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MEDICINAL USES OF GUNJA (ABRUS PRECATORIUS LINN): A REVIEW ARTICLE

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ABSTRACT

Gunja (Abrus precatorius Linn.), also known as Indian liquorice, is regarded as one of the most toxic but also visually stunning seeds in the world. It is classified as an Upavisha (semipoisonous medication) and is utilised widely in several Ayurvedic formulations with significant medicinal value. According to Ayurveda, Gunja should only be administered after appropriate Shodhana (purification techniques) using various media, including Godugdha (cow's milk), Kanji (sour gruel), etc. Common names for Abrus precatorius Linn. include Gunja and Jequirity, and it is widely distributed throughout India's plains. It is classified as an Upavisha (semi-poisonous medications) and is widely utilised in several Ayurvedic formulations with significant therapeutic value. It has been noted that Gunja's seed, root, fruit, and leaves are used as an ingredient in many formulations. Netra roga (Eye Diseases), Khalitya (Alopecia), Sarpa Visha (Snake Poison), Jwar (Fever), Indralupta (Alopecia), Keshya (Hair Tonic), Prameha (Urinary Disorder), etc. are some of the diseases. Different dosage forms are used to administer different parts of the Gunja plant, including swarasa (juice), kwatha (decoction), lepa (paste), anjan (application in the eye), avaleha (semi-solid preparations), taila (oil), rasa (mineral preparation), vati (pills), modaka (solid dosage form) ghrita (fat soluble preparations) & churna (powder).

KEYWORD: Gunja (Abrus), Ayurvedic Samhita & Nighantus, Pharmacological action, Ayurvedic properties.

INTRODUCTION

Gunja scientifically known as Abrus pre catorius is a plant species native to tropical regions of Asia, Africa, And the Americas. It is small, per ennial vine that is also commonly referred to as the rosary pea, that crab's eye, or jequirity bean. Gunja has a long history of both medicinal and cultural uses although it is important to note that the seeds of this plant can be highly toxic if ingested. Gunja, one of the poisonous plants reported in ancient scriptures of Ayurveda, comes under Upavisha category. Gunja is used in treating various diseases such as Indralupta (alopecia), Shotha (edema), Krimi (helminthes), Kustha (skin diseases), Kandu (itching), Prameha (urinary disorders), etc., after being passed through specific Shodhan. The seeds are often used criminally for killing cattle and it is reported that boiling renders the seed harmless. The Gunja tree (Abrus precatorius) con tains toxic compounds and it is not typically used in modern medicines due to its potential risks. However, some traditional and folk medicines practices have utilized certain parts of the plant for various purposes. Its important note that using the gunja tree for medicinal purposes can be dangerous and is generally discouraged. Always consult a qualified health care professional for safe and reli able medical advice. It is cited in the classics that Visha (poi son) becomes Amrita (nectar) after logical admini stration and the ancient physicians of Ayurveda successfully used this drug in a number of diseases after proper purification in some specific media. Gunja seeds contain various number of alkaloids, steroids, flavones, triterpenoides, proteins, amino acids, etc., among which albumotoxin and abrin are considered as the main responsible constituents for its poisonous effect. with an estimated human fatal dose of 0.1-1 μg/k. Gunja has been reported for its antitumor, anticancer, antispermato genic, antifertility, CNS depressant and analgesic activity in rat, in treatment of ulcer and skin affec tions, antidiarrheal and antihelminthic activities.

Common Name – Gunja

English Name – Indian liquorice root

Family - Subfamily - Leguminosae Papilionatae

Name in another languages[1]

Sanskrit – Gunja, Raktika, Kakananti, Hindi - Ratti Gujarati – Chanothi, Telugu – Guriginja, Marathi – Gunjha, Kannada – Gullugunji

Ayurvedic Properties[2]

Rasa – Tikta, Kashaya

Guna – Laghu, Ruksha, Tikshana

Virya – Ushna

Vipaka – Katu

Dosha karma – Paciefies Kapha dosha and Vat dosha

Medicinal Uses[3]

Internal Use of Rosary Seeds:- 1. Hemiplegia 2. Paralysis 3. Sciatica 4. Muscle spasm 5. Low backache 6. Rheumatoid arthritis 7. Arthritis 8. Bursitis 9. Fibromyalgia 10. Erectile dysfunction 11. Premature ejaculation.

Type[4]

Based upon the color of the seeds, three types of Gunja have been described, i.e., Rakta (red), sweta (white) and Krishna (black). According to botany, there are three types of Gunja seed based upon the color of the seed coat, i.e., red, white and jet black.

Chemical constituents

1. Leaves The leaves contain up to 10% glycyrrhizin, triterpene glycosides, pinitol and alkaloids such as abrine, hypaphorine, choline and precatorine. The triterpene glycosides are abusosides A, B, and C (which are highly sweet), and flavonoids vitexin, liquirtiginin-7-mono- and diglycosides and toxifolin-3-glucosides, 4,5,7-trihydroxyflavon.[5]
2. Root The root contains glycyrrhizin and alkaloids like abrasine and precasine besides abrine and related bases.[6]
3. Seed The seeds yield alkaloids, a fixed oil, steroids, lectine, flavonoids, and anthocyanins. The indole alkaloids of the seeds are abrine, hypaphorine, choline and precatorine, abranin, pelargonidin, cyaniding, and delphinidin. Lectines are the chief constituents of the seeds, the principal ones being abrins. Lectins are both toxic (abrin) and nontoxic (Abrus agglutinin). Abrins are denoted by abrin a, b, c and d and consist of one large â-polypeptide chain and short á-polypeptide chain joined by disulphide bond.[7]
4. Pericarp Pericarp contains abrine (alkaloids), abrusin, abrugenic acid, abrussic acid, etc.[8]

Parts Used: Root, seed, leaves.

Dose: 60–180 mg of the shodhita drug in powder form.

Pharmacological activities of Abrus precatorius

Incredible research work, in vivo and in vitro has beenconducted on various extracts of seeds of A. precatorius andit show remarkable pharmacological activities. Research onaqueous extract of seed powder of Gunja showedspermi cidal activity in male albino rats and the pet ether extract of seed oil of Gunja possess excellent anti liceactivity. Petroleum ether extract from aerial parts ofAbrus precatorious at different concentra tion showedneuroprotective effect when given orally in rats. Theplant part extracts also produced anti-diabetic, anti-viralneuromuscular, anti-epileptic anti-convulsant, antihelmintic , diuretic anti-microbial , anti-inflammatory, anti-arthritic and analgesic, anti-cancer, anti-fertility, anti spermatogenic, anti-malarial, wound healing activ ity, anti-asthmatics, anti-cataract, Antidiarrheal anti-spasmodic cytotoxicity and antitumor activity in various concentration.

Pharmacological Actions:- Gunja has been attributed different phar macological action such as Kushthaghna, Kapha nisarka, Balya, Vathara, Viryavardhaka, Kapha Pitta nashaka, Jwaranghna, Garbhnirodhaka, Krimighna, Keshya, Mutral, Hridayottejaka, Ka modeepaka, On the basis of these pharmacological actions it is used to cure various diseases.

PHARMACOLOGICAL QUALITIES:- Gunja's pharmacological qualities Include • kashay-tikshna rasa, • laghu-ruksha-tikshna virya, • katu vipak. • It calms the vata and kapha doshas. • To treat a variety of illnesses, including • Daurbalya, • Shukravikar, • Khalitya, • Palitya, • Vataroga, • Aruchi, • Viryavikar, • Netravikar, • Vrana vikar, • Krumiroga, • Bhrama roga, • Indralupta, • Aruchi, • Urustambha, • Kushtha roga.[9]

CLINICAL FEATURES:- Ingestion of seeds or extract: When the seeds are swallowed raw or after cooking, they are not poisonous. Seeds must be crushed or chewed for harmful effects to occur. Ingestion of seeds or extract causes: 1. Severe irritation of upper GIT 2. Abdominal pain 3. Nausea 4. Vomiting 5. Bloody diarrhoea 6. Rectal bleeding 7. Weakness 8. Cold perspiration 9. Trembling of the hands 10. Weak rapid pulse 11. Tachycardia 12. Headache 13. Dilated pupils 14. Hallucinations 15. Drowsiness 16. Tetany and 17. Circulatory collapse.[10]

AAMAYIKA PRAYOGA OF GUNJA:- Indications In classical Ayurvedic texts, Gunja is indicated in following diseases Kushtha, Vrana, Khalitya, Palitya, Indralupta, Arunshika, Vatvyadi, Vranashotha, Mukhapaka, Shirshula, Jwar, Pakshghat, Swarbheda, Galshotha, Galshosh,Gandmala, Kanthavedana, Grudrasi, Sandhishotha, Sigrapatanam , Dhwajabhanga, Kandu, krimi, Netraroga, Avbahuka.[11]

Matra / Dose:- Rastanrangini:- ½ - ¾ th Ratti. Bhavprakasha – Moola – 2- 4 Masha. Beeja – ½ to 11/2 ratti. (Seed:- 60- 80 gm, Root:- 2- 4 gm).

DISCUSSION

Gunja is used both internally as well as externally, in various dosage forms such as churna (powder), taila (oil), ghruta (ghee), dhuma varti (suppositories), lepa (paste), rasa, vati (tablet), yoga. In internal application, the formulations are indicated for Urusthambha (stiffness of the leg), dusyadara, udararoga (abdominal diseases), sotha (edema), kamoddipaka, vajikaraka (aphrodisiac), vatavyadhi (diseases of joints), kustha (skin diseases), balakaraka (promote strength), swasaveda (dyspnoeas), etc. whereas in external administration, the formulations are indicated for kustha (skin diseases), krimi (parasitic disease), kandu (itching), arsha (piles), kasa (cough), indralupta (alopecia), apavahuka (pain in arms), griddrasi, nasya, timiraroga (eye disease), nadivrana (sinus ulcers), siroroga (disease of the head), gandamala (chain of swelling), karnapalivivardhana, andhattya (blindness), visarpa (erysepelas), dadru (skin disease), vicharchika (one type of skin disease), kaphaja galaganda (goitre), etc.

CONCLUSIONS

Gunja (A. precatorius Linn.) is a climber and is found throughout India and its upavisha varga among which Sushruta described it under moolavisha varga and recommends various shodhana procedures before its internal use. Gunja is attributed with pharmacological properties, i.e., katu, tikta, kashaya rasa; katu vipaka and ushna virya; and useful in various disease conditions such as kustha (skin diseases), indralupta (alopacia), kandu (itching) and arshas (piles), etc. It also possesses antitumor, anticancer, antispermatogenic, antifertility, CNS depressant and analgesic activity in rat, in treatment of ulcer and skin affections, antidiarrheal and antihelminthic activities.

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