BHALATAKA (Semecarpus anacardium Linn.f.): A comprehensive Ayurveda review

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Introduction:

The word bhallataka describes the sharp attribute of the herb, in comparison to that of a javelin. It has various synonyms, describing the different properties, like anala – a fire, shophakrita one which causes oedema, krimighna - vermicide, vatari - enemy of vata etc.

Bhallataka grows throughout India in hot weather and in Himalaya’s upto 1000 metres height. The plant is found in abundance in Bihar, Bengal and Orissa. It is a medium sized tree growing upto 10-15 metres in height. The bark is grey in colour and exudes an irritant secretion on incising. The leaves are 30-60 cm long and 12-30 cm broad. They are glabrous above and pubescent beneath. The flowers are greenish white, in panicles. Fruits are 2-3 cm broad. The flowering occurs in june and then onwards the plant bears fruits.

The botanical name of bhallataka is Semecarpus anacardium Linn.f. and it belongs to family Anacardiaceae. An alkaloid, Bhilawanol, has been isolated from oil and seeds. Bhilawanol from fruits was shown to be a mixture of cis and Trans isomers of urushiol (Naure 1960, 186, 389). Other components isolated are anacardic acid, cardol, catechol, fixed oil, anacardol and semecarpol. From the defatted nuts, three biflavonoids A, B and C have been isolated. A new biflavonoid jeediflavone and galluflavone isolated from nut shells

Bhallataka is used both, internally as well as externally. The fruits, their oil and the seeds have great medicinal value, and are used to treat the wide range of diseases. Internally, bhallataka is widely used in a vast range of diseases because of its multifarious properties.

From medical history one can know about recognition of the continuity of medical thoughts. It tells us about the conception and misconceptions of the past from which one can draw inferences for the present and future times. History of any drug gives insight into its morphology, properties and therapeutic or dietary utility as conceived by various authors at different stages of the history. Thus here historical review of Bhallataka has been put forward in chronological order:
Vedic kala: (2500 B.C. – 600 B.C.):-
The foremost ever documents, regarding plants are the “Vedas”. Superfluous information seems consisted in them, and the herbal medicine is not an exception. Being specific to the plant Bhallataka, There is no reference regarding the drug ‘Bhallataka’ in Vedas. However there are references of Bhallataka in other granthas of vedic period, which are summarized as follows

Earliest references about Bhallataka are found in Panini sutra.\(^1\)

A. Ramayana period: In the epic of Ramayana, references of Bhallataka are found in Ayodhyakanda\(^2\) and Aranyakanda.\(^3\)

Purana (Puranik Kala: 1500 B.C – 300 B.C):-

A. Agni purana: There are references found in this text which indicate that Bhallataka taila was used as kushthagyna and rasayanadrayya. Paryaya are given in the text which indicate that bhallataka was widely used for medicinal purposes.\(^4\)

B. Garuda purana: In prathamakanda of Garuda purana, various references about the qualities and medicinal uses of Bhallataka are found.\(^5\)

C. Brahma purana: In Avantikavarnanam of Brahma purana, reference of Bhallataka is found.\(^6\)

D. Kautilya Arthashastra: References of Bhallataka are found in the 14th part i.e. Aushnishadikam, in the chapters named Parbalaghapatrayoga, Sadiyapranaharadhupa, Ardhamsikamaraka yoga, Masikamaraka yoga and Dansha yoga.\(^7\)

E. Varaha Mihir samhita: Use of Bhallataka in the treatment of horses has been mentioned.\(^8\)

Samhitakala: (2000 B.C. - 1300 A.D.):-
The Samhitakala is the important landmark in the history of Ayurveda. In this kala, the Ayurveda came in the glimpses of the common man. In this period various Samhitas and compiled work of various Acharyas have been done and kept forward. These are following

A. CharakaSamhita (1000 - 1500 BC) :
Screening the literature, it was observed that the concept of Shodhana is mentioned for the first time in Charaka Samhita.\(^9\) In sutra sthana, it is mentioned in aragvadiyaaadhyaya as a content of one of the lepa.\(^10\) One of the component of moostrasangrahameyya mahakashaya\(^11\) and the other classical categorization were mentioned in Table 1. It is indicated for sotha (inflammation with swelling).\(^12\) In chikitsasthana, ten different dosage forms of Bhallataka for rasayana (rejuvenation) were elaborated.\(^13\) Taila (oil), ghrita (ghee) and mishra (both oil and ghee) prepared with the combination of drugs including Bhallataka is indicated for vatakaphaja prameha (diabetic mellitus) and tridoshaja prameha respectively.

Bhallataka dya ghritam is indicated for the disease kaphaja gulna, pleyha(spleen disorders), pandu(anaemia), swasa (wheezing), grahami (Irritable Bowel Syndrome), kasa (cough).\(^14\) Asava prepared with Bhallataka and other drugs is indicated for prameha.\(^15\) Lepa (ointment) yoga prepared with Bhallataka and other drugs indicated for arshas (piles) as external application.\(^16\) For internal purpose administered along with buttermilk for arshas.\(^17\) Bhallataka is an ingredient of Madhukasava indicated for grahami, sotha, kusha (skin diseases) and prameha.\(^18\) Sakthu prepared with the combination of Bhallataka, mustha (Cyperus rotundus) etc. is mentioned for visarpa chikitsa (skin disease).\(^19\) In Vimanasthana, Bhallataka taila extraction method has been mentioned.\(^20\) In kalpashthana, it is mentioned that Leha prepared with swarasasa (juice) of Bhallataka or sritya (decoction) of Bhallataka is a good vamanakalpa (emetic).\(^21\) Bhallatakashthi has been mentioned as a content of Mahaneela taila indicated for Palitya. Bhallataka rasayana has been indicated in Kaphak shukradosha.

B. SushrutaSamhita(1000 – 1500 BC) :
Bhallataka is mentioned under, sutrasthama, chikitsasthama, kalpasthama, shareera sthama and uttaratantra. In sutrasthama, Bhallataka is mentioned in nyagrodha gand\(^22\) and mustadigama.\(^23\) In vamanadravyavikalpavijnaninaya Bhallataka sneha is mentioned to be used in avaleha dosage form.\(^24\) Rasadhi gunas such as madhura (sweet), kashaya (astringent), tikta anurasa (bitter secondary taste), ushnnavirya (hot potency), kaphavata shaman (pacifies kapha and vata) and indications such as kusta, meda (obesity), meha (diabetes), krimi (worms) and ubhayabagadosahara (emetic and purgative) of Bhallataka taila are mentioned.\(^25\) It is mentioned under shakavarga.\(^26\) In
dravadravyavidhiadhyaya, it is mentioned that sheeta jala (cold water) should be taken as amapana (adjuvant) for Bhallataka tailed. In chikitsa sthana, Nyagrodhadi gana is indicated for vrana (wounds) and mahakushta (skin diseases), bhavaraoga is one of the ingredients of this formulation. It is an ingredient in Kalyanaka lavana which is indicated in vataroga (vata diseases), gulma, pleetaha etc. Different formulations of Bhallataka are mentioned for arshas. Bhallataka fruits and its tala are used for the management of kushta. Bhallataka is one of the ingredients in a lepa for shwitra (leucoderma). Indicated for prameha and it is one of the ingredient in a formulation for pramehapidaka (diabetic ulcers) and indicated for the management of madhumeha. It is indicated for one of the kshudraroga valnika (a type of skin disease). Madhu (honey) mixed with Bhallataka kwatha (decoction) is mentioned in sarvopaghatasamaneeya rasayana chapter. Indicated in mahavyadhi. In kalpasthana, Bhallataka along with other drugs is used as anjana (collyrium) for eye diseases. In uttaratantara, for sheetaputana parisheka with Bhallataka, kapitha (Feronia elefantum) etc are mentioned. Bhallataka is one of ingredient in the ghrita (ghee) formulation indicated for shosham (malnourishment), prameha etc. In sharirasthaha, Bhallataka is used in the constructing of satikagara (labour ward).

Asganta sangraha(6th century):-
Mentioned about Bhallataka in sutrassthana, chikitsasthana, uttasthana and kalasthana In the context of Bhallataka Rasayana and Amrita Bhallataka, Vagbhatan has mentioned the Shodhana (purificatory procedures) of Bhallataka. The fruits of Bhallataka are cut into pieces and are kept in brick powder until the oil part is removed.

Asganta Hridaya(7th century):-
In Sutrasthana, Properties of false fruit of Bhallataka are bhrinhanha (nourishment), madhura (sweet), sheeta (cold) and fruit is equal to agni (fire) and possess medhya (memory booster), kaphavatagha (memory). Bhallataka is indicated for yoni (vaginal disorders), stanyarogas (breast milk disorders). In chikitsasthana, Avaleha prepared with Bhallataka and other drugs is indicated for kasa (cough). Ghrita prepared with Bhallataka and other drugs is indicated for rajayaksha (tuberculosis). Bhallataka is the agroushadha (drug of choice) for sushkaarshas (piles). Asava prepared with Bhallataka and other drugs is indicated for grahadosha. Taila, ghrita and mishraka (both) prepared with trikantaka (Tribulus terrestris), nisha (Curcuma longa), Bhallataka etc. is indicated for vatakaphaja prameha, pittaja prameha and tridoshaja prameha respectively. Bhallataka is indicated for all types of kshita (skin diseases) and ghrita prepared with pathya (Terminalia chebula) and Bhallataka is indicated for krimi (worms). Guda (jaggery) preparation with vidanga (Embelia ribes), Bhallataka etc. drugs is indicated for kusha. Bhallataka is used as a rasayana (rejuvenator) in the management of kusha. Taila, ghrita and mishraka prepared with Bhallatakadi drugs is indicated for kusha, charmakeela, tilakalaka (type of skin diseases) etc. In kalasthana, Leha prepared with swarasana (juice) of Bhallataka or sruta (decoction) of Bhallataka is a good vamanakalapa (emetic). In uttaratantara, Dhoopanayoga (fumigation) prepared with Bhallataka, vacha (Acorus calamus) etc drugs is best for sarvagrhaabaddha (all the evil spirits). There is no obstruction which Bhallataka does not cure. Bestows strength to the digestive fire. Extraction methods of taila from Bhallataka were mentioned. Specific pharmaceutical procedure for processing Bhallataka to prepare a ghrita formulation is mentioned. Bhallataka is very teeksha (strong) just like fire but when processed by following certain pharmaceutical procedures the drug acts like amrita (nectar). Thus showing the pharmacodynamics of the drug. Rasayana yoga prepared with vidanga, Bhallataka and nagara (Zingiber officinale) along with madhu and sarpi (ghee) is highlighted. Bhallataka is considered as agroughada (drug of choice) for arshas (piles).

References from Nighantus
Dhanvantari nighantu:-
Bhallatakais kept under chandanadi varga and its synonyms and properties are mentioned.

Sodhala nighantu:-
Properties, synonyms, indications and purification method of the drug are mentioned.

Siddhamantra:-
The Bhallatakashi (seed/nut) is considered under kapha-vataaghnavarga.

Madanapala nighantu:-
Synonyms and properties are mentioned.

Raja nighantu:-
The synonyms, properties of phala (fruits), majja (false fruit) are mentioned under Aamradi varga.

Kaiyadeva nighantu:-
Synonyms of Nadi Bhallataka and its properties are mentioned. 68

**Bhavaprakasha nighantu:**
Synonyms, properties, purification method of the drug are mentioned and it is kept under haritakyadi varga. 69

**Shaligram nighantu:**
Synonyms, properties and purification method of the drug are mentioned and also about the Nadi Bhallataka. 70

**Priyanighantu:**
The drug is mentioned under haritakyadi varga. 71

**Vanoushadhinidarshika:**
Different names, family, usable parts, dose, chemistry, shelf life, properties, purification method and effects by the usage of unpurified seed of the Bhallataka. 72

**References from Rasa granthas**

**Rasa Tarangini:**
Bhallataka synonyms, grahyaabhallatakasyaswarupa (selection methods of the fruits) that which sinks in water were the main criteria for the selection of Bhallataka fruits. Need for Bhallataka shodhana, different shodhana methods, dose, amayikaprayoga (therapeutic indications), and formulations were dealt in detail. 73

**Rasamritam**
Bhallataka shodhana is mentioned. 74

**Ayurvediya Rasa Sastra by CB Jha**
Bhallataka is mentioned in upavisha varga (one of the semi-poisonous drugs), synonyms, grahya lakshana (selection methods), need of shodhana, shodhana methods, Bhallataka guna karma (properties and actions), matra (dose), contraindicated in pitta prakriti and treatment for its toxic nature and important formulations. 75

**Rasa Sastra by Damodar Joshi:**
Synonyms, necessity for shodhana, selection of Bhallataka fruits, shodhana methods, rasadigunas, karma, vyadhiprabhava (specific actions), dose and treatment for the toxic manifestation are mentioned. 76

**References from Modern period:**

**Wealth of India:**
Morphology, habitat, therapeutic uses and chemistry of different parts of drug are noted. 77

**Indian material medica:**
Different names, morphology, useful part, actions, uses and contraindications are mentioned. 78

**Dravyagunavijnana by PV Sharma:**
Different names, morphology, distribution, chemistry, pharmacodynamics, actions, properties and therapeutic uses are mentioned. 79

**Dravyagunavijnana by Gyanendra Pandey:**
Different names, morphology, distribution, chemistry, pharmacodynamics, actions, properties and therapeutic uses are mentioned. 80

**Dravyagunavijnana by JLN Sastry:**
Different names, morphology, distribution, chemistry, pharmacodynamics, actions, properties and therapeutic uses are mentioned. 81

**Indian medicinal plants by Kirthikar & Basu:**
Different names, morphology and therapeutic uses are mentioned. 82

**Ayurvedic pharmacopoeia of India:**
Macroscopic and microscopic structures of the drug noted, along with identity, purity, strength, constituents, properties and therapeutic uses. 83

**Synonyms:**
Bhallataka is having many paryaya (synonyms). Most of the synonyms are based on the irritating nature of the fruits. 84 The synonyms quoted in various lexicons and classics were mentioned in Table2.

- **Bhallataka** - Its touch may produce pricking pain or it scrapes away vitiated kapha like a lancet.
- **Agnika** - Its corrosiveness is compared to fire.
- **Agnimukhi** - It will cause burning and ulceration on the skin.
- **Arushkara** - It produces rashes all over the body.
- **Vatari** - It acts as vatahara.
- **Sphotabeejaka** - Its fruits will produce rashes on the skin.
- **Veeravriksha** - Its touch is intolerable which is similar to the same way a highly courageous worrier who cannot be touched by any ordinary person.
- **Sophahetu** - It produces edema and rashes on the body.

Vernacular names and the natural order were mentioned in Table 3 and Table 4 respectively.

**Rasadigunas (Properties and actions):**
The properties of the drug as per API,
*Rasa*: Madhura, Katu, Tikta, Kashaya
*Guna*: Laghu, Snigdha, Tikshna
*Virya*: Ushna
*Vipaka*: Madhura
*Doshagna Karma*: Vata Kaphagnaha
*Karma*: Deepana, Pachana, Vatahara, Medhya

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<tr>
<th>Sr.no.</th>
<th>Classical texts</th>
<th>Gana/Varga</th>
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<td>1.</td>
<td>Charaka samhita&lt;sup&gt;85,86&lt;/sup&gt;</td>
<td>Deepaniya mahakashaya</td>
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<td></td>
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<td>Kushtaghna mahakashaya</td>
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<td>2.</td>
<td>Sushruta samhita&lt;sup&gt;87&lt;/sup&gt;</td>
<td>Nyagrodhadi gana</td>
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<td>Kashaya varga</td>
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<td>Ashtanga hridaya&lt;sup&gt;88&lt;/sup&gt;</td>
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<td>4.</td>
<td>Dhanwantari nighantu&lt;sup&gt;89&lt;/sup&gt;</td>
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<td>Shadarsana nighantu&lt;sup&gt;91&lt;/sup&gt;</td>
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<td>Madanapacka nighantu&lt;sup&gt;93&lt;/sup&gt;</td>
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<td>Bhavaprakasha nighantu&lt;sup&gt;95&lt;/sup&gt;</td>
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<td>11.</td>
<td>Raj nighantu&lt;sup&gt;96&lt;/sup&gt;</td>
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<td>14.</td>
<td>Gunaratnamala&lt;sup&gt;99&lt;/sup&gt;</td>
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Table 3: Vernacular names

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<tr>
<th>Sanskrit</th>
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<td>Assamese</td>
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<td>English</td>
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<tr>
<td>Marathi</td>
<td>Bibba</td>
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<tr>
<td>Oriya</td>
<td>Bholatakai, Bholai</td>
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D.N-Dhanwantari nighantu; So.N-Sodhala nighantu; M.N-Madanapala nighantu; R.N-Raj nighantu; K.N-Kaiyadeva nighantu; B.P.N-Bhavaprakasha nighantu; S.N-Shadarasa nighantu
Table 4: Natural order Taxonomical Classification:

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<thead>
<tr>
<th>Kingdom</th>
<th>Plantae – Plants</th>
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<tr>
<td>Subkingdom</td>
<td>Tracheobionta – Vascular plants</td>
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<td>Super division</td>
<td>Spermatophyta – Seed plants</td>
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<td>Magnoliophyta – Flowering plants</td>
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<td>Semecarpus anacardium L. f. – marking nut tree</td>
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Karma (actions) mentioned in different Nighantus:

Rogagnata:

Good quality bhallataka:
As per the Brihatreyee’s in rasayanaadhyaya they have told about the qualities of Bhallataka to be taken for medicinal purposes.
These are:-
1. The fruit which is not destroyed by wind, cold and heat.
2. The fruit which is also not infected or without any disease.
3. The ripe fruit of Bhallataka should look like the ripe fruit of jambu “Pakwajambvaprakashani”.
4. “Purnarasapramanaveeryani” i.e. full of rasa, normal shape and size, well grown and having great potency.
5. The Bhallataka which sinks on immersing in water.

Season of collection:-
Acharyas have mentioned that the best season for the collection of Bhallataka is the summer season (Jyeshtha and Aaashadha).

Seasons of administration:-
Winter, being the healthy season it is the best season for the use of Bhallataka (Semecarpus anacardium Linn.f.). It should not be used for long time, in suitable cases it may be used in every season (Nadkarni 1954). As bhallataka is hot in potency, administration in winter season also serves the purpose of reducing the side effects caused due to it’s hot potency, this is also mentioned in Ayurvedic texts.

Contraindications for bhallataka:-
- Summer season
- Pitta prakriti
- Haemorrhagic condition
- Pregnancy
- Diarrhoea
- Dysentery
- Gastritis
- Children
- Old age
- Kidney disorders
Table 5: precautions during bhallataka sevana

<table>
<thead>
<tr>
<th>Do’s</th>
<th>Don’ts</th>
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<tr>
<td>Intake of milk.</td>
<td>Exposure to sunlight.</td>
</tr>
<tr>
<td>Rice cooked with milk and ghee</td>
<td>Use of hot water</td>
</tr>
<tr>
<td>Kernel of coconut, coconut water to drink.</td>
<td>Exposure to fire</td>
</tr>
<tr>
<td>Plenty of ghee, milk, starchy and saccharine foods.</td>
<td>Excessive use of katu, amla and lavana rasa.</td>
</tr>
<tr>
<td><em>Sheeta aahara</em></td>
<td><em>Pitta vardhaka aahara</em></td>
</tr>
<tr>
<td>Use of cold water.</td>
<td>Indulgence in excessive sex</td>
</tr>
<tr>
<td>Application of coconut oil</td>
<td>Intake of nitrogenous foods</td>
</tr>
<tr>
<td>Should be administered in winter season</td>
<td>Should be avoided in summer season</td>
</tr>
<tr>
<td>Vegetarian, light and non spicy diet.</td>
<td>Non-vegetarian and spicy diet.</td>
</tr>
</tbody>
</table>

Toxic effects of bhallataka:-

Acharya Sushruta has mentioned that staying below the tree of Bhallataka can lead to swelling over the body. Also most of the synonyms mentioned by different text indicate it’s toxic nature.

*Madhava Nidana* and other acharyas have described Bhallataka as cause for Vishaja shotha, feeling of hotness. In short it can cause

1. Raised black surface on the body.
2. Itching all over the affected parts.
3. Mild itching and burning during micturition.
4. Rashes all over the body.
5. Gastro intestinal irritant when taken by mouth.

Antidote of bhallataka:-

With mild toxic symptoms it is often not necessary to stop the drug, only a reduction in the dose is sufficient. But if there is any severe rash or itching, Bhallataka should at once be stopped. Antidotes for the treatment mentioned in different texts for the toxic symptoms produced by this drug are –

1. Kernel (Albumen) of coconut.
2. Sesamum seeds
3. Chebulic myrobalan
4. The fresh juice of the leaves of *amlika / chincha* (*Tamarandus indica*) internally is one of the antidotes for such symptoms.
5. Decoction of *Coriandrum sativum* (*Dhaniya*).

The best result is obtained by using the first antidote. Milky juice of the kernel of copocnut, sweetened to taste, is to be drunk in large quantities, as soon as there is a full purgative action, the itching, rash etc. disappear. Any saline purgative also serves the same purpose. Lint soaked in goulard’s lotion if covered on the itchy parts will help in reducing itching.\(^{101}\)

The vesicating action of the active principle of *Semecarpus anacardium* Linn.f. juice is destroyed by caustic potash, if the petroleum ether residue is mixed with cold caustic potash solution, allowed to stand overnight, reacidified with dilute hydrochloric acid and then reextracted with petroleum ether, the residue will not produce a blister, if applied on the skin.
### Table 6: Antidotes mentioned in Ayurvedic texts

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>TEXT</th>
<th>ANTIDOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Chakradutta</td>
<td>Black sesamum along with mulethi is added in milk and paste is prepared. This paste then mixed with butter and applied. Soil under the plant of Bhallataka itself is used to apply on the affected parts. Paste of Shorea robusta.</td>
</tr>
<tr>
<td>2.</td>
<td>Bhavaprakasha</td>
<td>Crush the <em>Sesamum indicum</em> (<em>Tila</em>) in Buffalo milk and add butter and apply with butter. <em>Churna</em> of <em>Yashtimadhu</em> and <em>Sesamum indicum</em> (<em>Tila</em>) grind with milk and apply with butter. Apply the paste of Shorea robusta (<em>Shalapatra</em>).</td>
</tr>
<tr>
<td>3.</td>
<td>Sharangadhara samhita</td>
<td>Ajadugdha (<em>Goat milk</em>) along with tila (<em>sesamum</em>) and butter is used for application. Black mud application over the swelling.</td>
</tr>
<tr>
<td>4.</td>
<td>Bharat bhaishajyaratnakara</td>
<td>Kwatha prepared from <em>patra</em> of <em>Ashwatha</em> plant. Sesamum and black mud (<em>Krishna mritika</em>) is mixed with butter and applied. Make paste of Sesamum in buffalo milk and apply with butter.</td>
</tr>
</tbody>
</table>

**Shodhana of bhallataka:**

There are various *shodhana* methods mentioned in Ayurveda texts for the purification of *Bhallataka*, but API followed only the *shodhana* procedure of *Rasamrutam*.

**Controversial status:**

There are some controversies regarding this drug based on its synonyms. *Aruskara* is the *parayya* given to the drug *Bhallataka*. *Vrttaaruskara* is mentioned in *Nighantu* and is considered as the *Kajutaka* (*Cashew nut*) and it is identified botanically with *Anacardium occidentale* Linn.

The drug *Nadi Bhallataka* is mentioned in *Nighantu ratnakara*. *Kajutaka* is used as tonic and indicated for leucoderma, haemorrhoids, *Grahani* etc. *Nadi Bhallataka* is known with synonyms like *vrsanka Gojanaka* and is *sheetavirya* (cold potency). *Nadi Bhallataka* is mentioned in Sushruta *samhita*. Thakurji is of opinion that it may belong to *Ficus* genus and also expresses his view that *Nadi Bhallataka* may be the *Nandi*. *Nandi* still remains to be controversial plant.

**Conclusion:**

The drug *bhallataka* was used to cure various diseases like fever, diabetes, piles, heart diseases, inflammation, tumors, cancer, spleen disorders, liver disorders etc. The drug should be used after purification for internal purposes. The drug is suitable for *Kapha prakriti* individuals. Detailed information about *Bhallataka* including its antidotes has been described by Acharyas. This review article would help the researchers to get a detailed Ayurvedic references about the drug *bhallataka* (Marking nut).
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