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## Morphological Characterization of Jeevaka Through Synonyms: A Unique Approach of Ayurveda

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### Abstract

Ayurveda is the science of life and living. The principles of life and living are mentioned in various Ayurvedic texts. For good life and living, the use of various Dravyas has been indicated. These Dravyas are assigned various names. These names are called as paryaya (synonyms). These synonyms do not only represent the names but also represent the morphological features, properties, actions and effects. They also provide with key identification features. Jeevaka is one of the plants mentioned in astavarga with revitalizing and rejuvenative properties. Various synonyms of jeevaka are mentioned in many Nighantu but its exact morphological details, properties and uses using all the synonyms are not mentioned. Hence this work was taken to decode all the synonyms and explain the features, properties and action of jeevaka.

**Keywords:** Ayurveda; Jeevaka; Synonym.

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### Introduction

The main aim of Ayurveda is Svasthasya svasthya raksanam aturasya vikara prashamanam cha. It means protection of health of the healthy and alleviate the disease of the diseased. Just as the warrior in the field requires weapons, similarly the physician requires plants. Hence, the knowledge regarding plants is of utmost importance. Also Acharya Charaka has defined Ayurveda as “the one that gives knowledge about ayusya (healthy) and anayusya (unhealthy) plants, guna (properties) and karmas (actions and effects)” [1].

It is also told in Raja Nighantu that a physician without the knowledge of materica medica becomes a matter of laughter [2]. In ancient times, the system of morphological description of plants, as it is done now, was not present. Hence, the names and synonyms which indicated the salient

features of plants were coined [3]. These names and synonyms were based on rudhi (traditional uses), prabhava (effect), desyokti (habitat), lanchana (morphological characters), upama (simile), veerya (potency), itarhava (local names prevalent in various regions), akriti (form), rasa (taste), kala (time), prasastibodhaka (availability) etc [4,5,6]. The synonyms of jeevaka as per important materica medicas of Ayurveda is as follows.

#### 1. *Astanga Nighantu*

The synonyms of jeevakamentioned in Ashtanga Nighantuare kurchanibha, vrishanee, vrisha and Vrishabha [7].

#### 2. *Paryaya ratnamala*

The synonym of jeevaka mentioned in this text is kurcasheersha [8].

3. *Madanadi Nighantu*

The synonyms of jeevakamentioned in this text are kurcasheersha, deerghayu, jeevya, mangalyan-amadheya, hrasvanga and priyasaptaka [9].

4. *Shodhala Nighantu*

The synonyms of jeevaka mentioned in this text are shringaka, kshveda, deerghayu, kurchasheersaka, hrasvanga, vardhana, sheeta, brimhana, chirajeevee, mangalya, pranadaand svadu and pittajvara vinashana [10].

5. *Dhanvantari Nighantu*

The synonyms of jeevaka mentioned in this text are sringaka, ksveda, deerghayu, kurcaseersaka, hrasvanga, madhura, svadu, pranada and chirajeevee [11].

6. *Abhidhanaratnamala (Shadrassa Nighantu)*

The synonyms of jeevaka mentioned in this text are kurchaseersa, hrasvanga and chirajeevee has been mentioned [12].

7. *Madanpala Nighantu*

The synonyms of jeevaka mentioned in this text are madhura, shringee, hrasvanga and kurcasheersaka [13].

8. *Kaiyadeva Nighantu*

The synonyms of the plant mentioned in this text

are hrasvanga, kurchaseersaka, kurchaka, jeevada, kshodi, mangalya, madhura, priya, jeevana, shringaka, shreya, deerghayu and chirajeevee [14].

9. *Bhavaprakash Nighantu*

The synonyms of jeevaka are madhura, shringa, hrasvanga and kurchasheersaka [15].

10. *Raja Nighantu*

The synonyms of jeevaka mentioned in this text are jeevana, jeevya, shringahva, pranada, priya, chirajeevee, madhura, mangalya, kurchasheersaka, hrasvanga, vriddhida, ayusman, jeevada, deerghayu and balada [16].

11. *Shaligrama Nighantu*

The synonyms of jeevaka mentioned in this text kshveda, hrasvanga, deerghayu, shringaka and priya [17].

12. *Saushruta Nighantu*

The synonyms of jeevaka mentioned in this text are priyanama, deerghayu, kurchasheersaka and mangalyanamadheya [18].

There are numerous synonyms of jeevaka given in various materia medica of Ayurveda on the basis of svarupa (morphological characters), guna (properties), and karmas (actions and effect) etc. This has been presented on table 1 below.

Table 1:

S.N.	Synonyms	SN	AN	PR	DN	AR	Ma. Ni	So. Ni	Ma. Pa.	R N	KN	BPN	SGN
Based on Svarupa (Morphological characters)													
1.	Hrasvanga	-	-	-	+	+	+	+	+	+	+	+	+
2.	Kurchanibha	-	+	-	-	-	-	-	-	-	-	-	-
3.	Kurcasheersha	+	-	+	+	-	+	-	-	-	-	-	-
4.	Kurchasheersaka	-	-	-	-	+	-	+	+	+	+	+	-
5.	Nisara	-	-	-	-	-	-	-	-	-	-	+	-
6.	Shringee	-	-	-	-	-	-	-	+	-	-	-	-
7.	Shringa	-	-	-	-	-	-	-	-	-	-	+	-
8.	Shringaka	-	-	-	+	-	-	+	-	-	+	-	+
Based on gunas (properties)													
9.	Madhura	-	-	-	+	-	-	-	+	+	+	+	-
10.	Sheeta	-	-	-	-	-	-	+	-	-	-	-	-
11.	Svadu	-	-	-	+	-	-	+	-	-	-	-	-
Based on Karmas (actions and effects)													
12.	Ayushman	-	-	-	-	-	-	-	-	+	-	-	-
13.	Balada	-	-	-	-	-	-	-	-	+	-	-	-
14.	Brimhana	-	-	-	-	-	-	+	-	-	-	-	-

15.	Chirajeevee	-	-	-	+	+	+	+	-	+	+	-	+
16.	Deerghayu	+	-	-	+	-	+	+	-	+	+	-	-
17.	Jeevada	-	-	-	-	-	-	-	-	+	+	-	-
18.	Jeevana	-	-	-	-	-	-	-	-	+	+	-	-
19.	Jeevya	-	-	-	-	-	-	-	-	+	-	-	-
20.	Kshodi	-	-	-	-	-	-	-	-	-	+	-	-
21.	Kshveda	-	-	-	+	-	-	+	-	-	-	-	+
22.	Maangalya	-	-	-	-	-	-	-	-	+	+	-	-
23.	Mangalya	-	-	-	-	-	-	+	-	-	-	-	-
24.	Mangalya- namadheya	+	-	-	-	-	+	-	-	-	-	-	-
25.	Pittajvara vinashana	-	-	-	-	-	-	+	-	-	-	-	-
26.	Pranada	-	-	-	+	-	-	+	-	+	-	-	-
27.	Vardhana	-	-	-	-	-	-	+	-	-	-	-	-
28.	Vridhdhida	-	-	-	-	-	-	-	-	+	-	-	-
29.	Vrishanee	-	+	-	-	-	-	-	-	-	-	-	-
30.	Vrishabha	-	+	-	-	-	-	-	-	-	-	-	-
31.	Vrisha	-	+	-	-	-	-	-	-	-	-	-	-
32.	Shreyasa	-	-	-	-	-	-	-	-	-	+	-	-
33.	Shamee	-	-	-	-	-	-	-	-	-	+	-	-
Others													
34.	Priya	-	-	-	-	-	-	-	-	+	+	-	+
35.	Priyasaptaka	-	-	-	-	-	+	-	-	-	-	-	-
36.	Priyanama	+	-	-	-	-	-	-	-	-	-	-	-
37.	Shringahva	-	-	-	-	-	-	-	-	+	-	-	-

\*SN- Saushruta Nighantu, AN- Astanga Nighantu, PR- Paryaya Ratnamala, DN- Dhanvantari Nighantu, AR- Abhidhana Ratnamala, Ma. NiMadanadi Nighantu, So.Ni- ShodhalaNighantu, Ma. Pa.- Madanpala Nighantu, RN- Raja Nighantu, KN- Kaiyadeva Nighantu, BPN- Bhavaprakash Nighantu, SGN- Shaligrama Nighantu

The morphological characterization, properties, action and effect as per the above mentioned table have been presented below [19-23].

#### *Synonyms based on svarupa (morphological features)*

It is a plant with good name [priya, priya Nama, priya]. It is a small plant about 15-30 cm tall which has small parts [hrasvanga]. It bears racemose inflorescence [kurchanibha, kurcasheersha] which seems grouped [kurchaka]. The inflorescence is the prominent part that looks like horn [shringa, shringahva]. Its pseudobulb does not contain much fluid [Nisara]. The pseudo bulb can remain dormant for long period of time [Chirajeevee].

#### *Synonyms based on guna (properties)*

It is madhura (sweet) in taste [madhura, svadu]. It possessessheeta veerya guna (cold potency).

#### *Synonyms based on karmas (actions and effects)*

It has good effects in the body[mangalya, maangalya, mangalyanamadheya]. It provides bala [Ayushman, balada, vrishanee, vrisha, vrishabha].

It imparts prana (life sustaining energy), longevity [deerghayu] and vitality [jeevaka, jeevana, jeevya, jeevada, pranadayaka, pranada, susthirajivi]. It rejuvenates the body [kaumarya and increases body tissues [vardhana]. It also imparts good health and well-being [shreyasa, mangalya]. It helps to get rid of the disease [ksveda, kshodi]. It imparts good health by destroying diseases [vridhdhida] and helps in nourishment of the body [brimhana]. It pacifies the vitiated doshas [shami]. It pacifies pittaja fever [Pittajvara vinashana].

### **Results, Discussion and Conclusion**

Jeevaka has the properties to vitalize and rejuvenate the body. It is a small plant with small parts. It bears a distinctive inflorescence with laxly arranged flowers. It pacifies vitiated doshas especially pitta and vata because of its sweet taste. It also pacifies pitta due to its cold potency. It imparts good health by pacifying the vitiated dosha. It then nourishes the depleted tissues and finally rejuvenates the body. These all can be simply understood by the synonyms only. Hence, there is a great need to decode these synonyms

and characterize the plants morphologically. These characters also match with the plant *Crepidium acuminatum* (D. Don) Szlach syn. *Malaxis acuminata* D. Don. Hence jeevaka can be considered as *Crepidium acuminatum* (D.Don) Szlach.

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## Pratyatma Lakshana: A Diagnostic Pathological Report

Mahamad Yunus S. Nabooji<sup>1</sup>, Amit K.<sup>2</sup>, Sandhya G.<sup>3</sup>, Komal R.<sup>4</sup>

### Abstract

The meticulous diagnoses of the disease in Ayurveda completely rely on five means of diagnosis (nidanapanchaka), out of that lakshana (clinical features) plays an important role. These are manifested as the result of Gunata (qualitative) and Dravyata (quantitative) vitiation of various factors like dosha, dushya, srotas, agni, prakruti, bala and kala etc, involved in the process of samprapti (pathogenesis). Clinical features are occurred in different stages of samprapti, in doshadushyasamurchana avasta called as poorvarupa (premonitory clinical feature) and some manifested after the completion of doshadushyasamurchana called as roopa (clinical features) among these some are unique and specific to particular disease and these are called as pratyatma lakshana (cardinal features), for e.g. dehamanasantapa of jwara, malasarana of atisara and netratwakpanduta of pandu etc, understanding and diagnosis of srotogatavyadhis (systemic diseases) remains a challenging even after knowing the clinical features, because a single clinical feature of particular disease occur in more than one disease of same srotas or other srotas, but pratyatma lakshanas are unique to particular disease so it carries a great value in the accurate and final diagnosis of the disease along with other common features manifested as poorvarupa and roopa of srotogatavyadhis. By considering uniqueness of pratyatma lakshana the present work is taken into consideration.

**Keywords:** Pratyatma Lakshana; Roopa; Poorvarupa; Doshadushyasamurchana; Clinical Features; Diagnosis.

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### Introduction

Among three principle objectives of Ayurveda, Aturasyavikara (Disease of the patient) is considered as most important in the point of Roganidana (Clinico-Diagnostic Pathology), to overcome the Aturasyavikara, Acharyas mentioned various diagnostic tool like nidanapanchaka and etc. among these pratyatma lakshanas which are manifested

either during the stage of poorvarupa or roopa are considered as Atmalakshana (cardinal/unique) of a particular disease and unique diagnostic pathological report of Ayurveda. Clinically most of the time poorvarupa and rupa are alike in various diseases of Doshapradoshaja, Dhatupradoshaja and Srotopradoshaja, where as pratyatma lakshanas are specific to specific disease even when different factors involved in the manifestation of various diseases are same, Because these are manifested as

the result of uniqueness of Khavaigunya (Suitable defected place to produce disease within the body/ Site of Pathology) and Samprapti of a particular disease. So it's time to explore the pratyatma lakshanas are unique diagnostic methods of ayurveda in relation to pathology.

### Diagnostic Glance on Lakshana

After critical analysis of concept of lakshana as explained by various Acharyas in relation to diagnostic approach towards a disease, probably we can draw the following conclusion for the sake of accurate diagnosis and to explore the concept of Roganidana in the light of clinical and pathological

diagnostic report.

### Pratyatma Lakshana (Diagnostic Pathological Report)

To explore the concept of pratyatma lakshana in the light of pathological diagnostic report only those unique clinical features are considered as pratyatma lakshana of the particular disease as these are directly indicating the nature of Khavaigunya (Pathology) among the common clinical features which are explained by various acharyas. For the differential diagnosis of the diseases one has to consider Samanyalakshanas along with Pratyatma Lakshana.

**Table 1:** Showing Probable Diagnostic Role of Lakshana

Lakshanas	Role in Diagnosis
Poorvarupa	Diagnostic Clinical Report in premonitory stage of the disease
Roopa	Diagnostic Clinical Report in manifested stage of the disease
Pratyatma	Diagnostic Pathological Report

**Table 2:** Showing Pratyatma lakshana (Diagnostic Pathological Finding) of Various Diseases [1,2,3,4]

Pratyatma Lakshana	Diagnosis
Shabdayuktauchwasanichwasa	Mahashwasa
Deerghashwasa, Urdhwadrusti	Urdhwashwasa
Vicchinnashwasa, Raktaikalochana	Chinnashwasa
Teevrevagashwasa, Gurguraka, Vimokshnate muhoortam labate sukham, Aaseenolabate sukham	Tamakashwasa
Shushkakasa and alpakapha, Jeernannevega	Vatajakasa
Peetanishteavana, Pratatamkaasamaancha jyoteeshmati	Pittajakasa
Bahula, Madhura, Snigdha, Ghana kapha	Kaphajakasa
Shushkakasa followed by Sashonitakapha, Paravata evakoojana	Kshatajakasa
Durghanda, Hareeta, Raktayukta, puyayuktakapha, Shreemadarshanalochana, Bahuvashi durbalakrusha	Kshayajakasa
Ekadasha Roopa	Rajayakshma
Uroruk followed by kasa and Raktavamana	Urakshata
Daranasphotanvat shoola in Hrudayapradesha	Vatajagrudroga
Dahachoshavat shoola in Hrudayapradesha followed by Hrudayaklama	Pittajagrudroga
Mandavedana, Hrudayasthabdhata in Hrudayapradesha followed by Hrudayastimita	Kaphajagrudroga
Teevrevadana in Hrudayapradesha followed by Kandu	Krimijagrudroga
Alpaalpa muhurmuha sashabdha malanisarna	Vatajatisara
Peeta/neela/lohita malanisarna	Pittajatisara
Tantula muhurmuha savedana malanisarana	Kaphajatisara
Sarakta malanisarana	Raktajatisara
Bahukaphaalpamalanisarana	Pravahika
Suchivatatoda followed by Chardhi and Atisara	Visuchika
Kukshiadmanaatopa followed by padashopha, Gamanashakti	Udararoga
Kukshi udakapoornadruti sparsha	Jalodara
Atishrustamatibadha/Drava malanisarana	Grahniroga
Atishrustamatibadha/Drava malanisarana followed by Jeerneadhmanam	Vatajagrahni
Atishrustamatibadha/Drava malanisarana followed by Hruthkantadaha	Pittajagrahni
Atishrustamatibadha/Drava malanisarana followed by Akrushasyadurbala	Kaphajagrahni
Galajalaghatadwani malasarana followed by Parshwa shoola	Ghatyantragrahni
Samsparshaparipindita Granti in between Hrudaya and naabhi pradesha	Gulma

Samsparshaparipindita Granti followed by Jeerneabhadhikam bhukte samaupaiti	Vatajagulma
Samsparshaparipindita Granti followed by Sparshasahatwam and jeerneshoolam	Pittajagulma
Samsparshaparipindita Granti followed by Staimitya	Kaphajagulma
Avipaka followed by Tiktamlaudgar, Hruthkantadaha, klama, utklesha	Amlapitta
Avipaka followed by jeeryate shoolam	Parinamashoola
Avipaka followed by Jeernejeeryateajeerne Shoolam	Annadravashoola
Dehamanasantapa	Jwara
Vishamavegajwara, vepatu	Vatajajwara
Tikshanavegajwara, Mukhapaka	Pittajajwara
Mandavegajwara, sthaimitya	Kaphajajwara
Kshenedaha kshenesheeta followed by asthisandishiroruja, kantakujana, shirasolotana	Sannipatajajwara
Vishama vega and kala jwara	Vishamajwara
Netratwakpanduta followed by Pindikodwestana, angasada, Hrundayaspandana	Pandu
Stabdha and Guruta in Sandhi followed by Angamardha, shoonagata, Avipaka	Amavata
Utsedhasamhatashopha followed by Prashamyati prawnmati prapedita, Chala	Vatajashotha
Utsedhasamhatashopha followed by Bhrushadahapaka	Pittajashotha
Utsedhasamhatashopha followed by Prashamonipeedita, guru, sthira	Kpahajashotha
Utsedhasamhatashopha followed by avalambhi	Vishajashotha
Pittadhushta raktasarana	Raktapitta
Haridra netratwagnakha followed by Raktapeeta shakrutmutra	Koshtashakhashraya kamala
Haridra netratwagnakha followed by Shwetashakrutmutra	Shakhashraya kamala
Haridra netratwagnakha followed by Krushnashakrutmutra, kukshishotha	Kumbhakamala
Haridra netratwagnakha followed by Nityamandajwara, Strishuaharsha	Haleemaka
Prabhutaavilamutrata followed by Shadpatapippalikabhicha	Prameha
Twakvaivarnya followed by vedana/srava/Kandu etc	Kustha
Twakshweta followed by Asravi/Avedana	Shwittrakushta
Vatapoornadrutisparsha shotha in Sandhi	Sandhigatavata
Hatwaekapaksha	Pakshagata
Hatwaekapaksha followed by vakranasabhrulalatakshi	Ardhita
Shoola in Sphikkatiprustauruajanujanghapadam kramath	Gradrasi
Sandhishoola followed by sweda, sparshajnatwam	Vatarakta
Talapratyanguli Vedana followed by Karmakshyakari	Vishvachi

## Conclusion

Pratyatma lakshana are Atmalakshana of a particular disease. After critical analysis of all clinical features in relation to various Doshapradoshaja, Dhatupradoshaja and srotopradoshajavyadhis, the poorvarupa and rupa can be considered as Diagnostic Clinical Report of Ayurveda. Whereas pratyatma lakshanas can be considered as Diagnostic Pathological Report of Ayurveda as these are indicator of uniqueness of Khavaigunya and Samprapti even when different factors involved in the process of various disease manifestations are alike.

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## Medicinal Uses of Raat ki Rani (*Cestrum Nocturnum L.*): An Anukta Dravya

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### Abstract

In Ayurveda, plants have been used for treatment of various diseases. Those drugs that are not mentioned in Ayurvedic Pharmacopeia are known as Extrapharmacopeial drugs. *Cestrum nocturnum* L. is categorized in Extrapharmacopeial drug section in Ayurvedic Pharmacopeia. It is commonly known as Raat ki Rani in Hindi and Queen of the Night in English. This is a unique plant that belongs to the Solanaceae family that blooms at night and exudes fragrance. It is used in traditional and folklore practices for the treatment of various digestive, urinary and gastrointestinal system related diseases because of its antibacterial, antifungal, antidiabetic and analgesic properties. Various extracts of the plant can be used for healing the wounds, inhibition of malignant growth and tumours.

**Keywords:** *Cestrum Nocturnum* L.; Extrapharmacopeial; Raat ki rani.

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### Introduction

In rural India, 65% of the population use medicinal plants to help meet their primary health care needs [1]. Over 70% of the people of India, which is around 1.1 billion population, still use these Non-Allopathic systems of medicine or Complementary and Alternative system of medicine [2]. Ayurveda, Yoga, Unani, Siddha, Homeopathy and Naturopathy constitutes Complementary and Alternative system of Medicine that have used plants as medicines, for thousands of years and continue to use various kinds of herbs and herbal drugs [3]. Among these traditional and alternative systems of health, Ayurveda has been prevalent for over three thousand years. Around seven hundred plants have been mentioned in Ayurveda that can

be used as medicines [4]. The drugs that are not mentioned in Ayurvedic pharmacopoeia (A.P.I) are known as Extrapharmacopeial drugs. Among them, Raat ki Rami (*Cestrum nocturnum* L.) is one such plant.



Fig. 1:

*Cestrum nocturnum* is commonly known as Raat ki Rani (Queen of the Night), which blooms at night and has a strong fragrance. It can reproduce vegetatively or through seeds. When ingested by livestock, it has proved fatal and poisonous. In humans, ingestion of this plant has produced hay fever like symptoms [5]. Even the scent of this plant is known to produce severe allergic reactions in some individuals [6].

#### Common Names

Raat ki rani in Hindi, Hasna Hana in Bengali, Queen of the Night in English, Thabal Lei in Manipuri, Raatrani in Marathi, and Rat Ki Rani in Konkani [7].

#### Distribution

Native Range: Tropical America: Mexico, Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama and Caribbean: Cuba [8]

#### Plant description [9]

Shrubs erect or sprawling, 1-3 m tall; young growth puberulent, glabrescent. Branches slender. Petiole 0.8-2 cm; leaf blade oblong-ovate or oblong-lanceolate, 6-15 × 2-4.5 cm, entire. Inflorescences drooping, many-flowered, axillary or terminal racemose panicles, 7-10 cm. Flowers strongly night scented. Pedicel 1-5 mm. Calyx campanulate, 2-3 × 1-1.5 mm; lobes deltoid, 0.5-0.8 mm. Corolla greenish or whitish yellow, 1.5-2.5 cm, tube slightly contracted at throat, lobes 3-4 mm. Filaments with dentate appendages, usually puberulent at point of insertion. Ovary about 1 mm. Berry white, juicy, oblong or globose, 6-10 × 4-10 mm. Seeds 1-5, ellipsoid, 3.5-4.5 mm.

#### Taxonomical classification [10]

- Kingdom: Plantae
- Class: Equisetopsida C. Agardh
- Subclass: Magnoliidae Novák ex Takht.
- Superorder: Asteranae Takht.
- Order: Solanales Juss. Ex. Bercht. & J. Presl
- Family: Solanaceae Juss.
- Genus: *Cestrum* L.
- Species: *Cestrum nocturnum* L.

#### Varieties:

- *Cestrum nocturnum* var. *mexicanum* O.E. Schulz
- *Cestrum nocturnum* var. *pubescens* Dunal
- *Cestrum nocturnum* var. *tinctorium* M. Gómez

#### Part Used

Leaf [11], aerial parts [12]

#### Phytoconstituents

The crude form and fractions of the plant contains various phytochemical chemical groups like glycosides, alkaloids, saponins, phenols, flavonoids, sterols and tannins [13]. The methanolic extract contains steroidal saponin named nocturnoside A, in leaves that has been characterized as 3-O-[beta-D-glucopyranosyl (1---3)-beta-D-glucopyranosyl (1---2)-beta-D-glucopyranosyl((3---1)-beta-D-xylopyranosyl) (1---4)-beta-D-galactopyranosyl) (25R)-spirost-5-ene-2 alpha, 3 beta-diol through <sup>13</sup>C NMR spectroscopy [14]. The mature and fresh leaf extract of n-hexane containing thin layer epicuticular waxes contains 17 long chain alkanes, Hentriacontane (n-C(31)) as the major n-alkane, while nonadecane (n-C(19)), the least abundant component [15].

#### Folklore Uses

It is used in heart diseases and spasms [16]. The extract of aerial parts is spasmolytic, hypotensive and diuretic [17]. The plant has been used as a good drug for treating digestive diseases in traditional Chinese medicine [18].

#### Medicinal Uses

The crude methanol extract of the whole plant of *Cestrum nocturnum* L. and its subsequent fractions showed marked antibacterial activity against *Pseudomonas aeruginosa*, *Staphylococcus aureus*, *Bacillus subtilis*, *Escherichia coli* and *Shigella flexneri* with the exception of *Salmonella typhi* among the tested samples. The crude extracts and fractions were also found to be susceptible to *Candida* species and *Microsporium canis* [19].

The ethanolic extract of *Cestrum nocturnum* L. leaves has a concentration dependent wound healing effect which was prepared as an ointment. It has high rate of wound contraction, decrease

in the period for epithelialisation, elevated hydroxyproline content in animals [20].

The n-butanol and polysaccharides extracts of *Cestrum nocturnum* L. is able to inhibit tumour growth and prolong the lifetime of the tumour-bearing mice in a dose-dependent pattern [21].

The decoction of dry leaves powder of the plant has analgesic activity through peripheral action mechanism and psychoactive activity. It did not show any anti-convulsing activity [22].

It also has cytotoxic activity against the human oral squamous cell carcinoma (HSC-2) cells along with normal human gingival fibroblasts [23].

The Green synthesized silver nanoparticles prepared with *Cestrum nocturnum* L. has strong antioxidant activity along with antibacterial activity. This activity might be suggested due to the presence of bioactive molecules on the surface of silver nanoparticles, with that of *Cestrum nocturnum* L. [24].

In an In vivo study in Wistar rats, the hydroalcoholic extract of *Cestrum nocturnum* leaves has demonstrated promising result in the treatment of diabetes [25].

The cell line studies shows that it has very good antitumor effects by inducing damage to the cancer cell DNA and inhibiting the activity of topoisomerase II and low immune toxicity [26].

## Conclusion

It is a cosmopolitan plant belonging to the Solanaceae family that blooms at night and imparts a pleasant fragrance. The plant is an Extrapharmacopeial for Ayurveda system of medicine. But it has been in use in Chinese traditional medicine and folklore practices. The folklore uses of this plant are in treatment of various heart diseases, spasms, hypertension, urine retention and various digestive diseases. It is poisonous to livestock and produces hay fever like symptoms in humans when ingested orally and cause severe allergic reactions when inhaled.

Various researches studies show its activity as a potent antibacterial, antifungal, antidiabetic and analgesic drug. It can be used for wound healing, tumour inhibition, killing human oral squamous cell carcinoma and preparation of green silver nanoparticles.

Hence the plant "*Cestrum nocturnum* L." is a very important plant with great medicinal properties. Therefore, the plant needs to be studied

as per Ayurvedic parameters of rasa (taste), guna (properties), virya (potency), vipaka (post-digestive taste) and other parameters and after validation, included in the Ayurvedic pharmacopoeia.

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## A Case Report on Non Healing Foot Ulcer

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### Abstract

Foot ulcer is common in diabetic individual consisting of 15% of all diabetics, but it is less commonly seen in non-diabetics [1]. At the same time non healing leg ulcers are more common among diabetics than in non-diabetics. Non healing leg ulcer often becomes a great challenge to the surgeon. This case study demonstrates how Ayurvedic medicine helps in rapid healing of a chronic non healing ulcer in a non-diabetic individual. In this case treatment was planned for Dusht Vrana and a group of drugs were prescribed which are indicated for vranashodhana and vranaropana.

**Keywords:** Non Healing; Ulcer; Dusta Vrana.

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### Introduction

A non-healing ulcer is defined as a wound that does not improve after four weeks or does not heal in eight weeks [2].

This is a major health problem comprising of 85% of lower limb amputation [3].

Conventional therapies such as dressings, surgical debridement and even skin grafting cannot provide satisfactory healing since these treatments are not able to provide growth factor that can modulate the healing process. Ayurveda has mentioned different types of ulcers under the heading of vrana. The case studied here fulfilled the criteria of Dushtavrana as mentioned in Sushruta Samhita [4].

Many medications are mentioned in classical texts for DushtaVrana, out of which some were selected depending on ashtarogipariksha.

### Case Report

This is a case of chronic non healing foot ulcer of left heel, where a 60 years old non diabetic lady presented at outdoor patient department of a reputed Ayurveda college and Hospital with an ulcer for a period of 10 years following trauma. She consulted different surgeons and attended hospitals number of times during this period of time and also underwent debridement three times before, but the wound did not healed. She produced a report of blood which was done 5 months back suggestive of normal fasting and PP blood sugar levels. Her renal as well as liver function tests were also normal. She was off any treatment since last 4 months.

On examination left foot revealed an ulcer over heel measuring about 4x4 cm which was discharging and was having foul smell but tolerable. Surrounding area was not inflamed or congested. Edge and margins were tendered and temperature of surrounding area was not raised. There were no palpable popliteal or inguinal lymph nodes.

## Management Adopted in This Case

### 1<sup>st</sup> visit

After the assessment, wound was washed with normal saline and sloughed tissues were removed. Hot compression with swetachurna solution was done approximately for 10 mints and Panchatiktaguggula Ghrita was applied over it. Wound was covered by gauze and bandage. Medications prescribed were the following

1. Nimbadiivati - 2 pills twice daily after meal with Luke warm water.
2. Khadirarista - 3 tsf thrice daily with equal amount of warm water after meal.
3. Gandhak Rasayana - 1 pill twice daily after meal with Luke warm water [5].
4. Dressing of wound every alternate day as demonstrated to the patient The patient was asked to continue the medicine for 2 weeks.



**Fig. 1:**

### 2<sup>nd</sup> visit:

Wound was examined. Signs of healing were evident. Dressing was done with swetachurna and panchtiktaguggula Ghrita was applied as before. This time medicines prescribed were

1. Khadirarishta - 15 ml thrice daily after meal with lukewarm water.
2. Gandhak Rasayana - 1 pill twice daily after meal with lukewarm water.
3. Dhatri Lauha - 1 pill  
Kori Bhasma - 25 mg } One dose twice daily after food with warm water.
4. Panchatiktaguggula Ghrita - 5 ml with Luke warm water daily in empty stomach [6].
5. Dressing was advised as before.



**Fig. 2:**

### 3<sup>rd</sup> Visit

Patient attended OPD after 2 weeks with complaint of persistent oozing from ulcer. Wound was debrided and dressing was done in the similar way. Medicines prescribed were following.

1. Khadirarishta - 15 ml thrice daily after meal with equal amount of lukewarm water.
2. Gandhak Rasayana - 1 pill twice daily with milk after meal.
3. Dhatri Lauha- 1 pill  
Tankan Bhasma - 125 mg } One dose twice daily after food.
4. Panchatiktaguggula Ghrita - 5 ml with Luke warm water daily in empty stomach.
5. Yasada Bhasma - 1 pinch with warm water once daily after meal.
6. Dressing was advised as before.



**Fig. 3:**

*4<sup>th</sup> Visit:*

The patient came to visit after approximately 40 days. Wound was healthier. Dressing was done and medications prescribed were following.

1. Khadirarishta - 15ml thrice daily after meal with equal amount of lukewarm water.
2. Gandhak Rasayana - 1 pill twice daily with milk after meal.
3. Dhatri Lauha - 1 pill  
Tankan Bhasma - 25 mg } one dose twice daily with warm water after food.
4. Panchatiktaguggula Ghrita - 5 ml with Luke warm water daily in empty stomach.
5. Dressing was advised as before.



**Fig. 4:**

*5<sup>th</sup> visit*

Patient came for visit after 14 days. Medicines prescribed this time were the following.

1. Khadirarishta - 10 ml thrice daily after meal with equal amount of lukewarm water.
2. Triphala Churna - 1 tsf with warm water at night.



**Fig. 5:**

3. Nimbadi Vati - 2 pills twice daily with warm water after meal.

4. Panchatiktaguggula Ghrita - 5 ml with Luke warm water daily in empty stomach.
5. Dressing was advised as before

*6<sup>th</sup> visit*

She visited after about 45 days this time. Following medications were prescribed after dressing.

1. Nimbadvati - 1 pill twice daily with warm water after meal.
2. Baisnawar churna - ½ tsf twice daily with warm water before meal.
3. Panchtiktaguggula Ghrita - 1 tsf once daily in empty stomach.
4. Dressing with swetachurna and Panchtiktaguggul Ghrita as advised before.



**Fig. 6:**

*7<sup>th</sup> visit*

Patient came after 14 days for consultation. This time following medicines were prescribed.



**Fig. 7:**

1. Panchtiktaguggula Ghrita - 1 tsf daily in empty stomach.
2. Bainavar churna -1 tsf  
Kari Bhasma- ½ tsf } 1 dose twice daily.

### 3. Dressing as advised before.

#### 8<sup>th</sup> visit

Patient presented after 3 weeks. The wound healed very well. The center of healed ulcer was soft in touch. This time the patient complained of pain in low back. So following medicines were prescribed.

1. Panchtiktaguggula Ghrita - 1 tsf once daily with warm water in empty stomach.
2. Tab Kineaz - 1 tab twice daily after meal.
3. Dressing was asked to be continued as before.



Fig. 8:

#### 9<sup>th</sup> visit

There was complete healing of wound. She was advised not to walk bare foot and she was encouraged to take care of the foot.



Fig. 9:

### Dicussion

The skin of the heel ulcer is thin, but the subcutaneous space is filled with a thick layer

of fatty tissue. If infection from the ulcer invades the fatty tissue, rapid necrosis of the entire layer occurs, which destroys the calcaneus and can even cause osteomyelitis. Initially this ulcer was highly infected. Regular dressing with swetachurna made the wound healthy while ghrita helped its healing. Debridement was done to remove the edge of the eschar. In this case patient was not regular in visit and was having excessive walking, so it took little more time to heal completely for an 10 years old ulcer. Time taken in complete healing was approximately seven and half months. Whole treatment was done on OPD basis.

### Conclusion

Treating Patients with chronic ulcer over heel not responding to treatment is challenging and multi factorial. Regular dressing and selection of medications were the most important determinant in this case. Out of number of medications mentioned in Ayurveda to treat dushtaVrana, very few were selected for this patient. Medicines worked well and it cured the patient completely who was depressed after visiting clinic to clinic since last 10 years.

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## Efficacy of Thumari Malahara in The Management of Dushta Vrana (Chronic Non-Healing wound): A Single Case Report

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### Abstract

**Introduction:** Katupila a native plant of Sri Lanka commonly known as Thumari in Saurashtra Region of Gujarat is being used in treating chronic non-healing ulcers. The aim of this study is to evaluate effect of katupila malahara in the treatment of Dushtavrana (chronic non-healing ulcer). **Materials & Method:** A 62 years old male Patient consulted OPD with complaints of chronic non-healing ulcer at lateral malleolus of left foot having slough, foul odour, pus discharge, tenderness. The size of ulcer was (5× 9×4.5) cm sized. Patient had treating of two times skin grafting, but skin graft was failed. **Result:** Non-healing chronic ulcer completely healed within 4 weeks of treatment. The positive finding in this case is that even in old age ulcer healed and without skin grafting with good tissue strength. **Conclusion:** Study concluded that *Thumari malahar* had healing potential in chronic non-healing ulcer.

**Keywords:** *Dushta Vrana, Katupila, Malahara, Non-Healing Wound, Securinega Leucopyrus, Thumari.*

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### Introduction

A chronic wound which is not heal in an orderly set of stages and in a predictable amount of time the way most wounds do; Wounds that do not heal within three months are often considered in chronic wounds. Chronic wounds seem to be detained in one or more of the phases of wound healing. For example, chronic wounds often remain in the inflammatory stage for too long [1]. To overcome that stage and jump-start the healing process a number of factors need to be addressed such as bacterial burden, necrotic tissue, and moisture balance of the whole wound [2]. In acute wounds, there is a precise balance between production and degradation of molecules such as collagen; in

chronic wounds this balance is lost and degradation plays too large a role. These wounds cause patients severe emotional and physical stress and create a significant financial burden on patients and the whole healthcare system.

Emotional stress can also negatively affect the healing of a wound, possibly by raising blood pressure and levels of cortisol, which lowers immunity [3]. Emotion stress over an old age contribute to chronic wounds. The skin of older people is more easily damaged, and older cells do not proliferate as fast and may not have an adequate response to stress in terms of gene upregulation of stress-related proteins. In older cells, stress response genes are overexpressed when the cell is not stressed, but when it is, the expression of



these proteins is not upregulated by as much as in younger cells [4].

*Securinegaleucopyrus* is a desert climatic plant found in wet climates in Sri Lanka known as Katupila. It is known as *Thumari* in Saurashtra region of Gujarat or *Paanduraphalika* in the Indian Sub-continent also called as "Spinous fl uggea" in English [5]. Previous case reports/ research showed wound healing potential in powder form, ointment & gel form in management of nonhealing wound [6,7,8]. This is the first attempt to report the efficacy of *Katupila Malahara* (modified form from *churna*) in chronic non-healing ulcer. In this case report the *Thumari malahar* was used for management of non-healing chronic wound.

### Case report

A 62 years old male patient came at shalyatantra outdoor patient department with complaints of non-healing ulcer at left foot with pus discharge off & on manner, difficulty in walking since last 5 years. On examination (5×9×4.5) cm sized infected ulcer at lateral malleolus of left foot with slough, foul odour, pus discharge, tenderness, slopping edges, surrounding area was hyper pigmented [Fig. 5]. Muscle wasting was also present at left lower limb due to old age. Patient had a history of insect bite 5 years back after that abscess was developed that leads to ulcer which became chronic and gradually increase in size. So, that ulcer was treated by the general practitioner, but did not got any relief & surgeon advised for skin grafting. So, patient under went skin grafting for two times (1 year and 3 years back) but both time that graft was failed. Laboratory investigations for total leukocyte count, differential leukocyte count, haemoglobin was in the normal range while blood urea and serum creatinine were at borderline (Table 1) Patient was admitted in male Shalya ward for further management.

**Preparation of Thumari Malahara:** *Tila taila* and *Siktha* was taken in 1:5 ratio for the preparation of *Siktha Taila* [9] [Fig. 1]. After preparing of *Siktha Taila* it was poured in porcelain *Kharala* [Fig. 2]. Then, *Katupila* powder (sieved by #120) [Fig. 3] was added in *Siktha Taila*. Trituration was done continuously till *Malahara* like consistency attained [Fig. 4]. *Malahara* was stored in airtight container.

Patient was treated with local application of *Thumari malahara* daily and observed for improvement at regular intervals. The wound was cleaned with normal saline and *Thumari Malahara* was applied in adequate quantity. Changes in

symptoms like tenderness, colour, inflammation, slough, discharge, size of wound were observed daily. After 7<sup>th</sup> day, of application of *Thumari Malahara* wound was free from pus discharge, swelling and tenderness. On 15<sup>th</sup> day, there was fresh granulation tissue with contracting margins observed as a sign of wound healing. Filling of the wound base with fresh and well-vascularized tissues was formed with decreased wound size [Fig. 7]. On 21<sup>st</sup> day, wound was half of the first consultation healed. After 30 days of treatment wound was completely healed with white scars [Fig. 10].



Fig. 1: Siktha & Tila Taila



Fig. 2: Siktha Taila



Fig. 3: Thumari plant & powder



Fig. 4: Thumari malahara



Fig. 7: Healthy wound on 15th day

### Observations & Results



Fig. 5: wound status on 1st day



Fig. 8: Wound status on 21st day



Fig. 6: wound status on 8th day



Fig. 9: Wound status on 25th day



Fig. 10: Healed wound on 30th day

Table 1: Laboratory investigations

Investigations	Before treatment	After treatment
Hb %	14.2 gms%	12.0 gms%
TC	6100/Cumm	4400/Cumm
DC: N/L/E/M/B	56/31/04/09/00%	50/37/08/05/00%
FBS	86 mg/dl	81 mg/dl
PPBS	106 mg/dl	108 mg/dl
B. Urea	41 mg/dl	31 mg/dl
S. Creatinine	1.6 mg/dl	1.1 mg/dl

## Discussion

Acharya Sushruta describe two types of Vrana, Neeja and Aagantuja. [10] This ulcer can consider as a Neeja Vrana due to insect bite. Katupila has Kashaya Rasa which provides Lekhana (scraping) that helps in sloughing out necrosed tissue and preparing the wound for healing. It has Sandhankara properties means it helps in wound contraction, Ropana properties that helps in healing, and Stambhana properties which helped to stop discharge from the wound. Tikta Rasa also having Lekhana, Shoshana properties that dries up the pus, Shodhana which helps in purification of wound. Thumari leaf powder having large amount of tannin and oil that is helpful in the wound healing [11]. Sikthaas well as Tila Taila acts as drug penetration enhancer [12].

Katupila leaves possess antibacterial, [13] anti-inflammatory and immune-modulatory activities [14]. Katupila not only scavenges off the free radicals, but also inhibits the generation of free radicals [15]. These properties are helpful for proper disinfection of ulcer and also promote healthy granulation tissues. pH value of Katupila leaves is 4.5 [16] which is Acidic. Acidic pH supports wound healing process. Such as it suppresses bacterial growth, reduces proteolytic activity, enhance fibroblast growth in

vitro, leads to more oxygen supply and it leads to successful self-healing of chronic wounds [17]. So, we can reveal that acidic environment helps in wound healing by reducing toxicity of bacterial end products, controlling wound infection, increasing antimicrobial activity, altering protease activity, releasing oxygen and enhancing epithelization and angiogenesis. The Malahara formulation is easy to apply, very safe and tolerable to the patient without any side effect.

## Conclusion

A single case study concluded that thumari malahara has potential in the management of chronic non-healing ulcer even in patients of the old age. This observation needs to be studied in more patients to explore better options for management of chronic non-healing ulcer.

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We need the Ethics committee approval letter from an Institutional ethical committee (IEC) or an institutional review board (IRB) to publish your Research article or author should submit a statement that the study does not require ethics approval along with evidence. The evidence could either be consent from patients is available and there are no ethics issues in the paper or a letter from an IRB stating that the study in question does not require ethics approval.

### Abbreviations

Standard abbreviations should be used and be spelt out when first used in the text. Abbreviations should not be used in the title or abstract.

### Checklist

- Manuscript Title
- Covering letter: Signed by all contributors
- Previous publication/ presentations mentioned, Source of funding mentioned
- Conflicts of interest disclosed

### Authors

- Middle name initials provided.
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- Number of contributors restricted as per the instructions.
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### Presentation and Format

- Double spacing
- Margins 2.5 cm from all four sides
- Title page contains all the desired information. Running title provided (not more than 50 characters)
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- Abstract provided: Structured abstract provided for an original article.
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References cited in square brackets

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- Uniformly American English
- Abbreviations spelt out in full for the first time. Numerals from 1 to 10 spelt out
- Numerals at the beginning of the sentence spelt out

### Tables and figures

- No repetition of data in tables and graphs and in text.
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