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Introduction To Pongamia Pinnata plant (Karanj) Which Is Used For Formulation Of Silver Nanoparticle Gel

Miss. Shraddha kothmire[1]*, Dr. Mrs. Shilpa Chaudhari[2]

[1*]*Department of Pharmaceutics. Dr. D.Y. Patil college of Pharmacy, Akurdi, Pune-411044, Maharashtra, India.*

***Corresponding Author:** Miss. Shraddha kothmire*
Department of Pharmaceutics. Dr. D.Y. Patil college of Pharmacy, Akurdi, Pune-411044, Maharashtra, India.

Introduction to Pongamia pinnata

Abstract

Pongamia pinnata(karanj) are factory species belonging to the Fabaceae family. They have been traditionally used in various societies for their medicinal parcels. This review composition provides an in- depth analysis of the botanical lives, traditional uses, and pharmacological parcels of Pongamia pinnata(karanj). The end is to slip light on their implicit remedial operations and encourage further disquisition in the field. Psoriasis is a habitual, vulnerable- mediated seditious skin complaint affecting millions of people worldwide. Despite numerous treatment options available, there is a need for safe and effective antidotes with minimal side goods.
This review aims to explore the scientific evidence supporting the use of Pongamia pinnata(karanj) as implicit drugs for psoriasis treatment.

Keywords: Pongamia pinnata, Karanjin, anti inflammatory, skin- psoriatic exertion

1. Overview of Pongamia pinnata(karanj)

The part of traditional medicines in the result of health problems is invaluable on a global position. Medicinal shops continue to give precious remedial agents, both in modern and in traditional medicine(1). With the associated side goods of the modern medicine, traditional medicines are gaining significance and are now being studied to find the scientific base of their remedial conduct(2). disquisition work on medicinal shops has boosted and information on these shops has been changed. This disquisition will go a long way in the scientific exploration of medicinal shops for the benefit of man and is likely to drop the dependence on synthetic drugs(3). ultimate of the Tamil Nadu croakers of Indian system of traditional medicine Ayurveda and Siddha use Pongamia pinnata to treat various kinds of conditions including diabetes mellitus. It's a medicinal plant native to Western Ghats and primarily set up in tidal timbers of India(4). Pongamia pinnata also called as Derris indica, is a monotypic rubric and grows abundantly along the beachfronts and beaches in Myanmar. The tree is known for its multipurpose benefits and as a implicit source of biodiesel(6). The seeds contain average about 28 – 34 oil painting oil with high chance of polyunsaturated adipose acids(7). Historically, Pongamia has been used as folk medicinal plant, particularly in Ayurvedha and Siddha systems of Indian medicine(8). All corridor of the plant have been used as a crude drug for the treatment of tumours, piles, skin conditions,

itches, abscess, painful rheumatic joints injuries, ulcers, diarrhea etc(8, 9). either, it's well known for its operation as beast fodder, green excreta, timber and fish bane. It has also been recognized to retain operations in husbandry and environmental operation, with insecticidal and nematicidal exertion. further recently, the effectiveness of P. pinnata as a source of biomedicines has been reported(10), specifically as antimicrobial and remedial agents.[7]

1. Botanical Profiles of Pongamia pinnata (karanj)

Pongamia Pinnata belongs to family, Fabaceae. Primarily a native of Asia and it is largely found in Australia, Japan and Thailand and Pacific Island, in ayurvedic and also in modern science its medicinal qualities in treating several ailments including all kinds of severe skin infections. A potent ayurvedic medicine, karanja is used in the form of leaf extracts, stems, roots, and seeds in medicinal preparation. Taste is pungent and it is easy to digest, karanja is slightly hot in nature as compared to other herbs. karanja stems were used as toothbrushes as they are very useful for dental care. It is used in therapy called 'bloodletting therapy' for the treatment of skin related anomalies (to get free from impure blood from the veins).[18]

- **Botanical Names**: - Pongamia Pinnata
- **Kingdom: -** Plantae
- **Division: –** Magnoliophyta
- **Class: -** Magnoliophyta
- **Order: -** Fabales
- **Family: -** Leguminasae
- **Genus: -** Pongamia.
- **Species: -** *pinnata (member of pongamia genus)*
- **Popular names: -** Karanj
- **Parts used: -** Seeds

Fig. Plant of Karanja

2.Traditional Uses of Pongamia pinnata

multitudinous herbal remedies inclusively or in combination have been recommended in various medical dialogues for the cure of different conditions. The Pongamia pinnata also called as 'Karanj', has been utilized in different system of traditional medicines for the treatment of various conditions and infections of mortal beings. It contains several phytoconstituents belonging to order flavonoids and fixed oils. In Sanskritic India, seeds were used for skin nourishment. moment, the oil painting oil is used as a liniment for rheumatism. Leaves

are effective to treat cold and cough, Roots are used for drawing bonds, teeth and ulcers. Dinghy is used internally for bleeding piles. Authorities from the plant as well as oil painting oil are antiseptic. In the traditional systems of medicines, analogous as Ayurveda and Unani, pinnata plant is used foranti-inflammatory,anti-plasmodial,anti-nociceptive,anti-hyperglycaemic,anti-lipidoxidative,anti-diarrhoeal,anti-ulcer,anti-hyperammonic and antioxidant. Its oil painting oil is a source of biodiesel. It has also necessary source of energy, which is renewable, safe and non-pollutant.

Traditional Uses It apparent that traditionally many species of Pongamia have been and are being used as a medicine in the native system of drug to treat colorful ails. Different corridor of p.pinnata are traditionally used since ancient times; roots of this factory are used to treat injuries, inflammation, canine bite, skin complaint, vaginal infection etc.(3). Crude root is used as toothbrush for maintaining oral hygiene; root juice is used for cleaning of ulcers. Leaves are used to treat cancer, diabetes, ulcer, and microbial infection. Flowers of this factory are used to treat bleeding haemorrhoids and diabetes; fruits are used for treatment of abdominal ulcers, tumours, and haemorrhoid(9). Seed powder is obtained for the treatment of antipyretic, treating bronchitis, whooping cough and as a febrifuge. Dinghy is used to treat coughs, cold, internal complaint, Hypotension, malaria etc.(04). The seed oil painting is also used as a coagulant also used in treatment of leprosy, stomach pain, habitual ulcers and common pain.[15]

Pharmacological conditioning

Antibacterial exertion present study showed the antimicrobial exertion of colourful corridor of Pongamia pinnata against several bacterial pathogens. Antibacterial exertion against Escherichia coli, Pseudomonas aeruginosa, and Staphylococcus aureus, the results indicated that chloroform bit showed potent exertion. The excerpts used in the study need to be further reused and may be used in large scale product for marketable and pharmaceutical operations in future.[4]

Anti-inflammatory exertion

Hydro- alcoholic(70) excerpts of P. pinnata leaves showed significant anti-inflammatory exertion in severe, sub-acute and constant inflammation models. The report suggested that the leaves excerpt showed remarkable anti-inflammatory activity. The waterless extract obtained from dinghy of P. pinnata were reported to possess anti- seditious exertion at boluses of 400mg/ kg and 800 mg/ kg were screened by ramify and constant inflammation models using carrageen- provoked hinder mitt-edema and cotton bullet granuloma in albino rats.[8]

Anti-psoriatic exertion

Evaluation of anti-psoriatic exertion of expression containing P. pinnata leaves hydroalcoholic excerpt was estimated using imiquimod- convinced psoriatic mouse model. The results indicated noteworthy exertion by reducing the psoriasis by dwindling the scaling of the skin.[6]

Anti-convulsant exertion

Petroleum ether excerpt of stem dinghy of P. pinnata at different attention were estimated for their anticonvulsant efficacity in picrotoxin, pentylenetetrazol, strychnine, minimal electroshock, and isoniazid convinced models. The results indicated that petroleum ether excerpt was set up to have a good anticonvulsant effect in pentylenetetrazol and minimal electro shock model.[6]

Anti-filarial exertion

Alcohol and waterless excerpt of Pongamia pinnata leaves and flowers was estimated by Invitro assays employing robotic movements of whole worm and whim-whams – muscle medication of S. Cervi. Both the excerpts showed implicit anti-filarial efficacity against the Cattle Filarial Parasite.[16]

Antioxidant exertion

Antioxidant exertion of chemically synthesised Ag NPs from the leaves of Pongamia pinnataby DPPH, ABT s, Hydroxyl radical, Superoxide anion, and Nitric oxide scavenging assays revealed that the splint excerpt showed potent exertion. Ethyl acetate excerpts from the seedsofP. pinnata displayed loftiest total phenolic content and total flavonoid content of1.23 ±0.04 g GAE g −1 and0.95 ±0.05 g CE g −1 independently with total antioxidant displaying a IC50 value of18.47 ±0.33 µgml −1.[14]

Antinociceptive and Antipyretic exertion

The leaves of P. pinnata have been reported to have antinociceptive and antipyretic parcels. The rats and mice were assessed for their body's response to potentially poisonous stimulants against 70 ethanolic bit of P. pinnata leaves in different pain sculpts. pinnata leaves excerpt was as well tested for its commotion against fever in rats with Brewer's incentive- convinced fever. The excerpt of P. pinnata leaves was set up to have momentous antinociceptive and commotion against fever.[13]

Antiviral exertion

The antiviral exertion of an ethanolic excerpt of Pongamia pinnata leaves was tested and shown to be effective against White Spot Syndrome Virus in Penaeus monodon model. The coarse waterless seed excerpt was estimated for its anti-viral exertion, the results suggested that excerpt completely hindered the development of herpes simplex contagion both type- 1 and type- 2 at attention of 1 and 20mg/ ml independently without any cytopathic effect. The rotavirus wasn't affected by a crude excerpt of dried leaves.[13]

Nano- pesticidal effect

Zinc oxide nanoparticles of Pongamia pinnata splint excerpt were estimated for their pesticidal exertion; the results indicated that the nanoparticles were potent enough to beget toxin against palpitation beetle called Callosobruchus macula.[6]

Cardio defensive property

The evaluation of petroleum ether bit from stem howl of P. pinnata on streptozotocin- nicotinamide convinced diabetic rat model. The outgrowth of the study indicated drop in cardiomyopathy in diabetic rats.[15]

Crack mending exertion

The present studies results confirm that potent significant crack mending exertion of P. pinnata. Crack compression, increased tensile strength, increased hydroxyproline and hexosamine content, modulation of pro seditious and anti-inflammatory cytokine, moderate antimicrobial exertion and In- vivo antioxidant exertion explains the reputed crack mending observed.[17]

Anti-ulcer exertion

Methanol root excerpt of P. pinnata was estimated for its anti-ulcer property against aspirin convinced ulcers and was shown to have significant protection against mucosal damage along with implicit to reduce acetic acid convinced ulcers. The mucosal protection factors similar as mucin stashing, mucosal cell glycoprotein, mucosal cell life span, cell proliferation, and lipid peroxidation fore stallment were stopped.[12]

Neuroprotective exertion

Ethanol excerpt of P. pinnata stem dinghy was estimated for its neuroprotective exertion in rats convinced with mono sodium glutamate neurotoxicity. P. pinnata stem dinghy ethanolic bit at the cure of 200 and 400 mg/ kg was given orally. The ethanolic excerpt of P. pinnata factory stem dinghy has significant neuroprotective exertion in albino rats and was set up to retain exertion in comparison with that of standard medicine Dextromethorphan and therefore can be used as a implicit neuroprotective agent.[17]

Anticonvulsant property

The petroleum ether bit of P. pinnata branch scowl and its portions were tested for anticonvulsant efficacity in laboratory creatures by scientists. The goods of pentylenetetrazol, isoniazid on mice, minimal electroshock, strychnine, and have been studied using p. pinnata branch scowl petroleum ether but. P. pinnata stem dinghy petroleum ether excerpt was set up to have a good anticonvulsant effect.

operation of Pongamia pinnata in Biofuel assiduity

Mature Karanja seeds have lately attracted the attention of marketable significance as an alternate energy source because to their high oil painting content. The primary element of Karanja oil painting is furan. The substances discovered are flavones, karanjin, and kanjone, also pongamol, and a diketone. oil painting- producing crop shops are critical for the energy and husbandry' profitable growth. Biodiesel is produced from oil painting seeds that contain poly unsaturated adipose acids. In terms of physico- chemical characteristics and biodegradability, these organic seed canvases outperform diesel energies. Pongamia pinnata is one of these factory species. further exploration is demanded to use this species as a biodiesel and biomedical source. also, having an elite genotype of P. pinnata producing high oil painting- yielding seeds is critical for adding biodiesel affair. The seeker plus tree is a P. pinnata individual tree with superior morphological characteristics(circumference,

height, splint number g wt.- 1, number of kids inflorescence- 1, quantum of blooming inflorescence- 1, number of seeds inflorescence- 1) compared to other individualities of the same species.[6]

Conclusion

In the once many decades, the advancement of wisdom and technology has encouraged the progress of exploration and field of drug. This progress has led to the new discoveries and identification of new composites from factory origin. Herbal drug has been used since ancient times and has a huge impact on treatment of conditions and conservation of mortal health. In this current review an trouble was made to collect the recrimination of Pongamia pinnata, a tree with prominent traditional uses with different Phyto- chemical ingredients and pharmacological conditioning. The literature check revealed that the factory has formerly been exploited for its vast pharmacological conditioning and there were major reports regarding the remedial energy of its insulated composites. These insulated composites along with its excerpts and fragments have been reported to haveanti-inflammatory, crack mending,anti-diarrhoeal,anti-malarial,anti-cancer,anti-diabetic, anticonvulsant, neuroprotective, antipyretic, cardio defensive, hepatoprotective, antiviral and numerous further conditions. Along with these conditioning it can be used as asource of biodiesel playing an important part in society.P. pinnata can be listed as one among numerous medicinally and economically precious species and further further exploration towards itsbio-actives and the principle behind its molecular medium can be done, formulated into new expression with more potent yield and efficacity.

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