemed to have a high margin of safety as no mortality and no statistically significant difference in alkaline phosphatase, serum bilirubin, creatinine, serum glutamate oxaloacetate transaminase, serum glutamate pyruvate transaminase and total protein was observed even after the administration of the extract at a dose of 10g/kg body weight. Thus, *Ricinus communis* seems to have a promising value for the development of a potent phytomedicine for diabetes [14].

Purgative activity: Castor oil was one of the old-fashioned remedies for everything from constipation to heartburn widely used since ancient time and is still used to this day; is the most valuable laxative in Ayurveda. It is considered to be fast, safe and gentle, prompting a bowel movement in 3 -5 hours, affecting the entire length of the bowel, but not increasing the flow of bile, except in very large doses. It is recommended for both the very young and the aged. It is also used to clear the digestive tract in cases of poisoning. It should not be used in cases of chronic constipation [15].

Mechanism of action of Ricinus Communis in skin disorders :

Ingestion of castor Oil

(Ushna , guru , snigdha , tikshna , suksma)

Potent gunas or quality

Deepan at the level of Amaashaya

Aam pahchan at the level of dhatu

Srotash rodha har at the level of channel of body

(It acts as a cleansing agent in respect of the internal channel of body).

Due to dominancy of prithvi and jala mahabhoota

Coming into pakvashaya by initiated Apana vayu activity

Expelling out of dosha via adho bhaga (virechana karma)

Pacifying of pitta Pradhan tridosha

Due to Ashray - Ashrayi relationship of pitta and Rakta dosh , Rakta dosha also gets pacified

Skin disorder Relief .

External application:

Topical application of Erand Patra kalk and castor oil

Pacifying of bhrajaka pitta

Skin disorder relief

II. CONCLUSION :-

Ricinus communis or castor plant is a widely traditionally used and potent medicinal plant amongst all the thousands of medicinal plants.

There are no side effects from the use of castor plants in skin disorders . Therefore, this should be used in all types of skin disorders globally.

References:-

- [1]. Kaviraj Atridev Gupta ,Ashtang Samgraha, Vidhyotini Hindi commentary , Vol - 1 , kushthashwitrakrimi nidan Adhyay 14, Chowkhamba Krishnadas Academy , Varanasi Reprint 2005, ed, Shloka , 14/6, page no. 395.
- [2]. Shastri P.K. and Chaturvedi G.N., Charak Samhita, Vidhyotini Hindi Commentary, Vol-2, Kushtha chikitsa Adhyaya 7, Chaukhamba Bharati Sansthan, Varanasi Reprint 2021, ed, Shloka, 7/9, Page no. 223.
- [3]. Vishwanath Dwivedi Shastri ,Bhavaprakasha Nighantu, vol-1, Guduchyadi varga, shukla Rakta Erand, Motilal Banarsidass ,Delhi Reprint 2015 ,ed, Shlok, 60 , page no. 161.
- [4]. Kaviraj Dr. Ambika Dutt shastri , Sushrut Samhita , Ayurveda Tattva Sandipika Hindi Commentary, vol-1 drava dravya vidhi Aadhya 45, chaukhamba Sanskrit Sansthan, Varanasi Reprint 2014, ed, Shlok , 45/114, Page no. 230.
- [5]. Gupta, M.K., Sharma, P.K. and Ansari, S.H. (2006). In vitro antioxidant activity of the successive extract of Ricinus communis L. leaves. International journal of plant sciences, 1(2): 229-231.
- [6]. Nadkarni KM: Indian Materia Medica. Popular Prakashan Mumbai Edition 1976; 2(1): 1142. 6. Jena J and Gupta A: Ricinus communis Linn: A phytopharmacological review. International Journal of Pharmacy and Pharmaceutical Sciences 2012; 4(4): 25-29
- [7]. Ladda, P.L. and Kamthane, R.B. (2014). Ricinus communis (castor): an overview. Int. J. of Res. in Pharmacology & Pharmacotherapeutics, 3(2): 136-144.
- [8]. Ladda, P.L. and Magdum, C.S. (2012). Evaluation of anti tumor activity of Ricinus communis L. by proportion of nra. and bact.alert method. International journal of pharmacy and pharmaceutical sciences, 4(3): 474-478.
- [9]. Morya, G.C.K., Kumari, G. and Kumar, G. (2016). Indigenous knowledge on medicinal plants of Siwan district of Bihar, India, A paper presented in National Conference on Science for Rural India-2016 on 30-31 January 2016 at B.R.D.P.G. College, Deoria, organized by Swadeshi Vigyan Sansthan-Vijnana Bharati U.P. Chapter-III, Deoria (U.P.), India, p.23.
- [10]. Morya, G.C.K., Pandey, A. and Mishra, H.S. (2014). Therapeutic efficacy of Erand (Ricinus communis Linn.) on Vata vyadhi, A paper presented in National Seminar on Vata Vyadhi on 14 December 2014 at Rotary Club, Bareilly, organized by All India P.G. Association, Bareilly (U.P.), India.
- [11]. Pandey, K.N. & Chaturvedi G.N. (Ed.) (2009). Charak samhita of agnivesh-vidyotani hindi commentary (CS.Su.1.57). Chaukhamba Bharati Academy, Varanasi, India, pp.32.



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- [12]. Pandey, K.N. & Chaturvedi G.N.(Ed.) (2009). Charak samhita of agnivesh-vidyotani hindi commentary (CS.Su.12.8). Chaukhamba Bharati Academy, Varanasi, India, pp.246.
- [13]. Pandey, K.N. & Chaturvedi G.N.(Ed.) (2009). Charak samhita of agnivesh-vidyotani hindi commentary (CS.Su.25.40). Chaukhamba Bharati Academy, Varanasi, India, pp.246.
- [14]. Sharma, P.V. (2006). Dravyagun vigyana vol-2 (vegetative drugs). Chaukhambha Bharati Academy, Varanasi, India, p.60.
- [15]. Shokeen, P., Anand, P., Murali, Y.K. and Tandon, V.(2008). Anti diabetic activity of 50% ethanolic extract of Ricinus cummunis and its purified fractions. Food and Chemical Toxicology, 46: 3458-3466.