

## DESCRIPTION OF *DARCHINI (CINNAMOMUM ZEYLANICUM)* IN UNANI MEDICINE: A REVIEW

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### ABSTRACT

*Darchini* is a bark of cinnamon (*Cinnamomum zeylanicum*). It is belongs to family lauraceae. Historically it is used as drug as well as spice and condiment in India. Recently several phytochemicals were identified and obtained from *Darchini*. With these phytochemical constituents several therapeutic activities were scientifically proved by different experimental studies. Besides these, *Darchini* is a very famous drug among Indian system of medicine and has been used therapeutically. In Unani medicine detail description of *Darchini* is

mention in classical literature. Unani physicians were aware about the therapeutic efficacy of *Darchini* since ancient time. In order to obtain desirable or increase therapeutic efficacy several dosage forms were developed and designed by Unani physicians like *Roghan, Tila, Majoon, Jwarish, Khameera, Hab* etc. In these dosage forms *Darchini* used as main ingredient or supportive ingredient. Through this review an attempt has made to reveal the Unani aspect of *Darchini* and describe Unani pharmacological activities in the light of recent experimental studies.

**KEYWORDS:** Unani medicine, *Darchini (Cinnamomum zeylanicum)*, Traditional medicine.

### INTRODUCTION

In Unani medicine mostly herbal drugs are used as whole plant or parts of the plant such as the leaves, flowers and roots which is gentle and safe. The use of whole plant prevents/decreases the side effects that may occur when using isolated components.<sup>[3]</sup> Beside the medicinal action of the herbal drug, it serves several functions in human life such as perfumery, cosmetic, spices and religious rituals. In spices one of the oldest known and

popular spices is cinnamon and also it is the first spices to be traded between Asia and Europe. Its description present in the Bible and has been used in ancient Egypt not only as a medicine and beverage flavouring agent, but also as an embalming agent.<sup>[4]</sup>

The word cinnamon coined from the Greek lexicon Kinnamomon.<sup>[3]</sup> It is very precious spice belongs to lauraceae family and approximately 250 species have been identified among the cinnamon genus, which is scattered all over the world. On the basis of colour, odour, taste, distribution it is divided into different type. The best type of cinnamon is that which is pungent in odour, aromatic and sweet in taste, reddish in colour, present in the form of compound quill and length is about 1 meter.<sup>[6]</sup> According to *Discoridos* (circa 1 century AD) the best variety is black, brownish or red in colour, smooth and closely attached to its stalk. It has some sweetness, saltiness, and irritation. It is not much fragile and its odour dominates all other odour.<sup>[19]</sup> It is obtained from the inner bark of several trees from the genus *Cinnamomum*. Due to its fragrance, it is mainly used in the aroma and essence industries which can be incorporated into different varieties of foodstuffs, perfumes, and medicinal products.

Beside this it is widely used in traditional system of medicine especially in Unani medicine. The classical literature of Unani system of medicine serves detail description about cinnamon like *mahiyat* (morphology), geographical distribution, *Mijaz*, actions (*afaal*), therapeutic (*istemal*) uses etc. To obtained maximum therapeutic effect and easy to use, Unani physician designed it into different dosage form of cinnamon like *roghan*, *tila* etc. Along with the single uses of cinnamon they devised/formulate them into compound formulation with other ingredients/drugs to increase therapeutic effect or to obtained desire effects. So that, several compound formulations are mentioned in Unani pharmacopoeia which consist *darchini* as active ingredient or as ingredient of compound formulations.

#### **Vernacular names of Darchini (*Cinnamomum zeylanicum*)**

Arabic- *Darsini*<sup>[2,27]</sup>, *Qirfa*<sup>[2,30]</sup>, Persian- *Darchini*<sup>[2,27]</sup>, Assamese- *Dalcheni*, *Dalchini*<sup>[2]</sup>, Bengali- *Darchini*, *Daruchini*<sup>[2]</sup>, *Darchini*, *Qalamidarchini*<sup>[23]</sup>, English- Cinnamon Bark, Chinese cassia<sup>[5]</sup>, Cinnamon, Cylon Cinnamon<sup>[21,24]</sup>, Cinnamon<sup>[23]</sup>, Gujarati- *Dalchini*, *Taj*<sup>[2]</sup>, Hindi- *Dalchini*, *Darchini*, *Qalmi darchini*<sup>[2,5]</sup>, *Dalcini*, *Darucini*<sup>[21]</sup>, *Dalchini*, *Qalmidarchini*, *Tavaka*<sup>[23]</sup>, Kannada- *Dalchini Chakke*<sup>[2]</sup>, Kashmiri- *Dalchini Dalchin*, Malayalam- *Karuvapatta*, *Ilavarngathely*, *Ethunai lavangam*<sup>[2]</sup>, Marathi- *Dalchini*<sup>[2]</sup>, *Dalchini*, *Darachini*<sup>[23]</sup>, Oriya- *Dalochini*, *Gudotwako*, *Daruchini*<sup>[2]</sup>, Punjabi- *Dalchini*, *Darrchini*<sup>[2]</sup>,

*Darchini*, *Qirfa*<sup>[23]</sup>, Romi- *Qetarsensan*<sup>[5]</sup>, Sanskrit- *Darusita*, *Tvaka*<sup>[2,23]</sup>, Siryani- *Marsloon*<sup>[5]</sup>, Tamil- *Lavangapatta*, *Karuvapattai*<sup>[2]</sup>, Telegu- *Lavangapatta*, *Dalchinichekka*<sup>[2]</sup>, Urdu- *Darchini*<sup>[2,23]</sup>

### Parts used

- Bark and oil<sup>[22, 31]</sup>

### Mizaj of *Darchini* (*Cinnamomum zeylanicum*)

1. Hot 2° and Dry 2°<sup>[5, 6, 27, 29]</sup>
2. *Roghan-e-Darchini* Hot 3° and Dry 3°<sup>[6]</sup>

### Trade of *Darchini*

The import and export of *Darchini* bark in 1990 to 1995 are as<sup>[1]</sup>

(Quantity in kg and value in Rs)

Year	Import		Export	
	Quantity	Value	Quantity	Value
1990-1991	31556	1073841	3	450
1991-1992	31419	944570	8400	449670
1992-1993	161929	4907351	31	9362
1994-1995	11553	254634	414	67973

### Pharmacological actions

Hazim (Digestive),<sup>[6]</sup> Kasir-e-Riyah (Carminative),<sup>[5,28,2,23,24,22,25,29]</sup> Munaffis-e-Balgham (Expectorant),<sup>[2,6,7,23,24,31]</sup> Muqawwi-e-Dandan (Tonic for teeth),<sup>[7]</sup> Muqawwie-Meda (Stomachic),<sup>[2,7,6,23,28,30,31]</sup> Muqawwi-e-aza-eraesa (Tonic for principal Organs),<sup>[6,28]</sup> Muqawwi-e-dil wa dimagh (Tonic for heart and brain),<sup>[6,28,30]</sup> Muqawwi-e-Kabid (Liver tonic)<sup>[2,7,28, 30]</sup> Muqawwi-e-Asab (Nervine tonic),<sup>[6,23]</sup> Muqawwi-e-Bah (Aphrodisiac),<sup>[6,28,31]</sup> Mufarreh (Exhilarant)<sup>[7,6,28,30,31]</sup> Mufatteh (Deobstruent),<sup>[6,28,29,30]</sup> Moharrik-e-Bah (Sex stimulant),<sup>[2,7]</sup> Mohallil (Anti-inflammatory),<sup>[6,30]</sup> Mudirr-e-Baul (Diuretic),<sup>[2,7,5,6,22,28,30]</sup> Mudirr-e-Haiz (Emmenagogue),<sup>[2,7,5,6,28,30,31]</sup> Mujaffif (Desiccant),<sup>[29]</sup> Musakkin-e-Alam (Analgesic),<sup>[7,23]</sup> Musakkin (Calorific),<sup>[5,23]</sup> Musakkin (Sedative),<sup>[29]</sup> Muskit-e-Janeen (Abortifacient)<sup>[28,30]</sup> Daf-e-Taffun (Antiseptic),<sup>[7,5,28,30,31]</sup> Dafe Tap (Antipyretic)<sup>[5,6,23]</sup> Muharrik (Stimulant),<sup>[7,24,22,31]</sup> Mulayyan(Laxative),<sup>[5,22]</sup> Mulattif (Demulcent),<sup>[2,7,28,30]</sup> Munzij (Coctive, Concoctive),<sup>[5]</sup> Musaffi (Blood purifier),<sup>[6]</sup> Qabiz (Astringent),<sup>[2,7,6,23,24,22,25,31]</sup> Tiryag-e-Samoom (Antidote),<sup>[28,30]</sup> Jazib (Absorbefacient),<sup>[7,31]</sup> Zali (Detergent),<sup>[7,31]</sup> Mukhaddir (Anaesthetic),<sup>[23]</sup> Katil-e-Jarasim (Antibacterial),<sup>[23,26]</sup> Daf-e- Ishal (Antidiarrhoeal),<sup>[23]</sup> Daf-e-Ziabetus (Antidiabetic-leaf),<sup>[25]</sup> Daf-e-Qai (Antiemetic),<sup>[23]</sup> Daf-e-

Tashannuj (Antispasmodic),<sup>[25]</sup> Daf-e-Ufoonat (Antiseptic)<sup>[25]</sup> Mundamil-e-Kurooh (Antiulcer),<sup>[23]</sup> Antiviral,<sup>[23]</sup> Aromatic,<sup>[23,24,22]</sup> Deodorant,<sup>[22]</sup> Moarriq (Diaphoretic),<sup>[23]</sup> Mumallis (Emollient)<sup>[23]</sup> Fungicide,<sup>[23]</sup> Hypotensive,<sup>[23]</sup> Insecticide,<sup>[23]</sup> Larvicide,<sup>[23]</sup> Myorelaxant,<sup>[23]</sup> Muqawwi-e-Raham (Uterotonic),<sup>[23]</sup>

### Main action

Muqawwi-e-Aza-e-Raesa (Strength giving to Principal organs like Brain, heart and liver)<sup>[7,28,31]</sup>

Muqawwi-e-Bah (Aphrodisiac), Muqawwi-e-Basar (Vision improving), Dafe Khafkan (Anti-palpitation)<sup>[28]</sup>

### Therapeutic uses

*Darchini* is the best spice found naturally in terms of its nutritive value and health benefits. It consist healthy and healing property due to the presence of unique bioactive constituents which is identified recently. Beside the uses as spice, *darchini* is used extensively in Unani system of medicine from ancient time for prevention or to treat the disease.

### Uses in Mouth and throat disorders

- It is used in *bakhr-ul-fam* (Halitosis) and produce good smell in breath.<sup>[2,7,6,31,22,23]</sup>
- It also removes cough from throat and cure the hoarseness of voice.<sup>[6]</sup>
- Small pieces of cinnamon can be chewed or gargled with cinnamon water which serves as a good mouth freshener.<sup>[3]</sup>
- For strengthening the tooth, *Darchini* is mixed with tooth powder.<sup>[7,31]</sup>
- *Darchini* is also useful in toothache and stomatosis.<sup>[22,23,23]</sup>
- Due stimulant activity of *Darhcini*, it is useful for relieving paralysis of tongue.<sup>[24]</sup>

### Uses in gastrointestinal ailments

- It is useful for checking *Ghasiyan* (nausea) and *Qai* (vomiting).<sup>[6,21,22,25,23]</sup>
- According to *Ahmad bin abi Khalid*, the uses of *darchini joshanda* (decoction) with mastagi (*Pistacia lentiscus*) cures hiccup.<sup>[5,6,28]</sup>
- Grounded cinnamon is used in diarrhoea and dysentery.<sup>[25,24,21,22]</sup>
- Powder of *Darchini* is mixed with other suitable drugs and used for the treatment of diarrhoea, dysentery and in *zof-e-meda* (weakness of stomach).<sup>[7,31]</sup>

- *Darchini* is the best drug for *baroodate Meda*, for this purpose it is mixed with food of the patients.<sup>[6]</sup>
- According to the *Razi*, *darchini* has hot *mizaj* so it digests *Sakeel Ghiza* (heavy diet) easily and prevents stomach pain. It has less antifatulent property than *filfil (Piper nigrum)* and *suranjan (cholchicum luteum)*.<sup>[5]</sup>
- It has *muqawwi* (tonic) effect for *meda wa zigar* (stomach and liver) and *qabiz* (astringent) for *ama* (intestine).<sup>[7]</sup>
- The internal use of *darchini* is useful for loss of appetite, cramps of stomach, gastric irritation, bloating, flatulence and dyspeptic complaints such as mild spastic conditions of the gastrointestinal tract.<sup>[25]</sup>
- It also has several other beneficial effects in gastrointestinal ailments such as flatulence,<sup>[23,22]</sup> anorexia,<sup>[23]</sup> bloating,<sup>[23]</sup> dyspepsia,<sup>[23]</sup> enterospasm,<sup>[23]</sup> and Hepatosis.<sup>[23]</sup>

#### Uses in respiratory ailments

- *Darchini* is useful for several respiratory ailments such as *zeequnnafs* (asthma)<sup>[2,22,23,28]</sup>, bronchosis,<sup>[23]</sup> cold,<sup>[23]</sup> cough,<sup>[29,28,23,]</sup> dyspnea,<sup>[23]</sup> flu,<sup>[23]</sup> and sinusoids.<sup>[23]</sup>
- Mixture of *Darchini* and *shahad* (honey) is useful for curing the *khansi* (cough), *najla muzmin* (chronic cold) and *zeequnnafas* (asthma) and decoction (*Joshanda*) is also used for this purpose.<sup>[7,5,6,31]</sup>
- *Roghan-e-darchini* (*darchini* oil) is beneficial for several diseases like cold, pain and other inflammatory conditions due to cold and it also has best result for *ra'asha* (tremors).<sup>[6]</sup>
- It helps in expectoration of *Balgham* (cough) by the action of *muharrrik* (stimulant) effect over respiratory system.<sup>[7,6]</sup>

#### Uses in eye

- *Darchini* clear the *dhundh* (corneal opacity) and strengthen the eye sight by the both local and oral application.<sup>[5,6]</sup>
- Uses of *darchini* in both oral and local application remove *zulmate ain*.<sup>[27]</sup>
- Uses of *darchini* in both oral and local application (as *surma*) has *muqawwi* (tonic) effect for eye sight.<sup>[30,28]</sup>

#### Uses in ear

- *Darchini* has beneficial effects in ear ache.<sup>[6]</sup>

**Uses in musculoskeletal ailments**

- *Darchini* is employed as counter irritant in the treatment of muscular strain, rheumatism and inflammatory conditions.<sup>[21]</sup>
- It has *musakkin-e-alam* (analgesic) effect in case of *dard* (pain).<sup>[7]</sup>
- It has many other beneficial effects to reduce/or cure the musculoskeletal ailments such as arthrosis,<sup>[23]</sup> lumbago,<sup>[23]</sup> rheumatism,<sup>[23]</sup> spasm,<sup>[23]</sup> cramp.<sup>[23]</sup>

**Uses in skin disease and as cosmetics**

- *Darchini* is used as *tila* to treat different skin disorder like *bahak wa kalf* (pityriasis and melasma)<sup>[7,2,31]</sup>
- Uses of *darchini* in both oral and local application have beneficial effect in *bakhar, kalf* and *namash* (Pityriasis, ozaena and naevus).<sup>[27]</sup>
- The application of *darchini* powder with honey (*shahad*) is useful in pimples, acne, pigmentation, decolouration and other skin disorders.<sup>[5,30,31]</sup>
- Local application of *darchini's* powder with honey is useful in *kalf wa lamsh* and with *sirka* (vinegar) useful in *basoor-e-labniya* and *kuba mutafarreh*.<sup>[6]</sup>
- It is also useful for restoring normal colour of the face.<sup>[22]</sup>

**Uses in fever**

- *Darchini* has beneficial effect in fever and also prevent form shivering.<sup>[23,22]</sup>
- It prevents shivering in case of fever especially in *tape balghmi wa saudavi*.<sup>[6]</sup>

**Uses in urinary system ailments**

- *Darchini* is useful in painful micturition and renal pain.<sup>[5]</sup>
- Decoction of *darchini* is used in *ehtebas-e-baul* (anuria).<sup>[7,2]</sup>
- It also used in other urinary system ailments like uropathy<sup>[22]</sup> and nephrosis.<sup>[23]</sup>

**Uses in gynaecological disease**

- *Darchini* is put into uterus with egg yolk has beneficial effect in uterine disease.<sup>[6]</sup>
- Uses of *Darchini* as oral and as *humool* (pessary) in uterus have beneficial effects for uterine disease. If it mixed with *charbi* (fat), *roghan-e-zaitoon* (olive), *mom* (bees wax) and *ande ki zardi* (egg yolk) increases its efficacy in uterine disease.<sup>[6]</sup>
- Uses of *darchini* with *murh* (Commiphora myrrha) as pessary (*humool*) exhibit *iskat-e-jneen* (abortion).<sup>[5,30]</sup>

- According to the *Masihi*, *darchini* is used in uterine pain, flatulence and to remove or as prevention of infection.<sup>[5]</sup>
- According to *Ibn-e-Masooya*, It removes *sudda* (obstruction) and useful in *ehtebas-e-tams* (amenorrhoea) and *usr-ul-baul* (dysuria).<sup>[5,6]</sup>
- Root bark oil act as stimulant in *ehtebas-e-tams* (amenorrhoea).<sup>[25]</sup>
- *Darchini* also has beneficial effect in other gynaecological disorder such as amenorrhoea,<sup>[23]</sup> dysmenorrhoea,<sup>[23]</sup> frigidity,<sup>[23]</sup> leucorrhoea,<sup>[23]</sup> menorrhagia,<sup>[23]</sup> prolapse<sup>[23]</sup> and veginosis.<sup>[23]</sup>

#### Uses in cardiovascular system

- *Darchini* has beneficial effect in *khafqan* (palpitation).<sup>[6,27]</sup>
- Due to its smell/fragrance it shows *mufarreh* (exhilarant) effect over *dil wa dimagh* (brain and heart).<sup>[7,27]</sup>
- According to Ibn Sina somewhat astringent property presents in *Darchini* and its fragrance and *hiddat* produces *mufarreh* (exhilarant) effects over heart. Due to this property it act as *tiryaaqat* and shows beneficial effect in all type of infection and putrefaction which is produced by *akhlal-e-fasida*.<sup>[5]</sup>
- *Darchini* has beneficial effect in cardiac disease<sup>[22]</sup> and high blood pressure.<sup>[23]</sup>
- Cinnamaldehyde (active constituent of *darchini*) has hypotensive, spasmolytic effect and increase peripheral blood flow.<sup>[25]</sup>

#### Uses in nervous system

- *Darchini* improves the memory power and it also prevents from memory loss.<sup>[6,5]</sup>
- It also has beneficial effect in nerve and brain disorders like *junoon*, *vahshat*, *vasvasa*.<sup>[6]</sup>
- Pest of *Darchini* is applied over head to relive the headache.<sup>[6,28,23]</sup>
- *Darchini* grind with water and apply over forehead to treat headache due to cold.<sup>[7]</sup>
- It treats *isterkha* (paralysis), *daurane sar* (vertigo) and useful for *laqwa* (facial paralysis) and *sara* (epilepsy).<sup>[6]</sup>
- It has *ikseer* effect to treat *rasha* (tremor).<sup>[6]</sup>
- *Darchini* is used in other neurological disorder like *nisyan* (amnesia), *sahar* (insomnia), *waj-ul-asab* (neuralgia), *istirkha* (paralysis) and *ghashi* (syncope),<sup>[23]</sup>
- Cinnamaldehyde exhibits CNS stimulant effect at high doses.<sup>[25]</sup>



**Uses as antimicrobial (*Daf-e-Taffun*)**

- It inhibits, prevent and also remove the *taffun* (infection).<sup>[7,23]</sup>
- Hot *mizaj* and *mulattif* property of *darchini* dries or correct *akhlat-e-fasida* by which it prevents and removes the *taffun* (infection).

**As aphrodisiac**

- Only oil of *darchini* or it mixed with other suitable oil is used as *tila* over sexual organ for strengthening the sexual power and in *zof-e-bah* (sexual debility). Also *Darcini* grind with other suitable drugs and used as *zimad* (paste) in *zofe bah* (sexual debility).<sup>[7,2]</sup>

**Uses in wound**

- It has beneficial effect in chronic wound.<sup>[27]</sup>

**Uses in Poisoning**

- In case of scorpion and other insects bite, the application of *darchini* oil has beneficial effects like decrease the pain and itching.<sup>[7,28,30]</sup>
- It is also useful orally during ingestion of toxic drug and poisons.<sup>[5,6]</sup>

**Other uses**

- In case of hydrocele, it has good effect and also useful in *fatak* (hernia).<sup>[31,6]</sup>
- According to the Sufiyan Undlusi, *darchini* is useful in *Istisqa-e-Zaki* (ascites) and *Istisqa-e-Lahmi* (anasarca) due to its diuretic property.<sup>[6,31]</sup>
- *Darchini* is useful in different ailments such as bleeding, fistula, impotence, leukemia, lymphoma, proctosis, tumor, ulcer, wart, wound etc.<sup>[23]</sup>

**Uses of *darchini* in deferent dosage form:**

- *Arq-e-Darchini* has fast acting effect in comparison to its bark and it also showed beneficial effect in deafness if used as eardrop<sup>[6]</sup>. Orally *arq* has several therapeutic uses like increase digestion, prevent and remove flatulence and shows beneficial effects in jaundice and piles.<sup>[6]</sup>
- *Rooh* of *darchini* has *hazim* (digestive) property and along with perfumery uses, it also used in several formulation of *tila*.<sup>[6]</sup>
- *Roghan-e-Darchini* (Cinnamon oil) is useful in anorexia, inflammations, stomachalgia, odontalgia, vomiting, tubercular ulcer<sup>[22]</sup>, *rasha* (termer) and neurological disorder like *falij* (hemiplegia), *laqwa* (facial paralysis) etc.<sup>[27]</sup>



- Eugenol content of the leaf oil has antiseptic and anaesthetic property and it is not interchangeable with the bark oil.<sup>[25]</sup>

### Contraindication

- *Darchini* is contraindicated in stomach and duodenal ulcers.<sup>[25]</sup>
- *Darchini* is contraindicated for pregnancy because it causes *isqat* (abortion) and if it put into uterus also causes abortion.<sup>[6]</sup>

### Doses

- 1 to 2 gms.<sup>[2,7,31]</sup>
- Powder- 7-10 gms.<sup>[6]</sup>
- Rooh- 2-5 drops.<sup>[6]</sup>

### Important compound formulations of Darchini

There are the following compound formulations in which Darchini is used as main ingredient or as supportive ingredient in Unani system of medicine.

- ❖ *Arq-e-Chob Chini* is used in malankholiya, general weakness and sexual debility in the dose of 60 ml.<sup>[33,34]</sup>
- ❖ *Arq-e-Hazim* is used in weakness of the stomach and dyspepsia in the dose of 25-50 ml.<sup>[35]</sup>
- ❖ *Arq Ma'ullaham Khaas* is used in sexual debility and general debility in the dose of 60 ml with 6 gm *Laboob-e-Kabir*.<sup>[25,33]</sup>
- ❖ *Dawa-ul-Misk Motadil Jawahar Wali* is used in general debility, weakness of the principal organs like heart, brain and liver and Palpitation in the dose of 5 gm.<sup>[36,33,32]</sup>
- ❖ *Dawa-ul-Misk Motadil Sada* is used as a tonic to stomach, liver and heart in the dose of 3-5 gm.<sup>[41]</sup>
- ❖ *Habb-e-Afyun* is used in catarrh and coryza in the dose of 125-250 mg.<sup>[37]</sup>
- ❖ *Habb-e-Chobchini* is used in facial paralysis, arthralgia, gout, syphilis and as blood purifier in the dose of 5-10 gm.<sup>[38]</sup>
- ❖ *Habb-e-Irqun Nisa* is used in sciatica, arthralgia, neuralgia etc. in the dose of 400 mg.<sup>[35]</sup>
- ❖ *Habb-e-Munaish* is used in Sexual debility, premature ejaculation etc. in the dose of 250-500 mg.<sup>[40]</sup>
- ❖ *Habb-e-Nazla* is used in catarrh, headache and neurasthenia in the dose of two pills (each 220 mg.) twice a day.<sup>[36,32]</sup>

- ❖ Habb-e-Shahm-e-Hanzal is used in colic due to obstruction, dysentery in the dose of 3 to 5 gm.<sup>[39]</sup>
- ❖ Halwa-e-Mugawwi-e-Basar is used in catarrh, asthenopia, chronic coryza etc. in the dose of 35 gm.<sup>[39]</sup>
- ❖ Halwa-e-Salab is used in sexual debility, oligospermia, general debility etc. in the dose of 10 to 20 gm.<sup>[39,33,32]</sup>
- ❖ Halwa-e-chobchini is used in sexual debility, as blood purifier etc in the dose of 12 gm.<sup>[33]</sup>
- ❖ Itrifal Muqawwi-e-Dimagh is used in weakness of brain and chronic coryza in the dose of 5-10 gm.<sup>[37]</sup>
- ❖ Itrifal-e-Muqawwi-e-Basar is used in flatulence, stomach-ache, indigestion in the dose of 5 to 10 gm.<sup>[39]</sup>
- ❖ Laboob Kabeer Khaas is used in sexual debility, general debility, neurasthenia, weakness of the heart, brain, kidney and bladder, oligospermia and attenuated semen in the dose of 6 gm with 60 ml *Maullaham Khaas* or milk once a day.<sup>[35]</sup>
- ❖ Halwa Gheekwar is used in arthralgia, neuralgia, cough and asthma in the dose of 12-25 gm.<sup>[36,32]</sup>
- ❖ Jawarish Bisbasha is used in weakness of the stomach, dyspepsia, bleeding piles, flatulence, nausea, abdominal discomfort in the dose of 5-10 gm.<sup>[40,41,32]</sup>
- ❖ Jawarish Darchini is used in hyperptyalism, halitosis, and useful in stomach kidney and bladder disease in the dose of 5 to 10gm.<sup>[39,34]</sup>
- ❖ Jawarish-e-Darchini Qawi is used as renal tonic, weakness of the stomach, liver and kidney and flatulence in the dose of 5 to 10 gm.<sup>[39]</sup>
- ❖ Jawarish Kundur is used in polyuria in the dose of 5-10gm.<sup>[40]</sup>
- ❖ Jawarish Jalinoos is used in flatulence, sexual debility, gout, cough, hemorrohid and weakness of the principal organs like heart, brain, liver in the dose of 5-7gm.<sup>[41,34,33,32]</sup>
- ❖ Jawarish-e-Kamooni Kabir is used in hyperacidity, fever, hiccough, flatulence, ascites in the dose of 5 to 10 gm.<sup>[39,33,32]</sup>
- ❖ Jawarish-e-Muqawwi-e-Meda is used in weakness of the stomach in the dose of 5-10 gm.<sup>[38,32]</sup>
- ❖ Jawarish Ood Shirin is used in weakness of the stomach, diarrhoea, dyspepsia, anorexia in the dose of 5 gm twice a day.<sup>[36,40,41,34,33,32]</sup>
- ❖ Jawarish Ood Tursh is used in weakness of the stomach, vomiting, nausea etc. in the dose of 5-10gm.<sup>[40,41,34,33,32]</sup>

- ❖ Jawarish-e-Podina is used in diarrhoea, dyspepsia, anorexia, bilious diarrhoea etc. in the dose of 5-10gm.<sup>[40,41]</sup>
- ❖ Jawarish Safar Jali Mushil is used in constipation and colic in the dose of 10 gm.<sup>[36,39,32]</sup>
- ❖ Jawarish Shaharyaran is used in constipation, colic, dropsy, weakness of the liver and stomach in the dose of 5-10gm.<sup>[40,41]</sup>
- ❖ Jawarish Zarooni Sada is used in weakness of the kidney, renal calculus, vesicular calculus, nephralgia, lumbago etc. in the dose of 5-10gm.<sup>[40,41]</sup>
- ❖ Labub-e-Muqawwi-e-Bah is used in sexual debility, neurasthenia in the dose of 5-10gm.<sup>[38]</sup>
- ❖ Laooq-e-Zeekunnafs Balghami is used in asthma and phlegmatic cough in the dose of 5-10 gm.<sup>[38]</sup>
- ❖ Majun Arad Khurma is used in sexual debility, premature ejaculation and attenuated semen in the dose of 10 gm at morning with 1 pill of *qurs qalai* along with 250 ml of milk.<sup>[36,32]</sup>
- ❖ Majoon Boolis is used in weakness of the brain, amnesia, nisyan in the dose of 5 to 10 gm.<sup>[39,33]</sup>
- ❖ Majun Azaraqi is used in neurasthenia, hemiplegia, facial paralysis and arthralgia in the dose of 3 gm. twice a day.<sup>[36,33,32]</sup>
- ❖ Majun Barhami is used in weakness of the brain and memory in the dose of 10 gm.<sup>[36,32]</sup>
- ❖ Majun Dabid-ul-Ward is used in hepatitis, gastritis, metritis, weakness of the liver and stomach in the dose of 5 gm.<sup>[36,33,32]</sup>
- ❖ Majoon Ispand Sokhtani is used in premature ejaculation, spermatorrhoea, neuralgia etc. in the dose of 5-10gm.<sup>[40,32]</sup>
- ❖ Majun Jalinus Luluvi is used in debility, sexual debility, neurasthenia and weakness of the liver in the dose of 5 gm.<sup>[36,40,33,32]</sup>
- ❖ Majoon Rahul Momineen is used in asthma, cardiac asthma, palpitation, sexual debility etc. in the dose of 5-10gm.<sup>[40,33,32]</sup>
- ❖ Majoon Ushba is used in scabies, pruritus, arthralgia etc. in the dose of 5-10 gm.<sup>[40,33,32]</sup>
- ❖ Majun Pumba Dana is used in attenuated semen, premature ejaculation, spermatorrhoea etc. in the dose of 6 g twice a day.<sup>[35]</sup>
- ❖ Mufarreh Yaqooti Motadil is used in sexual debility, weakness of the principal organs like heart, brain and liver and palpitation in the dose of 5 gm.<sup>[36,32]</sup>
- ❖ Nawed-e-Nau is used in habitual abortion, atony of the uterus, weakness of the Intestines etc. in the dose of 6 gm with milk twice a day.<sup>[35]</sup>

- ❖ Namak Sulemani is used in dyspepsia, gastralgia, constipation etc. in the dose of 0.5 - 1 gm with water after meals.<sup>[35]</sup>
- ❖ Qurs Pudina is used in weakness of the stomach in the dose of two tablets (each 775 mg) twice a day.<sup>[36,32]</sup>
- ❖ Roghan-e-Darchini is used in scorpion bite, arthralgia, headache, sexual debility, neurasthenia etc. in the dose of 2-5drops.<sup>[40,32]</sup>
- ❖ Roghan Surkh is used in hemiplegia, facial paralysis, arthralgia, sciatica, gout, inflammation and backache in the dose of Q.S. for external use.<sup>[36,41,33,32]</sup>
- ❖ Safoof Darchini wala is used in spermatorrhoea, leucorrhoea, aphrodisiac etc. in the dose of 10 gm.<sup>[33]</sup>
- ❖ Sharbat Nankhwah is used in anorexia and flatulence in the dose of 25 ml.<sup>[36,32]</sup>
- ❖ Sharbat Salajeet is used in premature ejaculation in the dose of 6 ml twice a day.<sup>[36,32]</sup>
- ❖ Tiryaq-e-Samania is used in hemiplegia, facial paralysis, tremor, epilepsy, irritation, flatulence etc. in the dose of 3-5gm.<sup>[40,41,34,33,32]</sup>
- ❖ Tila-e-Darchini wala is used to increase size of penis locally.<sup>[33]</sup>
- ❖ Tila Nishat Angez is used in male sexual disorder locally at bedtime.<sup>[35]</sup>

## Scientific studies

### Pharmacological studies

#### Antioxidant

The methanolic extract of *Cinnamon* contains a number of antioxidant compounds which can effectively scavenge reactive oxygen species including superoxide anions and hydroxyl radicals as well as other free radicals under *in vitro* conditions.<sup>[10]</sup>

#### Antiulcer

*Cinnamon* extract have the ability to inhibit both growth and urease activity of *H. pylori in vitro*.<sup>[10]</sup>

#### Antibacterial

It has potential effect against several microorganism like bacteria (Cholera, Escherichia)<sup>[23]</sup> and fungus (Candida, mycosis).<sup>[23,25]</sup> The essential oil of *Darchini* is found to check the growth of *vibrio cholera*, *Sarcina lutea* and *salmonella paratyphi*.<sup>[26]</sup> Water and ethanol extract of cinnamon possessed antibacterial activity proved by using disc diffusion method.<sup>[13]</sup>

It has antiseptic effect, antidiarrhoeal properties and also shows a powerful germicidal activity.<sup>[21]</sup>

### **Antidiabetic**

An experimental study reveals the effect of cinnamaldehyde for uses in both hyperglycemia and hyperlipidemia<sup>[10]</sup>. Another study also proves the antidiabetic activity of cinnamon.<sup>[12]</sup>

### **Anti-inflammatory**

Type-A procyanidine polyphenols (TAPP) (extracted from Cinnamon bark) was showed significant therapeutic potential in animal models of inflammation and rheumatoid arthritis in rats.<sup>[11]</sup>

### **Antihypertensive**

The ethanol extract of cinnamon is effective in producing hypotensive responses in normotensive rat and salt-loaded hypertensive rat,<sup>[15]</sup>

### **Anti-infertility**

It showed significant anti-fertility effect on male infertility.<sup>[16]</sup>

### **Analgesic and healing effect**

2% cinnamon ointment was used to assessed the analgesic and healing effect on episiotomy incisions and it showed significant result.<sup>[17]</sup>

### **Hepatoprotective activity**

Cinnamon extract was showed preventive activity of CCl<sub>4</sub>-induced hepatic damage in rats<sup>[18]</sup>

### **Repellency and insecticidal activity of essential oil**

Cinnamon essential oil showed both repellency and insecticidal activity against ants<sup>[19]</sup>.

### **Anti-carcinogenic activity**

*Darchini* has some beneficial effect in cancer of different part of the body such as bladder, breast, colon, kidney, liver, rectum, stomach, vagina etc.<sup>[23]</sup> and decoction of *darchini* bark is used to treat cancer of stomach, rectum and uterus.<sup>[24]</sup>

**Description of validation of Unani pharmacological actions of *Darchini******Muqawwi-e-hafiza* (Memory enhancing activity)**

As per Unani classical literature *Darchini* possessed the memory enhancing property.<sup>[5,6]</sup> This action has been validated by Malik, *et. al.* in 2014 in an experimental study. In this study object recognition test was done on rat brain.

***Daf'fe-ta'affun* (Antimicrobial activity)**

According to Unani classical literature *Darchini* possessed daf-e-ta'ffun activity.<sup>[6,33]</sup> This activity was validated by Ranasinghe et al, 2002 as per this study *Darchini* showed protective action against post harvest fungal disease of banana.<sup>[42]</sup> Antibacterial activity of darchini was also validated by Guerra *et al*, 2011. As per this study *Darchini* suppressed the growth of *Acinetobacter* species and showed antibacterial modifying activity.<sup>[43]</sup>

***Muhallil-e-auram* (Anti-inflammatory activity)**

*Darchini* was used as anti-inflammatory (*Muhallil-e-auram*) agent by Unani Physicians.<sup>[6,30]</sup> This activity was proved scientifically with an experimental study on rats. In this study ethanolic extract was used and anti-inflammatory activity was validated in both *in-vitro* and *in-vivo* experiments.<sup>[44,45]</sup>

***Muqawwi-e-bah* (Aphrodisiac activity)**

*Darchini* was mentioned as *muqawwi-e-bah* agent in Unani classical literature.<sup>[6]</sup> This activity was validated experimentally on mice by Shah *et. al.* (1998).<sup>[46]</sup>

***Mudir-e-haiz* (Emmenagogue)**

*Darchini* was used by Unani physician as *mudir-e-haiz* agent in *usr-e-tams* (dysmenorrhoea).<sup>[5,6,30,33]</sup> This activity of *Darchini* was scientifically validated by Jaafarpour *et. al.* (2015) by randomized double blind clinical trial.<sup>[47]</sup>

***Muqawwi e fi'l-i-inhidam* (Gastro-protective effect)**

*Darchini* possessed Gastro-protective effect like *kasir-e-riyah*, *Daf-e-qabz*, *Muqawwi-Ghisha-e-mukhati Meda*, *Muqawwi-e-meda* etc mentioned in Unani classical literature.<sup>[5,6,23]</sup> The above mentioned action was validated as it possessed anti-ulcer activity and protect gastric mucosa from *H. pylori* bacteria.<sup>[48,49]</sup>

## CONCLUSION

*Darchini* is a well known spice or condiment in India. It also possessed several therapeutic efficacy. Several scientific studies were carried out on *darchini*. Through these studies several biochemical constituents like Cinnamic acid, Cinnamaldehyde, Eugenol and essential oils were obtained. Several Unani pharmacological studies have been validated. This validation authenticates the therapeutic efficacy of this drug. It possessed antioxidant, antibacterial, anti-inflammatory, analgesic, hepatoprotective, antiulcer, antidiabetic effects etc. At the end, it was concluded that *Darchini* is an important drug as far as Unani medicine concerned. Apart from experimental studies still, further detailed clinical research is required to explore the full therapeutic potential of this drug in order to establish it as standard drug.

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