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Review Article

Plumbago zeylanica Linn. (Sheetraj): A Comprehensive Review of Unani Perspectives, Phytochemistry, and Pharmacological Activities

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Abstract

Background: *Plumbago zeylanica* Linn. (Sheetraj/Chitrak) is an important medicinal plant of the family Plumbaginaceae and has been widely used in the Unani system of medicine for centuries. It is traditionally prescribed for various dermatological, gastrointestinal, inflammatory, and musculoskeletal disorders.

Objective: To review the classical Unani literature and modern scientific evidence related to the pharmacognosy, phytochemistry, pharmacological activities, and therapeutic applications of *Plumbago zeylanica*.

Methods: A comprehensive literature search was conducted using classical Unani texts and electronic databases including PubMed, Google Scholar, and ScienceDirect. Relevant publications up to 2025 were reviewed and analyzed.

Results: Unani literature describes Sheetraj as *Garm wa Khushk* (Hot and Dry) in the third degree with actions such as anti-inflammatory, digestive, expectorant, diuretic, and nervine stimulant. Phytochemical investigations have identified plumbagin as the principal active constituent along with coumarins, flavonoids, sterols, and other bioactive compounds. Experimental and clinical studies have demonstrated antimicrobial, wound-healing, antiulcer, antihyperlipidemic, antidiabetic, hepatoprotective, nephroprotective, anti-inflammatory, antiobesity, antifertility, and anticancer activities, supporting many of its traditional uses.

Conclusion: The available evidence validates several classical Unani claims regarding Sheetraj and highlights its significant therapeutic potential. Further clinical studies are required to establish its safety, efficacy, and standardization for evidence-based clinical applications.

Keywords: *Plumbago zeylanica*, Sheetraj, Chitrak, Unani medicine, plumbagin, phytochemistry, pharmacology.

INTRODUCTION

Plumbago zeylanica Linn., commonly known as Chitrak, is a perennial medicinal shrub belonging to the family Plumbaginaceae. The species is widely distributed throughout tropical and subtropical regions of India, particularly in the eastern and peninsular parts of the country[1]. The name Plumbago is derived from the Latin word plumbum (lead), which has been attributed either to the plant's historical use in treating lead poisoning, its ability to produce lead-colored stains on the skin, or the lead-blue coloration observed in certain species of the genus[2]. The family Plumbaginaceae comprises approximately 10 genera and 280 species, among which the genus Plumbago is represented by three principal species in India: Plumbago zeylanica Linn., Plumbago indica Linn. (syn. P. rosea Linn.), and Plumbago capensis Linn[3].

These species can be distinguished by their floral characteristics. *P. zeylanica* bears white flowers and is the most commonly occurring species, predominantly found in moist habitats. *P. indica* is characterized by its red flowers, whereas *P. capensis* produces blue flowers[4]. Owing to its extensive therapeutic applications, *P. zeylanica* and related species have been utilized for centuries in various traditional systems of medicine, including the Indian, Chinese, Korean, Taiwanese, and Malaysian systems of healthcare. The plant occupies an important position in ethnomedicine due to its diverse pharmacological properties and long-standing use in the management of numerous ailments[5].

METHODOLOGY

A comprehensive review of classical Unani literature was conducted to collect information on *Plumbago zeylanica* Linn. (Sheetraj/Chitrak), focusing on its temperament (Mizaj), pharmacological actions, therapeutic uses, and mechanisms of action. An extensive search of electronic databases, including PubMed, Google Scholar, and ScienceDirect, was carried out to gather data on its phytochemistry, pharmacognosy, pharmacological activities, and toxicity. Relevant English-language publications available up to 2025 were reviewed.

Classical Unani texts such as *Al Jami' ul Mufradat al Advia wal Aghzia*, *Muheet Azam*, and *Khazainul Advia* were consulted for traditional information. Standard Unani Medical Terminology (CCRUM-WHO) was used for terminological consistency, while botanical nomenclature was verified using the *Glossary of Indian Medicinal Plants* and other authenticated sources. Keywords used in the search included "Plumbago zeylanica," "Chitrak," "Sheetraj," "Plumbagin," "phytochemistry," "pharmacological activity," "in vitro study," "in vivo study," "clinical trial," and "toxicity." The scientific name and synonyms were validated using The Plant List.

RESULT

Taxonomy and nomenclature:

Kingdom: Plantae

Sub-kingdom: Tracheobionta

Division: Magnoliophyta

Sub-division: Angiosperms

Class: Dicotyledonae

Sub-class: Gamopetalae

Order: Caryophyllales

Family name: Plumbaginaceae

Genus: Plumbago

Species: Zeylanica[6,31]

Botanical name: Plumbago zeylanica Linn[7,8]

Vernacular names (synonyms)

Plumbago zeylanica Linn. is known by various vernacular names across different languages and traditional systems of medicine. In English, it is commonly referred to as Ceylon Leadwort, Doctor Bush, Wild Leadwort, White-flowered Leadwort, and Chitrak. In Sanskrit, it is known as Chitraka, Chitra, Agni, Agnimatha, Anala, Dahana, and Vahni. The plant is called Chitrak, Chitra, Chitramula, Chitravalli, and Chitavur in Hindi, while in Marathi it is popularly known as Chitrak and Chitravalli. Telugu names include Chitramulam, Agnimatha, and Tellachitra, whereas in Tamil it is referred to as Chitramulam, Kodiveli, and Penchitar. In Arabic and Unani literature, the plant is known as Sheetraj, while in Urdu it is commonly called Cheetha[7-20]

Historical Background

Scientific investigations on *Plumbago zeylanica* Linn. (Sheetraj/Chitrak) began in the early nineteenth century with the isolation of plumbagin, its major active constituent, by Dulong Astafort in 1828 [21]. Later, Roy and Dutta re-examined plumbagin and its chemical properties in 1928, while Tumminkatti and Patwardhan reported the presence of a sterol glycoside in addition to plumbagin in 1932. Further studies explored its pharmacological effects, including the action of plumbagin on the nervous system, as well as its antimicrobial and antifungal activities. Histological investigations of the root were also carried out, and the Indian Pharmacopoeia (1950) recognized plumbagin as one of the principal constituents responsible for the medicinal properties of Chitrak[21].

Classical Unani scholars described Sheetraj as a powerful medicinal plant with caustic, vesicant, digestive, and phlegm-expelling properties. It was traditionally prescribed for rheumatic conditions, splenic disorders, and digestive ailments, and was also considered abortifacient[22]. Muhammad Husain mentioned different varieties of Sheetraj and identified it with the Greek drug Libadiyun or Lifadiyun, while Rhazes described two types of Sheetraj, namely the Indian and Syrian varieties[22].

Geographical source

Plumbago zeylanica Linn. (Sheetraj/Chitrak) is a perennial semi-climbing subshrub that is widely distributed throughout tropical and subtropical regions of Asia, Africa, Australia, and Sri Lanka (Ceylon), where it is extensively utilized in traditional and ethnomedicinal practices[23]. The species is also reported from several countries of the Arabian Peninsula, including Yemen, Oman, and the southwestern parts of Saudi Arabia[24].

The plant commonly grows in warm climatic conditions and is found up to an altitude of approximately 2000 meters above sea level. It thrives in subtropical and tropical habitats, particularly in soils enriched with essential trace elements. In India, *P. zeylanica* is widely distributed and cultivated in various regions, including West Bengal, Chhattisgarh, Madhya Pradesh, Uttar Pradesh, Maharashtra, and several parts of South India. It is also commonly encountered in the plains of Tamil Nadu, Andhra Pradesh, Kerala, and Karnataka, where it grows naturally in diverse ecological conditions[25].

Cultivation: It can be propagated by seeds or stem cuttings and prefers well-drained sandy or loamy soil under warm, sunny conditions. Regular irrigation promotes root development, which is the main medicinal part used[24,25].

Collection: Roots are collected after 1–1.5 years of growth, usually during the dry season, when the plant's active constituents are at their peak. After collection, roots are washed, cut into small pieces, and dried in shade for medicinal use[24,25]

Figure 1: Sheetraj (Plumbago zeynalanica Linn.)

Botanical description

Macroscopic Characters: Root: Cylindrical, slightly twisted, light yellowish-brown externally; fracture short; taste acrid and pungent; odor characteristic. Stem: Herbaceous or slightly woody at the base; branched; striated; greenish-brown. Leaves: Simple, alternate, oblong or elliptic, 2.5–7.5 cm long, acute or obtuse; margins entire; glabrous or slightly hairy; petiole short or nearly sessile. Flowers: White, in terminal or axillary racemes; bracts small; calyx glandular; corolla tubular with five lobes. Fruit: Capsule, small, oblong, enclosed in persistent calyx[7,8,13-15].

Microscopic Characters : Root: Cork composed of several layers of tangentially elongated brown cells. Secondary cortex with parenchyma containing starch grains and tannins.Secondary xylem abundant, with lignified vessels and fibers; xylem rays narrow and uniseriate. Presence of plumbagin in secretory cells (appearing as yellowish contents)[14].

Standardization Profile

The standardization parameters of *Plumbago zeylanica* Linn. specify that foreign matter should not exceed 2%, total ash should be not more than 3%, and acid-insoluble ash should be below 1%. The alcohol-soluble and water-soluble extractive values should each be not less than 12%, indicating acceptable quality and purity of the crude drug [26].

DESCRIPTION OF DRUG IN UNANI

Sheetraj is a herb that grows wild in India and has been used by rural and tribal people for hundreds of years as a traditional system of medicine. Chitrak is native to South East Asia. It is a much branched, evergreen shrub that reaches about 6 feet in nature. Dark green leaves are ovate to 6 inches long by half as wide. They are fast growing plants, but their size is easily controlled by pot size and pruning. Chitrak needs full sun to partial shade with intermediate to warm temperatures. After flowering, the plants should be cut back to Keep them growing vigorously. The fruits are like a small cocklebur with Glue on the soft spines and they will stick to anything. These plants are usually grown in east asia , west bengal, uttar pradesh, srilanka , australia ,africa.

Types:

Indian (Hindi): This type is red, heavy, bitter in taste, and has a hard head.

Syrian (Shami): This type is reddish-black, sweet in taste, but causes a biting sensation on the tongue.

Colour & Smell: The plant's branches and twigs are dark, leaves are green. European varieties have red flowers, while Indian varieties have white flowers. The root is fragrant.

Taste: The taste of the plant is described as talq (bitter)[9-11,16-20,26].

Juz-e-Musta'mal (Part Used) : Root, stem, branches[9-11,16-20].

Mizāj (Temperament): Garm khushk (III) , (Hot and dry 3rd degree)[9-11,16-20].

Naf'e Khās (Main Action): Muharrik A'ṣāb[9-11,16-20].

Afa'al (Pharmacological action mentioned in Unani Medicine)

The actions of *Plumbago zeylanica* (Sheetraj) described in classical Unani literature can be categorized into local and systemic effects.

Local Actions:

Sheetraj possesses potent local actions including *Jali* (detergent), *Muqarrih* (ulcerative), *Mukhrish* (corrosive), and *Muhammir* (rubefacient) properties. It is traditionally used in the management of various skin disorders such as *Quba* (tinea), *Bahaq* (pityriasis), and *Baras* (vitiligo). The drug is also recognized for its *Muhallil-e-Waram* (anti-inflammatory) effect, which helps in resolving localized swellings and inflammations[27,28].

Systemic Actions:

Systemically, Sheetraj acts as a *Mufarreh* (exhilarant), *Mudirr-i-Bawl* (diuretic), *Musakkin* (sedative), and *Musakkin-e-Avja* (analgesic). It is regarded as a *Muharrik-i-A'sab* (nervine stimulant), *Munaffith* (expectorant), and *Muharri-e-Am'a* (intestinal stimulant), thereby promoting respiratory and digestive functions. The drug is also considered *Mufattih* and *Dafe-Sudda* (deobstruent), facilitating the removal of bodily obstructions. Additionally, it exhibits carminative, digestive, appetite-stimulating, aphrodisiac, cardiac tonic, anti-inflammatory, anti-venom, and purgative properties. In traditional practice, Sheetraj has also been employed in conditions such as joint pain, splenic disorders, paralysis, facial palsy, and nervous weakness. Furthermore, it is described as possessing emmenagogue, abortifacient, and placenta-expelling activities[9-11,16-20,27,28].

Uses According to Unani Literature

Local Uses:

Plumbago zeylanica (Sheetraj) is traditionally used in the management of various dermatological disorders, including *Taqashshur al-Jild* (psoriasis), *Baras* (leucoderma), *Bahaq* (pityriasis), *Bahaq Abyad* (pityriasis alba), *Jarab* (scabies), *Quba* (tinea), and *Kharish* (itching). It is also applied in painful musculoskeletal conditions such as *Vaja-ul-Mufasil* (joint pain), *Irqun-Nisa* (sciatica), and *Vaja-ul-Vark* (sacroiliitis)[9-11,16-20,27,28].

Systemic Uses:

Systemically, Sheetraj is employed as an appetite stimulant (*Mushtahi*) and digestive (*Hazim*). It is used in phlegmatic and nervous disorders, splenic diseases including splenomegaly and splenic fibrosis, stomach ailments, indigestion, ulcers, bloody diarrhoea, tuberculosis, alopecia areata, and joint disorders. Its traditional use in these conditions reflects its wide therapeutic significance in Unani medicine[9-11,16-20,27,28]

Miqdar e khurak (Dose): 1-1 1/2 gram [10], 1.5 to 3 gram [29], 3½-7 gram, 4½ gram[9]

Muzir (Adverse effect): Disease of lungs, Jigar haar[9,10]

Musleh (Corrective): Tukhm Bartang, Khayar, For Lungs: Samag-e-Arbi, Mustagi, For Jigar har (Liver): Gul Surkh, Sandal safed[9,10].

Badal (Substitute): Munga (Coral), Narkachur (Curcuma zedoaria), Majeeth (Rubiacordifolia)[10,11].

Murakkabat (Compound formulations): Majoon-e-Flasfa[27], Ma'jun Baladur, Hab Ashkhar, Aqaruva-i-kabir, Ma'jun Raig Mahi [11], Itrifal Gudvi, Itrifal kabir, Habbe Sanjeevani, Sufoof Qaqla, Majun suranjan [30], Majoon Jograj Gogal[27,30].

CHEMICAL CONSTITUENTS

Major naphthoquinones present in the plant are plumbagin, chitranone, 3-biplumbagin, chloro-plumbagin, elliptone, coumarins includes seselin, 5-methoxy seselin, xanthyletin, suberosin. Other phytoconstituents present in the plant includes plumbagic acid, β sitosterol, 2-dimethyl-5-hydroxy-6-acetylchromene, saponaretin, and isoaffinetin[32]. Several other naphthoquinones, difuranonaphthoquinones binaphthoquinones, coumarins, di-phenyl sulfone, carboxylic acids and esters, monoterpenes, tri-terpenoids, amino acids, anthraquinones, steroids, steroid glucosides, sugars and other compounds are also reported to be present[33-37].

The roots of the plant contains plumbagin, and other constituents such as 3-chloroplumbagin, binaphthoquinone named as 3′, 6′-biplumbagin, 3,3′-biplumbagin and four other pigments reported as isozeylanone, zeylanone, elliptone, and droserone. Isoshinanolone and a new napthalenone i.e., 1, 2(3)-tetrahydro-3, 3′-biplumbagin isolated from the phenolic fraction of the light petrol extract of the roots has also been identified. Two plumbagic acid glucosides; 3′-O-beta-glucopyranosyl plumbagic acid and 3′-o-beta-glucopyranosyl plumbagic acid methylester along with five naphthoquinones (plumbagin, chitranone, maritinone, elliptone and isoshinanolone), and five coumarins (seselin, methoxyseselin, suberosine, xanthyletin and xanthoxyletin) are reported to be isolated from the roots[37-39].

The flowers are reported to contain flavonoids, coumarins, phenolic compounds, glycosides, and small amounts of plumbagin. Coumarin derivatives such as seselin, 5-methoxyseselin, xanthyletin, suberosin, and xanthoxyletin have been identified from aerial parts, including the flowers[40].

PHARMACOLOGICAL ACTIVITY

Wound Healing Activity

Plumbago zeylanica Linn. has traditionally been used for the treatment of wounds. In an experimental study conducted by Kodati et al., the methanolic root extract of *P. zeylanica* exhibited significant wound healing activity in Wistar rats. A 10% (w/w) extract ointment was applied topically to the wound area. The treated animals showed enhanced wound contraction from the sixth day onwards, along with a shorter wound closure period and a higher percentage of wound contraction compared to the control group. Complete wound healing was achieved within 16 days in the extract-treated group, whereas epithelialization in the control group required more than 20 days[41].

Antihyperlipidemic Activity

Pendurkar and Mengi investigated the antihyperlipidemic potential of the aqueous root extract of *Plumbago zeylanica* Linn. in diet-induced hyper-lipidaemic rats. Oral administration of the extract at doses of 20, 40, and 80 mg/kg significantly reduced serum cholesterol and triglyceride levels. The observed effects were comparable to those produced by standard antihyperlipidemic drugs, namely fenofibrate (20 mg/kg) and atorvastatin (8 mg/kg). Furthermore, the extract markedly decreased total lipid accumulation in the liver. These findings suggest that the aqueous root extract of *P. zeylanica* possesses significant antihyperlipidemic activity and may be beneficial in the management of hyperlipidaemia[42].

Antiulcer Activity

Falang et al. evaluated the antiulcer activity of the aqueous root extract of *Plumbago zeylanica* Linn. in albino rats with aspirin- and indomethacin-induced gastric ulcers. The study assessed ulcer score, ulcer index, and percentage protection in comparison with control groups. The extract exhibited a significant dose-dependent protective effect against aspirin-induced gastric mucosal damage at doses of 25, 50, and 100 mg/kg. In the indomethacin-induced ulcer model, significant ulcer inhibition was observed at doses of 50 and 100 mg/kg. These findings indicate that *P. zeylanica* root extract possesses notable gastroprotective and antiulcer properties[43].

Antimicrobial Activity

Singh et al. evaluated the antimicrobial potential of methanolic extracts of the leaves and stem of *Plumbago zeylanica* Linn. against six bacterial and nine fungal species. Both extracts exhibited dose-dependent antimicrobial activity, as demonstrated by the zones of inhibition. The leaf extract showed the greatest activity against *Staphylococcus aureus* and *Fusarium oxysporum*, whereas the stem extract was particularly effective against *Pseudomonas aeruginosa* and *Penicillium expansum*. The findings indicate that *P. zeylanica*, especially its stem extract, possesses significant antibacterial and antifungal properties[44].

Anti-inflammatory Activity

Sheeja et al. evaluated the anti-inflammatory activity of acetone and petroleum ether extracts of *Plumbago zeylanica* Linn. leaves in carrageenan-induced paw edema in rats. Oral administration of the acetone extract at doses of 200 and 400 mg/kg produced a significant reduction in inflammation compared with the control group. The anti-inflammatory effect was attributed to the inhibition of prostaglandin synthesis and release[45-47].

In another study, Thanigavelan et al. investigated the hydroalcoholic extract of *P. zeylanica* root bark using both in vitro and in vivo models of inflammation. The extract demonstrated moderate anti-inflammatory activity at a dose of 250 mg/kg body weight in carrageenan-induced acute inflammation and Freund's adjuvant-induced chronic inflammation models, with effects comparable to indomethacin. The observed activity was also suggested to be mediated through inhibition of prostaglandin production[48].

Antidiabetic Activity

Plumbago zeylanica Linn. has demonstrated significant antidiabetic potential, which is largely attributed to its principal bioactive constituent, plumbagin. Zarmouh et al. investigated the antidiabetic activity of the ethanolic root extract in streptozotocin-induced diabetic rats. The extract was administered at doses of 100 and 200 mg/kg for six weeks. Treatment resulted in a significant increase in hepatic hexokinase activity along with a reduction in hepatic glucose-6-phosphatase activity and serum levels of acid phosphatase (ACP), alkaline phosphatase (ALP), and lactate dehydrogenase (LDH). These findings suggest that *P. zeylanica* exerts a beneficial effect on glucose metabolism and may help in the management of diabetes mellitus[49].

Antiobesity Activity

Kotecha and Rao evaluated the antiobesity potential of *Plumbago zeylanica* Linn. in a clinical study involving obese patients at I.P.G.T. & R. Hospital, Jamnagar, Gujarat. Participants received capsules containing *P. zeylanica* (500 mg) along with *Haridra* (*Curcuma longa*) powder (1 g), administered four times daily for 45 days, in conjunction with a low-calorie diet. The treatment regimen produced a greater reduction in body weight compared to *Haridra* alone, indicating the potential antiobesity effect of *P. zeylanica* as an adjunct to dietary management[50].

Hepatoprotective Activity

Kanchana et al. investigated the hepatoprotective effect of the petroleum ether extract of *Plumbago zeylanica* Linn. roots against paracetamol-induced liver injury in experimental animals. Hepatic damage was confirmed by elevated serum biochemical markers following paracetamol administration. Treatment with the root extract significantly reduced these elevated markers and restored normal liver function, indicating protection of hepatocytes from toxic injury. The findings suggest that the petroleum ether extract of *P. zeylanica* roots possesses significant hepatoprotective activity against paracetamol-induced hepatocellular damage[51].

Nephroprotective Activity

Rajakrishnan et al. evaluated the nephroprotective effect of the hydroalcoholic root extract of *Plumbago zeylanica* Linn. in cisplatin-induced nephrotoxicity in Swiss albino mice. Administration of the extract at a dose of 400 mg/kg significantly ameliorated cisplatin-induced renal damage, as evidenced by improvements in kidney weight and reductions in serum urea and creatinine levels. The findings indicate that the hydroalcoholic root extract possesses significant renoprotective activity against drug-induced nephrotoxicity[52].

Antifertility Activity

Edwin et al. investigated the antifertility potential of various leaf extracts of *Plumbago zeylanica* Linn., including petroleum ether, chloroform, acetone, ethanol, and aqueous extracts, in female rats. The extracts were administered at doses of 200 and 400 mg/kg, and their effects on the estrous cycle were evaluated. Among the tested extracts, the acetone and ethanol extracts exhibited the most pronounced anti-ovulatory activity by disrupting the normal estrous cycle. Notably, the effect was reversible upon cessation of treatment, suggesting that *P. zeylanica* leaf extracts possess reversible antifertility properties[53].

Anticancer and Cytotoxic Activity

Plumbago zeylanica Linn. possesses significant anticancer and cytotoxic potential, primarily attributed to its major bioactive constituent, plumbagin. Eldhose et al. investigated the effect of plumbagin on human colon cancer (HCT116) cells under both attached and unattached culture conditions. Treatment with low micromolar concentrations of plumbagin induced G1-phase cell cycle arrest, promoted apoptosis through the mitochondrial pathway, and increased reactive oxygen species (ROS) generation. The compound exhibited a pronounced anti-survival effect on colon cancer cells while showing minimal toxicity toward normal colon cells, highlighting its selective anticancer activity.

In another study, Mani and Jayachitra evaluated the anticancer effect of the ethanolic leaf extract of *P. zeylanica* in Dalton's Ascitic Lymphoma (DAL)-bearing mice. Oral administration of the extract at doses of 200 and 400 mg/kg for 14 consecutive days significantly reduced viable tumor cell count and packed cell volume, prolonged the survival period of the animals, and improved altered hematological, biochemical, and lipid profile parameters. These findings suggest that *P. zeylanica* possesses promising anticancer activity and may serve as a potential source of anticancer agents[54,55].

DISCUSSION

Plumbago zeylanica Linn. (Sheetraj/Chitrak) is a well-known medicinal plant in the Unani system of medicine and is described as possessing potent actions such as *Muhallil-e-Waram* (anti-inflammatory), *Hazim* (digestive), *Mudirr-i-Bawl* (diuretic), *Munaffith-e-Balgham* (expectorant), and *Muharrik-e-A'sab* (nervine stimulant). The findings of contemporary pharmacological studies largely support these traditional claims. Experimental studies have demonstrated significant anti-inflammatory, anti-microbial, wound healing, antiulcer, antidiabetic, hepatoprotective, nephroprotective, and anti-hyperlipidemic activities, which may be attributed primarily to plumbagin and other bioactive constituents present in the plant. The documented anti-inflammatory and analgesic effects correlate well with its traditional use in *Vaja-ul-Mafasil* (joint disorders), *Irqun-Nisa* (sciatica), and other painful

conditions. Likewise, its antimicrobial and wound-healing properties support the classical use of Sheetraj in dermatological disorders such as *Baras*, *Bahaq*, *Jarab*, and *Quba*. The digestive, antiulcer, and metabolic regulatory effects observed in modern studies further validate its traditional application as *Hazim* and *Mushtahi*. These findings suggest that Unani observations regarding Sheetraj are supported by growing scientific evidence, although well-designed clinical studies are still needed to establish its efficacy and safety in humans.

CONCLUSION

Plumbago zeylanica Linn. (Sheetraj) is an important medicinal plant with a long history of use in Unani medicine. Classical descriptions of its therapeutic actions and indications are supported by modern pharmacological studies demonstrating anti-inflammatory, antimicrobial, wound-healing, antidiabetic, hepatoprotective, nephroprotective, and anticancer activities. The presence of bioactive compounds, particularly plumbagin, provides a scientific basis for many of its traditional applications. The convergence of Unani knowledge and contemporary research highlights the therapeutic potential of Sheetraj and supports its further investigation through standardized clinical trials for evidence-based integration into modern healthcare.

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Author's contribution

Malik Kashif: Conceptualization, methodology, data interpretation, manuscript writing (original draft preparation), manuscript organization, critical revision, editing, formatting, visualization, supervision, and final approval of the manuscript.

Abdul Salaam: Conceptualization, literature search, data collection, data curation, and acquisition of relevant scientific resources.

Both authors read and approved the final version of the manuscript and agree to be accountable for all aspects of the work.

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