



A CRITICAL REVIEW ON KARVEER

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ABSTRACT –

A section of *Ashtanga Ayurveda* called *Agada Tantra* or toxicology, comprises the study of poisons. It covers a variety of natural and synthetic poisons and toxic substances in details along with their antidotes, warning signs and treatment options for poisoning caused by bites from snakes, insects, spiders, rodents and other creatures as well as from combinations of various poisons and lethal doses of various poisons. It also discusses how law and medicine interact, as well as the legal foundations of medical ethics and standards. The *Agada Tantra*, also known as *Danshtra* or *Visha Chikitsa*, discusses numerous ways to get rid the toxins from body and suggests antidotes for particular toxins. It treats a number of organic toxins. It covers a broad spectrum of natural toxins coming from wildlife such as animals, birds, insects, etc., plants such as herbs (belladonna, aconite, etc.), vegetables, minerals (leads, mercury, arsenic, etc.), and synthetic poisons made from dangerous pharmaceuticals. The medicinal properties and clinical uses of thousands of plants have been described in *Ayurvedic* classics. *Karveer* is potentially lethal plants after ingestion. The plant contains a variety of cardiac glycosides including nerifolin thevatin A, thevatin B, oleandrin etc. Ingestion of *Karveer* result in nausea, vomiting, abdominal pain, diarrhoea, dysarrhythmia and hypocalcaemia in most cases. Most parts of the *Karveer* plant are poisonous its seeds are mainly used for suicidal poisoning. This article compiles all the information related to *Karveer* such as introduction, historical review, fatal dose, fatal period, *karma*, indication, therapeutic action, phytochemicals, sign and symptoms of its toxicity, medico legal aspects, Pharmacological activity and postmortem appearance.

Key words: *Agad Tantra, Ayurveda, Visha, Karveer*

INTRODUCTION-

Ayurveda has richest source of precursor health knowledge and treatment as well as preventive and curative wisdom. Plants are the primary source of medicine. A number of compounds have been isolated from medicinal plants and bring in use for the mankind; however, most of these medicines have been withdrawn because of their toxicity or adverse effects.^[1]

Herbal poisonous materials are very much effective to change the body's physiology quickly as per the need, because these materials are having the pharmacological properties like, Laghu, Ashu, Yogvaha, Vyavai, Vikashi, Teekshna, Ushna, Apaki etc.^[2]

Some herbs used in Ayurveda, comes under schedule E (1) [Rule 161(E) OF Drugs and Cosmetics Act, 1940, one such plant is *Nerium indicum* Mill. (*Karveera*). Schedule E (1) is the List of Poisonous Substances under

Ayurvedic and Unani system of Medicines. Hence their dose and usage are to be monitored. *Karveera* is being used in Ayurvedic medicines since ages and patients have been benefitted from them. It is being used both locally and internally. There are many formulations in *Charaka and Sushruta samhita* for its Internal use in Skin and Abdominal diseases. [3]

BOTANICAL DESCRIPTION - *Nerium indicum* is an evergreen shrub or small tree in the Dogbane family Apocynaceae. It has synonyms like *Nerium oleander* and *Nerium odorum*. It is also known as oleander from its superficial resemblance to the unrelated plant Olive olea. The white and red flowered variety both are equated with *Nerium indicum*. It is commonly found as an ornamental shrub in the gardens throughout India. It is cultivated all over the world, especially in south-west Asia. *N. indicum* is exclusively native to India, Bangladesh, Nepal, Myanmar and China. It is about 5 meter tall, large glabrous, erect shrub. It has linear-lanceolate, dark green shiny and thickened leaves. Flowers are fragrant, red, white and rose-coloured. Whole plant of *N. indicum*, especially roots are highly toxic. Generally, the parts used for medication are roots and leaves. The chief resources of the traditional Ayurvedic knowledge of medicinal plants, the Samhitas and Nighantus also described the two main varieties of *Karveera*, the white and red ones, which have been botanically identified as *Nerium indicum*. In Raj Nighantu a total of four kinds of *Karveera* are described, viz. white, red, yellow and black. Botanically, the yellow variety is *Thevetia peruviana* (Pers.) while the black variety is still not known^[4].

VERNACULAR NAMES

Hindi Name- Kaner, Kanail

Telugu Name- ErraGanneru, Jannerat

English Name- Indian Oleander

Bengali Name- Karavi Marathi Name- Kanher

Gujarati Name- Kaner, Karena

Tamil Name- Arali

Arabian Name - Sammulhibar

Farsi name - Kharjahara

SANSKRIT SYNONYMS

Asvamaraka, Hayamara, Hayamaraka - kills horse

Chandataka, Pratihara

Abjabjabhruta- Seeds resembles to lotus seed⁵

VARITIES OF KARVEER –

According to Bh.P⁶–

- **Peet Karveer**(*Thevetia nerifolia* Juss)
- **Shweta & Rakta Kaeveer** – *Nerium odorum* Soland

According to API⁷ –

- **Peet Karveer**(*Thevetia nerifolia* Juss)
- **Shweta & Rakta Kaeveer** – *Nerium indicum* Mill

TAXONOMY⁸-

Kingdom- Plantae

Subkingdom- Viridiaeplantae

Infrakingdom- Streptophyta

Superdivision- Embryophyta

Division- Tracheophyta

Subdivision- Spermatophytina

Class- Magnoliopsida

Superorder- Asternae

Order- Genitaneles

Family- Apocyanaceae

Genus - *Nerium*

AYURVEDIC PROPERTIES⁹ –

- Rasa – Katu, Tikta & Kashaya
- Guna- Laghu, Ruksha& Tikshna
- Virya- Ushna
- Vipaka - Katu

INDICATION –

- **Aacharya Charaka** has frequently indicated it in *Kustharoga* (skin diseases). He mentioned *Karvira* as one of the *Kusthaghna* dravya, i.e. alleviates different types of skin disorders. For the treatment of *Kustha*, he recommended the use of *Karveera* intake orally as well as locally¹⁰. Many formulations of *Karveera* for external use are described in *Aaragvadhyaadhyaya* chapter of *Charaka Samhita*¹¹.
- **Aacharya Sushruta** indicated *Karvira* in the treatment of *Ashmari* (stones), *Updansh* (gonorrhoea), *Bhagandara* (fistula) and different types of skin disorders. He has suggested application of *Karvira* paste for treating alopecia, and root powder mixed with water for venereal disease. *Sushruta* quoted “*Karvira soma*” also in *Chikitsa sthana*, *Svabhavapratisedhniyamrasayanam* as one of the 24 varieties of soma which is used as *Rasayana*. *Karvira* is one of the eight *moolavisha*’s mentioned in classics¹²⁻¹⁵.
- **Aacharya Vagbhata** also indicated it in the treatment of skin diseases as *Kikkis* (*Striae gravidarum*) and *Indralupta* (hair loss). Fine paste of *Dugdhika* (*Euphorbia thymifolia*) and *Karveera* made with milk is applied to scalp to cure *Palitya* (whitening of hair)¹⁶⁻¹⁸.

Other Uses- Apart from use in Medicinal preparations this plant is important in Jyotish and Tantrik Vidyas (Astrological studies). *Karveer* is used in ‘Aakarshan mantra’ (For Attraction) and for ‘vashikaran’(Hypnosis) purposes in Tantra vidya¹⁹.

The plant grows wild in all parts of our country. All parts of plants are poisonous containing several cardiac glycosides namely **neriodorin, neriodorein and Karabin**. This small evergreen shrub is wild in Afghanistan and Northern India and cultivated in gardens.

The nectar yields poisonous honey. The Principle action of **neriodorin** is same as that of digitalis causing death from cardiac failure. **Neriodorein** has picrotoxin-like effect, i.e. it causes muscular twitching and titanic spasms more powerful than those of strychnine. **Karabin** acts on the heart like digitalis and on the spinal cord like strychnine.

SHODHAN -

Shodhan of *Visha dravya* is also an important procedure which makes the toxic drug useful for there therapeutic use. Plants are classified into *Mahavisha* and *Upvisha* on the basis of their potency. Also, Acharya Charka mentioned that, any poison if processed or used properly can act as a potential medicine and any medicine if used improperly can be a fatal poison. [20]

Karveera (*Nerium indicum*)-. Roots are purified by *Swedan* process in *Dola Yantra* using *Godugdh* for 3 hours, then washed with water and dried. After *Shodhana* amount of Oliandrin get decreased. [21]

EFFECTS OF POISONING²²-

- Ingestion of this can affect the- **G.I.T, the heart and CNS**
- **G.I.T-** nausea and vomiting, excess of salivation, abdominal pain, diarrhoea-that may or may not contain blood.
- **Cardiac Symptoms** -irregular heart rate,Tachycardia, Extremities may become pale and cold due to poor or irregular circulation.
- **CNS symptoms-** drowsiness, tremors or shaking of muscles, seizures, collapse and even coma that can lead to death,
- Other symptoms** – Jaundice, Renal Failure, ECG Changes, Sinus bradycardia, AV block I &II, ST depression, Ventricular and atrial ectopic.
- Oleander sap can cause skin irritation, severe eye inflammation, and allergic reaction characterized by dermatitis

Fatal Dose – Fatal dose is 15-20g of root.

Fatal Period- Fatal period usual is 24-36 hrs.

CHEMICAL CONSTITUENTS²³–

In the root bark: Plumericin, alpha-amyrin, beta-sitosterol, kaempferol,cardioactive glycosides named odorosides A-H.

In the leaves: Cardiac glycosides kaneroside, neriumoside, digitoxigenin, alpha –L-olendroside -5α-adynerin and other glycosides.Gentiobiosyl – oleandrin, odoroside A and oleandrin were the main glycosides identified.

FORMULATIONS²⁴–

1. *Sidhma kuthhar Yoga*
2. *Kushthghna Mahakashaya*
3. *KusthadyaTailam*.

4. *ShwetKarveeradyaTailam/lepa*
5. *ShwetKarveerPallavadyaTaila*
6. *Kanakshiri Tailam*
7. *Mahaneel Tailam*
8. *Vidangadi Tailam*
9. *Mahavajrak Tailam*
10. *Karveer siddha Tailam in Apachi chikitsa.*
11. *Lepa of Karveer with Sheeta Dravayas is useful in Madatyayjanit Daha.*
12. *Karveeradya lepa*
13. *Palitya nashak lepa*
14. *Jyotishmati Tailam*
15. *Bhadrakshayadi Tailam*
16. *Karveeradi Agad*
17. *Sahacharadi Tailam*
18. *Jeemootadi Tailam*

MEDICOLEGAL ASPECTS²⁵

1. Suicide is common among village girls, using it as a paste or decoction.
2. It is used as an abortifacient, applied both locally and internally.
3. Homicide is rare.
4. Accidental poisoning is sometimes met with when decoction is used-
 - a. Externally to reduce swelling.
 - b. As a remedy for venereal diseases.
 - c. As a love-philter (increases attraction between the giver and taker).
 - d. For treatment of cancer and ulcers.
5. It is used as cattle poison.
6. Nerium odorum resists heat and can therefore be detected even from the burnt remains of the dead body.

DISCUSSION-

Being a poisonous plant *Kaner* is being used widely in Ayurveda since ages. There are many formulations in which it is used for local and internal use. This plant although is poisonous but could be of varied uses if investigated and researched. Ayurvedic concepts are very clear regarding it and are fit as per the modern concepts. In Ayurveda its Purification too has been mentioned before use which makes it either less toxic or nontoxic. Modern researches show it to be a promising drug for future for use in Cardiac and Cancer diseases. Its action is found to resemble Digoxin. Ayurvedic uses of the formulations containing Nerium ranges from Eyes diseases to Skin and Veneral diseases. As per the concepts of Ayurveda Good Medicine/Herb is the one which is present in Quite a good amount and in maximum places with ease. *Karveer* is highly poisonous but is available with ease in the country.

CONCLUSION -

The knowledge of therapeutic qualities of plants to human is quite old. *N. indicum* is one of the plants used in Ayurveda, which is the oldest medical science known to mankind, this plant has been utilised since antiquity in Ayurveda as well as worldwide in ethnomedical practises. This review clarifies that *Nerium indicum* is used in the treatment for many illnesses among various ethnic groups. It has been used by both Ayurvedic and conventional medical practitioners to treat a variety of illnesses, including dermatitis, eczema, psoriasis, herpes, sores, abscesses, warts, corns, skin cancer, ringworm, scabies, epilepsy, asthma, malaria, heart disease, and others. *N. indicum* is unquestionably a significant *Kushthaghna dravya* (anti-leprotic ingredient), as demonstrated in a critical analysis of the old Ayurvedic writings. Today, its antifungal and antibacterial activity

in reference of skin disease and its other spectrum of medicinal usage have mostly been proved by many researches. The facts described in classics regarding *N. indicum*, are thus now clinically being proven and re-established on modern parameters too, which again shows that the knowledge of our ancestors about herbal medicine was very vast and accurate. All above facts have been carefully covered in this study and hence it is hoped that this review will facilitate further exploration of the medicinal and pharmacological properties of *N. indicum*.

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