

# Arka –A Upavisha its Critical Review with its Toxic Effects

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**Abstract:** Ayurveda is one among the evergreen treatment modality of medicine carried out in India. Ayurveda deals with sthavara, jangama, and khanija dravyas along with Mahavisha and upavisha dravyas. Our Acharyas have shown us a wonderful way to use the Visha dravyas in the treatment of patients based on appropriate season, Person and in condition of Patient and dose. It is one of the upavisha varga. The uses of Aaka in Ayurveda in the formulations like Arkatailam, arkesvara rasa, arkavati, arka lavana, kshara panchamruta, kshara gutika. Arka is used as Kushtaghna, Kandughna, Vishaghna, Krimighna, Vranaropaka, Plihaghna, Gulmaghna, Arshoghna, Udararogahara, Deepana, Pachana, Swedajanana, etc. Arkaksheera, Arkapatra, Arkamoola are to be subjected for proper shodhana karma, to remove its tikshna, ushna and rooksha guna before its therapeutic use. If the drug is not properly undergone shodhana then Callotropis shows its toxic effects.

**Keywords:** Upavisha Varga, Arkatailam, Callotropis, Plihaghna.

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## I. INTRODUCTION

In Rasashastra text medicinal dravyas as also classified as Mahavisha and Upavisha, among these Arka is one among Upavisha which is toxic in nature but can be therapeutically employed after appropriate *shodhana* (purificatory procedures) and proper dosage. Arka, botanically identified as *Calotropis procera* is extensively documented in Ayurvedic Nighaṇṭus and classical treatises.<sup>1,2,3</sup>

Arka is widely distributed across India and is traditionally used in conditions such as *Kuṣṭha*, *Śhotha*, *Krimi*, *Arshas*, *Shwāsa*, and *Kāsa*. Its *Kṣhira* (latex), *Patra* (leaves), *Mūla* (root bark), and *Puṣhpā* (flowers) possess potent pharmacological actions attributed to their *Uṣṇa*, *Tikṣṇa*, *Sara*, and *Vyavāyī* properties. However, these very attributes also account for its toxic potential, especially when used without purification or in excessive doses.<sup>4,5</sup>

Classical Ayurvedic texts such as Bhāvaprakāśa Nighaṇṭu, Rāja Nighaṇṭu, and Kaiyadeva Nighaṇṭu have clearly described Arka under *Upavīṣa varga* and warned about its Visha-vega (toxic manifestations), including gastrointestinal irritation, cardiotoxicity, dermatological reactions, and systemic disturbances.<sup>6,7</sup> The latex of Arka, in particular, is known to cause severe inflammation, blistering, and ocular toxicity, while internal administration may lead to serious complications if not properly processed.<sup>8</sup>

### ➤ Know About the Drug:

- Botanical name –Calotropis procera
- Natural order -Asclepiadaceae
- English name –Madar, Mudar.
- Kula - Arka kula

Table 1 Know About the Drug

SL. NO.	Language	Vernacular names
1	Kannada	Yakkadagida, Ekka
2	Hindi	Aak, Akavana, Madar
3	Malayalam	Eriku
4	Tamil	Erukku, Vellerukku
5	Telgu	Jilledu
6	Marathi	Rui
7	Gujarathi	Aakado

8	Punjabi	Ak
9	Kashmiri	Vasa
10	Sanskrit	Bhaanu, Ravi, Tapana, Arka
11	English	Aakado, madar3

➤ *Synonyms of Arka:*

Bhaanu, Ravi, Tapana, Arka ,Aak, Ak, Akada, Alarka2  
Ganarupa, Mandara, Sadapushpa, Alarka, Pratapasa3

➤ *Upayujya Bhaga of Arka:*

Roots, Bark, Flowers, Leaves, Latex2 Ksheera, Twak, Mula3 All the parts like root, stem, leaves and flowers of Calotropis are used in indigenous system of medicine. The serum derived from its latex contain an active principle, Calotropin, which is known toxic.8

## II. PRAPTHI STHANA- ARKA PLANT IS FOUND IN THROUGHOUT INDIA.3

➤ *RoopaParignana: Morphology of Arka( स्तरप)*

It is a large shrub growing to 4 m (13 ft) tall. It has clusters of waxy flowers that are either white or lavender in colour. Each flower consists of five pointed petals and a small "crown" rising from the center which holds the stamens. The aestivation found in calotropis is valvate i.e. sepals or petals in a whorl just touch one another at the margin, without overlapping. The plant has oval, light green leaves and milky stem.1 Leaf is Simple Opposite Elliptic-ovate to obovate, greyish-green in colour and have entire margins, relatively thick (5-30 cm long and 4-15 cm wide) with a cordate leaf base. Secondary veins 5-7 pairs. Flowers are in clusters 15-25 mm across white or pinkish five Flowering occurs mostly during winter, Fruits are large 6-12 cm long and 3-7 cm wide These fruit have thick and spongy skins which split open at maturity numerous brown, flattened seed, Seeds are compresses, broadly ovoid, with a tufted silky hair.3 obtuse or depressed at the apex.4 ,

follicles 3-4 inch long, recurved.8

➤ *Sangrahakaala: Season of Collection of Drug:*

Arka Ksheera is collected during grishma rutu [march, april, may].23

➤ *Varieties of Arka:*

There are two varieties.

- Calotropis procera [white flower]
- Calotropis gigantea [purple flower]

In *Bhavaprakash Nighantu*, Arka is classified under Guduchyadi Varga with two varieties: Shvetārka (white Arka) and Raktārka (red Arka) 10

➤ *Chemical Composition:*

Active Principles of Arka are calotropin, alpha-amyrin, beta- amyrin, bitter principles, mudarine.11

➤ *Gunakarma:*

Rasa(taste)—Katu, Tikta (tasteless or sweet ) Vipaka—Katu Guna—rooksha, laghu, tikshna Veerya — Ushna Karma—Kushtaghma, Kandughna, Vishaghna, Krimighna,Vranaropaka, Plihaghna, Gulmaghna, Arshoghna, Udararogahara, Deepana, Pachana, Swedajanana,Balya, Rasayana, Raktashodhaka, Hridayottejaka. Doshaghnata – balances Kapha Vata dosha. Rogaghnata— Kushta, Kandu, Visha, Krimi,Vrana, Pliha, Gulma, Arshas, Udararoga.

➤ *Shodhana Karma (Purification steps of Arka)*

Table 2 Shodhana Karma (Purification Steps of Arka)

Part of Arka	Ashuddha Nature / Doṣha	Shodhana Dravya Used	Shodhana Method (Vidhi)	Purpose of Shodhana
Arka Kṣhīra (Latex)	Ati-tīkshṇa, usṇa, viṣhawat	Go-dugdha (Cow's milk)	Kṣhīra mixed with equal quantity of gokshira → Mild heating (manda agni) → Coagulated part separated & washed	Reduces viṣhatva, tīkṣṇatā; makes it safe for internal use9,10
Arka Patra (Leaves)	Tīkshṇa, ushṇa, kṣhobhaka	Eranda taila (Castor oil)	Leaves smeared with oil → Mild heating till soft → Used warm or cool used as per the condition	Suitable for external use in vāta-kapha disorders11,12
Arka Mūla Twak (Root bark)	Tikshṇa, usṇa, vyavāyī	Go-dugdha / Kāñji	Cut pieces subjected to swedana in kanji or dugdha for one yāma → Washed & dried in shade	Reduces irritation, toxicity; enhances therapeutic utility9,13
Arka Pūshpa (Flowers)	Ushṇa, tīkshṇa	Go-dugdha / Jala	Mild swedana or washing before use	Removes excessive tīkṣṇatā

➤ *Yogas/Formulations:*

Table 3 Yogas/Formulations

Sl.No.	Yogas (formulations)	Dosage Forms	Indications	Reference Book
1	Arka Kṣhāra	Kṣhāra	Arshas, Bhagandara	Sushruta Saṁhitā
2	Arka Taila	Taila	Vāta-vyādhi, Shotha	Cakradatta
3	Arka Lepa	Lepa	Vraṇa, Kuṣṭha	Bhāvaprakāśa
4	Arka Kṣhīra Yoga	Latex formulation	Arshas, Granthi	Rasatarangī
5	Arka Mūla Kvātha	Decoction	Gulma, Udara	Bhāvaprakāśa
6	Arka Patra Sveda	External therapy	Sandhi-shoola	Cakradatta

These are few yogas of Arka which are used in different diseases.

➤ *Arka Amayika Prayogas*

On In shlipada it is given with rasasindhura or rasa karpura, in Gandamala, paste is made out of kanji and applied, in shwasa and kasa, its root powder is administered for 2to 4 gms later it expels kapha through vomiting, in tamaka shwasa, a pana is prepared with yava, leaf, bud of arka, mixed with honey is given, in jirna amavata, arkadi churna is mixed with snuhi relieves pain in the joints, Arka dugdha is usefull in ykruth pliha vrudhhi, pushpa rasa is given in agnimandya, on jirna vrana Arka churna is dusted on vrana, as it has got vrana lekhana and ropana properties, the patra is warmed after applying eranda taila is kept on sandhi shotha, for fumigation purposes, arka mula churna is used.6

➤ *Arka Visha Lakshana*

On application - localized redness, vesication. On ingestion - burning pain in throat and stomach, salivation, stomatitis, vomiting, diarrhoea, dilated pupils, tetanic convulsions.3 In contact with skin, produces inflammation and vesication. Eye contact results severe conjunctivitis. On ingestion there is abdominal pain, vomiting, diarrhoea, convulsions and sometimes death. Pupils may get dilated.23 applied to the skin, it causes redness and vesication. When taken by mouth, the juice produces an acrid bitter taste, and burning pain throat and stomach, salivation, stomatitis, vomiting, diarrhea, dilated pupils, tetanic convulsions, collapse and even death.22

- Locally – It can give rise to lesions resembling bruises on skin (called fabricated injuries), which at times can lead to pustule formation and vesication. Juice when installed into the eyes or coming in contact with eyes can result in severe conjunctivitis.

- Orally –When taken orally it produces bitter taste, burning pain in the throat, salivation, nausea, vomiting etc. followed by diarrhea, pain in abdomen, mydriasis, tetanic convulsions, delirium, collapse and death.23

➤ *Arka (Callotropis Procera)- Visha Vegas (Toxic Effects)<sup>16)</sup>*

- 1st Vega: Mukhādi Daha – Severe burning sensation involving the mouth, throat, and stomach.

- 2nd Vega: Chardi (Vamana) – Persistent nausea associated with repeated episodes of vomiting.
- 3rd Vega: Atisāra – Profuse diarrhea accompanied by intense burning sensation.
- 4th Vega: Udarāśūla – Severe abdominal pain with colicky discomfort.
- 5th Vega: Bhrama – Giddiness with vertigo and mental confusion.
- 6th Vega: Mūrcchā – Fainting with loss of consciousness and extreme physical weakness.
- 7th Vega: Hṛīth-vyathā / Hṛīth-dosha – Palpitations and cardiac distress due to cardiotoxic action.
- 8th Vega: Twak-dosha and Sādhāraṇa daurbalya – Burning, blistering, dermatitis or ulceration on skin contact accompanied by generalized weakness and collapse in severe toxicity.
- Aushadha Matra (Therapeutic Dose) :- Root bark powder ½ to 1 grams. For inducing emesis – 3 to 5 grams, Latex – 1/8 to ¼ grams, Flower – 1 to 2 grams
- Maraka Maatra (Fatal Dose): ksheera - 3 to 6gm twak and churna - 3 to 4gm<sup>3</sup> Uncertain.22
- Maraca Kaala (Fatal Period): 1 to 8hrs [might extended upto 12hrs]22

➤ *Chikitsa (Treatment): As per Ayurveda –*

- Palasha is an antidote for arka visha [poisoning due to calotropis]
- Ulceration due to contact with latex of arka is treated by washing it with decoction of palasha and sprinkling of powdered leaves of palasha.
- Decoction of palasha is given for oral consumption. As per modern toxicology.
- Gastric lavage [with warm water]
- Demulcents [e.g. white of egg]
- Morphine [for pain]
- Stimulants.3

According to Ayurveda, The leaves of the tamarind plant should be churned in water and if this application is rubbed over the body and oral intake of the medicated water prepared with gairika subsides effects of snuhi and arka.

• *According to Modern*

- Gastric lavage with warm water.

- ✓ Administration of demulcents, stimulants.
- ✓ Other drugs as indicated symptomatically
- Time of administration (SevanaKala)<sup>(21)</sup>: It can be administered during winter and spring season.
- Anupana(adjuent): sheetala jala.
- Contraindications: Hypersensitivity to Calotropis Procera is a contraindication.<sup>22</sup>
- Post Mortem Appearance.<sup>22</sup>

- *Dilated Pupils*

- ✓ Froth at nostrils and mouth
- ✓ Stomatitis
- ✓ Inflammation of GIT
- ✓ Congestion of internal organs [e,g, liver, spleen, kidneys, brain and meninges.]

These includes dilated pupils, froth, acute inflammation of alimentary tract.

The stomach may show an acute ulcer or even perforation.

The viscera including the brain and its meninges are congested.

The abdominal viscera and brain are congested.

### III. DISCUSSION

- Arka is classified as an upaviṣa dravya in Ayurveda, signifying substances that are toxic by nature but therapeutically useful after proper shodhana and dose regulation. This dual property necessitates cautious clinical application under classical guidelines. <sup>14,15</sup>
- Classical texts describe shweta arka and rakta arka based on morphological and potency differences. These varieties correspond to Calotropis procera and Calotropis gigantea, respectively.<sup>15</sup>
- Different parts of Arka such as kṣīra, patra, mūla-tvak, puṣpa, and bīja are used therapeutically. Among them, latex is the most potent and toxic, requiring careful handling. <sup>14,17</sup>
- Shodhana is mandatory for Arka to reduce its toxic effects and enhance therapeutic safety. Classical procedures like swedana in godugdha and soaking in *Takra* are commonly advocated.<sup>14,20</sup>
- Arka possesses katu-tikta rasa, tīkṣṇa and laghu guṇa, and uṣṇa vīrya, resulting in kapha-vāta shamana. These properties explain both its therapeutic efficacy and irritant nature.<sup>14,16</sup>
- Toxic manifestations of Arka include burning sensation, blistering, vomiting, diarrhea, and systemic disturbances. Such effects are primarily attributed to its tīkṣṇa and uṣṇa properties.<sup>15,20</sup>
- Excessive or unpurified administration of Arka is described as *maraka* in classical texts. This highlights its narrow therapeutic margin and the importance of precise dosage.<sup>17,19</sup>

- After proper purification, Arka is used in conditions such as arshas, shotha, krimi, and kuṣhta. It is administered in forms like lepa, taila, kṣhāra, and swarasa.<sup>1,2</sup>
- Management of Arka toxicity includes withdrawal of the drug and administration of Snigdha and shīta dravyas. These measures counteract its ushṇa and tīkṣṇa effects.<sup>19,20</sup>
- Indiscriminate use of Arka in herbal practice may lead to adverse effects due to its toxic nature. A rational, text based approach is essential for its safe clinical application.<sup>14,21</sup>

### IV. CONCLUSIONS

Arka, though classified as an Upaviṣa, occupies a significant place in Ayurvedic therapeutics due to its potent guṇa-karma and wide range of clinical applications. A critical understanding of its varieties, upayujya bhāga, shodhana procedures, dosage limitations, and Visha lakṣhaṇa is essential to harness its therapeutic potential while preventing toxicity. Rational use of Arka, strictly adhering to classical guidelines and physician supervision, ensures its safe and effective incorporation into contemporary Ayurvedic practice.

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