JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

A REVIEW ON ERANDA (RICINUS COMMUNIS LINN.) A POPULAR HERBAL DRUG WITH MULTIPLE BENEFITS

Dr Ashok Bingi, Mallya Suma V

PhD scholar, Associate professor, Department of Dravyaguna, SDM College of Ayurveda, Kuthpady, Udupi.

Corresponding Author:

Mallya Suma V

Associate professor, Department of Dravyaguna, SDM College of Ayurveda, Kuthpady, Udupi.

Abstract:

Eranda (*Ricinus communis* Linn.) is an important medicinal plant where all parts of this drug area used in different pathological condition. The seeds are said to be purgative, leaves used as analgesic, anti-inflammatory. The roots are particularly indicated as *Vrishya* and *Vatahara* ie analgesic and aphrodisiac. *Eranda* (*Ricinis communis* Linn) a popularly used herbal drug in *Ayurveda* since centuries. It is a glabrous shrub or almost small tree 2-4 m high, belonging to family *Euphorbiaceae,* found throughout India, mostly growing wild on waste land and also cultivated for its oil seeds. Plants are the largest source of the medicine; their activities are attributed for the various phytochemical constituents what they contain. Herbal drug collection, storage, proper utilization is a measure factor in therapeutics. Proper literature review collected in this paper helps in further clinical practice or researches.

(Key words: *Eranda*, *Ricinus communis* Linn., Vrishya, Vatahara, therapeutics

Introduction:

Eranda (*Ricinis communis* Linn) a popularly used herbal drug in *Ayurveda* since centuries .It is a glabrous shrub or almost small tree 2-4 m high, belonging to family *Euphorbiaceae,* found throughout India, mostly growing wild on waste land and also cultivated for its oil seeds. Different parts of the plant are found to be used in various therapeutic condition; like leaves are best *swedopaga*, seeds and seed oil are said as *rechaka*(purgative), etc .Apart from this roots of *Eranda* (*Ricinis communis* Linn) are mentioned as best *Vrishya* and *Vatahara* by *Acharya*

Charaka and *Vagbhata*. The roots of this drug are used in many *Vathahara basti yogas, Udararoga, vatavyadhi, vatarakta and Amavata.*

Methodology

Ricinus communis Linn,is a tall glabrous branched shrub of almost a small tree, 2-4 m high, the stem and branches green when young but turning grey and getting covered with thin greyish brown bark, when mature. Leaves; large, alternate, long petiolate, stipulate, palmately veined, broad,nearly orbicular 7-10 or more lobed. Flowers are sub-panicled racemes that terminate the main axis and branches; flowers very large, monoecious. Fruits are globose or globular oblong explosively dehiscent three seeded capsule 1.2 to 2cm, long, septicidally dehiscent or splitting in to three 2-valved cocci. The fruit when young is green and usually covered with fleshy prickles. Seeds carunculate ,oblong , 1-1.5cm long with smooth hard mottied crustaceous testa and oily or fleshy endosperm.

Ricinus communis is indigenous to India and Africa but it is diffused now over all tropical and sub-tropical countries. In India the plant is found throughout the hotter parts of the country, cultivated in the fields and gardens, also frequently found wild near habitations, roadsides and on wastelands.

Rakta Eranda and shweta Eranda are two types mentioned by Nigantukaras according to the colour of stem and appearance of plant. All parts of plant are used in medicine.

Table 1. Synonyms of Eranda (*Ricinus communis* Linn.)

Gramasch	Growing in villages
Vardhanam	Growing fast
Ruchaka	Beautiful
Gandharava hasta	Leaves resemble hands of Gandharva
Panchangula	Five lobed leaf
Deergha danda	Long petiole
Vyaghra puchcha	Long yellow inflorescence
Chitrabeeja	Seeds with mottled appearance

Table 2 Rasapanchaka of *Eranda (Ricinus communis* Linn.*)*

		Ca	Su	Ah	Dn	Rn	Bp	Kn	Gn	Hp	Sn	Dy	Dp
RASA	Madhura	+	+	+	+		+	+	+	+	+	+	+
	Tikta			+	+	+							
	Katu		+			+							+

	Kasaya		+				+						+
GUNA	Guru	+	+	+			+	+	+	+		+	
	Snigdha												+
	Tekshna		+					+					+
	Sukshama										+		+
	Sara			+			+	+					
	Pichila						+	+					
VEERYA	Ushna	+	+	+	+	+	+	+	+	+	+	+	+
VIPAKA	Madhura		+				+			+	+	+	+

TAXONOMICAL POSITION

Kingdom - Plant

Division - Phanerogam

Sub-division - Anglospermae

Class - Dicotyledonae

Sub-class - Monochlamydeae

Family - Euphorbiaceae

Genus - Ricinus

Species - communis

Chemical constituents:

A phytochemical study on Ricinus 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, quercetine-3-O-ß- 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 glycosides of ricinoleic acid, isoricinoleic, stearic and dihydroxystearic acids and also lipases and a crystalline alkaloid.

Table 3. Samanya Karma of *Eranda (Ricinus communis* Linn.*)*

Karma	**Ca**	**Su**	**Ah**	**Dn**	**Kn**	**Bp**	**Rn**	**Sn**	**Dy**	**Dp**
Bhedana	+			+					+	+
Angamardaprashmana	+								+	+
Adobhagadoshahara		+	+						+	+
Srotovishodhana					+	+		+	+	+
Twachya									+	+
Vryshya	+			+	+			+	+	+
Vayastapana									+	+
Virechana	+								+	+
Pachana									+	+
Deepana								+	+	+
Sukhavirechana									+	+
Medakantiprasadana									+	+
Balapradam									+	+
Shoolahara						+				+
Krimighna					+	+			+	+
Mootravishodana									+	+
Yohnishodana					+					+
Swedopaga	+		+						+	+
Sothahara			+						+	+

Pharmacological aspects of Eranda:

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 carragennan, characterizing the cellular events of acute inflammation. The 250 and 500mg/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-Hydroxy tryptamin, Dextran, Bradykinin and Prostaglandin E, induced rat's hind paw oedema. The extract exhibited significant antiinflammatory activity against all the phlogestic 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.

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 the diabetes

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

Drug substituted or adulterated in the name of Eranda:

Castor oil is sometimes adultered with resin oil, brown oils and other untreated oils, like groundnut, coconut, sesame, cottonseed. The addition of any of these lower the acetyl value, castor oil has been occasionally found as an adulterant in essential oils such as those of vetiver, clove eucalyptus and lemon [anon, 1972].

Eranda moola- the roots are also said to be adulterated with roots of other species.

***Yoga*(Formulations):**

Eranda taila

Gandharava hastadi taila

Ernada moola qwatha choorna

Gandharvahastadi kashaya

Rasnerandai kashaya

Amavatari rasa

Trayodashanga guggulu

Discussion:

The integral part of Indian culture Ayurveda contributes the uses of thousands of plants, for the well-being of living beings, one among the precious contribution to the world is Eranda. It is used for both economical and medicinal purposes. India stands second largest country in the world for the production of castor seeds.

Ricinus communis Linn (*Euphorbiaceae*) commonly known as *Eranda* in Ayurveda is a soft-wooded small tree wide spread thought tropics and warm temperate region of the world.in the Indian system of medicine, the leaf, root, and seed oil of this plant have been used for the treatment of inflammation and liver disorders. It is an annual or perennial soft wooded small tree up to 6 meters height that is known to every villager of India. The palmate lobed leaf gives its special appearance and got the name gandarvahasta in Sanskrit and Palma Christi in English. Eranda has a considerable export market and is a source of foreign exchange. The castor oil is widely used as a cathartic and is official in Indian pharmacopoeia and other pharmacopoeias. An Ayurveda advocate different parts of Eranda in vataja vikaras especially oil is widely used along with its roots. Eranda is one of the members of madhyama panchamoola.

In Ayurveda, the roots of Eranda are used in the treatment of Amavata(Rheumatism), Sotha (inflammation), katisula (backache), Udara roga (diseases of abdomen), Jware (fever), etc. Its roots have also been highlighted for its Vrishya(aphrodisiac) and Vata hara actions by Acharya Charaka. This plant also possesses hepatoprotective, anti-diabetic, laxative, anti-inflammatory and free radical scavenging activities. Castor seeds are one among Bhedaniya dravya in classics. The leaves are used in the treatment various disorders.

Conclusion

Plants are the largest source of the medicine; their activities are attributed for the various phytochemical constituents what they contain. Herbal drug collection, storage, proper utilization is a measure factor in therapeutics. *Eranda* (*Ricinus communis* Linn.) is an important medicinal plant where all parts of this drug area used in different

pathological condition. The seeds are said to be purgative, leaves used as analgesic, anti-inflammatory. The roots are particularly indicated as *Vrishya* and *Vatahara* ie analgesic and aphrodisiac.

Bibliography:

1.Bhat Gopalkrishna K. Flora of Udupi. Indian Naturalist(Regd), Udupi, 2003.

2. Gagan shah et al. Scientific basis for the therapeutic use of Cymbopogon citrates stapf(Lemon grass), J Adv Pharm Technol Res. 2011 Jan-March; 2(1): 3-8.

3. Mallya Suma V, A comprehensive study of Plants in Surasaadi Gana wsr to their antibacterial activity, PhD thesis submitted to MUHS, Nashik, 2011 pp 62.

4. Anonymous, Database on Medicinal Plants used in Ayurveda, CCRAS,Volume 3, New Delhi 2005.

5. Anonymous, The wealth of India. Council of Scientific and Industrial Research, Ist ed, Vol 4. New Delhi, 1976.

6. Khare CP, Indian Medicinal Plants, An illustrated dictionary, Springer, New Delhi, 2007.

7. Wallis TE, Textbook of Pharmacognosy, CBS Publishers and Distributors, Delhi,1985.

8. Evans WC, Trease and Evans, Pharmacognosy, WB Saunders Ltd, London, 15th Edn, 2002.

9. Anonymous, Quality control methods for Medicinal plant materials, WHO, Geneva, 1998.

10. Suma Mallya et al. Phyto-pharmacognostical study of Mundi(Sphaeranthus indicus Linn.). Journal of Ayurevda and Holistic medicine (JAHM) 2014;2(2), p13-20.