



REVIEW OF BHALLATAKA AND ITS TOXICITY

Dr. Prashant Singh Bhadauria*¹, Dr. Nagendra Thakre² and Dr. Prafulla³

¹M.D. Scholar, Dept. of Agad Tantra Evam Vidhi Vaidhyak,

²M.D. Scholar, Dept. of Kaumarbhritya,

³Reader, Dept. of Agad Tantra Evum Vidhi Vaidyaka,

Rani Dullaiya Smriti Ayurved P.G. Mahavidhyalaya Evam Chikitsalaya, Bhopal (M.P.).

***Corresponding Author: Dr. Prashant Singh Bhadauria**

M.D. Scholar, Dept. of Agad Tantra Evam Vidhi Vaidhyak, Rani Dullaiya Smriti Ayurved P.G. Mahavidhyalaya Evam Chikitsalaya, Bhopal (M.P.).

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ABSTRACT

Semecarpus anacardium Linn.(Family: Anacardiaceae), commonly known “Bhallataka” or “Bhilwa” is a plant well-known for its medicinal value in ayurvedic and siddha system of medicine, It is also popularly used in tribal and rural areas of india for the treatment of various disorders and gaining immunity. It is mentioned in Upavisha Varga in Ayurvedic texts. It is also used for non medicinal purpose like marking of cloth, hair dye etc. since ancient time. It has lots of medicinal property due to various chemical compounds, which are present in it, like bhilawanol, biflavonoids etc. It is known as Rasayana and reported in ancient literature that indiscriminate use of nut oil cause ill effects on skin and eyes. It is common drug indicated therapeutically for the management of various disease like Kustha, Arsha, Udara, Jwara etc. Number of Ayurvedic formulations includes this drug after its proper Shodhana as injudicious use of Asuddha Bhallataka may result in toxic effects like burning sensation of skin, blisters, ulcers etc. The present review deals with the description, chemical composition, Toxicological aspect of Bhallataka.

KEYWORDS: Semecarpus Anacardium, Bhallataka, Rasayana, Upavisha etc.

INTRODUCTION

Agadatantra is the branch of Ayurveda which is meant for diagnosis and treatment of various poisoning such as bites by snakes, insects, spiders, rats etc. and also other poisonous substances like plants and minerals.^[1]

Semecarpus anacardium Linn (SA) is one of the best, versatile and most commonly used herbs as a household remedy, distributed in sub-Himalayan region, Tropical region, Bihar, Bengal, Orissa and central parts of India. It has been freely used all over India since centuries. The word Semecarpus derived from Greek word semeion meaning marking or tracing and carpus meaning nut. Anacardium means like cardium; - “Heart shaped marking nut”. Maharsi Charaka has categorized Bhallataka as Dipaniya- an appetizer, Bhedaniya – accumulation breaking herb, Mutrasangrahaniya – antidiuretic Andkusthaghna – anti dermatosis. Bhallataka is acclaimed as a drug of choice in the treatment of piles of Vata and Kapha types. It has also got the potential to produce allergic manifestations through contact dermatitis. Since it is very hot in potency, it is used only after purification procedures. It has been well known as a medicine since ancient times where the fruit, gum and oil are used for their medicinal properties; this plant has been claimed as “HAIF PHYSICIAN”, in Ayurveda.

Recent reports from all over the world reveals several scientific studies have been conducted on S.anacardium to evaluate its medicinal value.

Ayurvedic properties of Bhallatakare madhur, kashayras, ushnvirya, madhurvipakand laghu, snigdha, tikshna, and ushnagunas.^[2,3] It has several karmas like Kaphavatashamak(alleviates kapha & Vatadosha), Bhootanashan(anti-devil) Pittasanshodhak(expels out pitta dosha), Medhya(beneficial to brain), Vahnakar(improves digestive fire), Vrishya(aphrodisiac), Chedana(excisional functions), Bhedan(incisional function), Bruhan(anabolic in effect), and hence indicated for many diseases like Arsha(haemorrhoids), Udar(ascites), Grahani(inflammatory bowel diseases), Shotha(inflammation), Krumi(helminthiasis), Kushtha(skin disorders, like psoriasis), Vran(wounds), Shwitra(vitiligo), Gulma(abdominal mass), Jwar(fever), Adhman(flatulence), etc. The present review summarizes its description, phytochemistry, therapeutic activity, pharmacological activity.

SYNONYMS

Sanskrit: Antahsattva, Arusharah, Aruskara (Arukara), Arzohita, Ballata (Bhallata, Ballata), Bhallataka (Bhallataka), Bhallatakah, Viravrksa, Visasya;

English: Indian Marking Nut Tree, Marsh Nut, Oriental Cashew Nut;

Hindi: Bhela (Bhel), Bhelwa, Bhilawa (Bhilv), Bhilwa;

Tamil: Erimugi (Erimuki);

Telugu, Nallajeedi;

Gujarati: Bhilamu;

Assamese: Bhelaguti.

Bengali: Bhela (bhela), Bhelatuki.

Kannada: Bhallataka, Bhallika, Goddugeru, Karigeri.

Malayalam: Alakkuceru (alakkuceru), Chera.

Marathi: Bibba, Bibha.

Oriya: Bhollataki. Punjabi: Bhilawa.

PLANT DESCRIPTION

It is a medium sized to large tree, 15-25m in height with a grey bark exfoliating in small irregular flakes. Leaves are simple, alternate, obviate oblong, rounded at the apex, coriaceous, glabrous above and more or less pubescent beneath, main nerves 15-25pairs. Flowers are greenish white fascicled in pubescent pedicles. Fruits are obliquely ovoid or oblong drupes and 2-5cm long. The upper portion of the fruit is cup shaped, smooth, fleshy, orange red in colour and sweet & edible when ripe. It is formed of the thickened disc and accrescent calyx base. The lower base which may be turned the nut, consists of smooth, black shining pericarp which is thick, containing between its outer and inner laminae oblong cells full of a corrosive resinous juice. This juice is white when the fruit is immature, but brownish or quite black when the fruit is ripe. The nut is approximately 1”x 0.75”x 0.33” and weighs on an average 3.5g.^[4] Marking nut tree is similar to the cashew nut tree, in having an edible false fruit that is orange & fleshy, like the cashew nut, the true fruit is black oily and bitter, the kernels of the nut are edible, but the juice of the nut is highly vesicant, and has been traditionally used to mark cloth by washermen. The tree bark exudes a gum resin used in leprosy, venereal infections and nervous debility, juice from the nut is used in ascites, rheumatism, asthma, neuralgia, epilepsy and psoriasis, as well as for warts and tumours, the juice of the nut was effective against epidermal carcinoma, it also has some antidiabetic activity, nut bruised and the exudates is used as an abortifacient and a vermifuge.

CHEMICAL COMPOSITION

A variety of nut extract preparations from *S.anacardium* are effective against many diseases viz. arthritis, tumours, infections etc. Understanding the mechanism of the pharmacological action of *S.anacardium* can be greatly aided by the isolation of its active principle and determination of structure and function relationship.

Nuts – Bioflavonoids A, B, C, tetrahydrobustaflabone, tetrahydroxanthoflavone, nallaflavone etc.

Nutshell – anacardic acid, bhilawanols, galluf flavanone, jeediflavanone etc.

Kernel (phalamajja) oil – linoleic acid, oleic, palmitic & stearic acids.

Fruits – Nicotinic acid, riboflavin, thiamine and essential amino acids.

Leaves – Amenotoflavone.

CLASSICAL REFERANCE

Ācārya Śusrutaha included bhallatak (*Semecarpus anacardium*) in, Nyagrodhādi gaṇa and Mustādi gaṇa. In it and astanga Samgraha it is indicated that, the use of about 1000 nuts of Bhallataka during the schedule of one therapeutic course of “Vardhamanprayog”.^[5,6]

In Charaka samhita fifty mahakasayas has been described in Sutra sthana. Out of these mahakasayas Bhallataka has mentioned in Deepaniya mahakasaya.^[7] (Group of herbs that promotes digestion), Kusthagna mahakasayas.^[8] (Group of herbs that are useful in skin diseases) and mutrasnrahaniya mahakasaya.^[9] (Group of herbs that cause urine retention.).

In Charakasamhita, 10 different types of Bhallatakapreparations have been described in Rasayanaadhyaya^[10] which are following –

Bhallatakasarpi (medicated ghee prepared by boiling with bhallataka), Bhallatakakshir (medicated milk prepared by boiling with bhallataka), Bhallatakakshoudra (preparation of bhallataka mixed with honey), Gudabhallataka (preparation of bhallataka by adding or boiling with jaggery), Bhallatakayusha (soup prepared boiling other drug with bhallataka), Bhallatakataila (medicated oil prepared by boiling with bhallataka), Bhallatakapalala (preparation of bhallataka by adding with palala), Bhallatakasaktu (preparation of bhallataka by adding with roasted corn flour), Bhallatakalavana (Preparation of bha; ataka by adding salt), Bhallatakatarpana (preparation of bhallataka by adding roaster corn flour mixed with large quantity of water).

MEDICINAL PROPERTIES

Rasa(taste) - Katu(pungent), Tikta(bitter), Kashaya(astringent).

Guna(qualities) - Laghu(light to digest), Snigdha(unctuous), ikshna(piercing)

Veerya- Ushna(hot in potency).

Vipaka- madhura(undergoes sweet taste conversion after digestion)

Karma – Kapha – Vatahara, Medhya, Vrsya, Dipna, Bhedana.

Indications – Kapha Vikara, Arsas, Kustha, Krmi, Gulma, Grahani, Vatavyadhi.

THERAPEUTIC USES

External uses- It induces blisters and is antidotal in snake bite, incisions are taken on the snake bite region and juice of bhallataka is applied on it. Haemorrhoids become dry and fall off by an incense of bhallataka. If it is applied over vagina it causes abortion. This nut is applied or cauterization with the seed is done over pain caused by any injury it relieves pain.

Internal Uses

Nervous system – Useful in weakness of brain and nerves, epilepsy, sciatic neuralgia, RA and hemiplegia.

Digestive system – It is used in GIT disorders by its actions like appetizers, digestant, purgative, liver stimulant. Useful in loss of appetite, digestive disorders, constipations, gulma, ascites, sprue, piles and various types of worms, It is the best remedy of intestinal colic.

Respiratory system – Expectoant, Useful in cough and asthma.

Reproductive system–It promotes vitality, stimulates penile nerves, hence it is an aphrodisiac. It stimulates uterus by its hot and sharp properties. It is used in seminal weakness, impotency and dysmenorrhoea, for this godambi should be eaten in winter season.

Skin –It is excreted through the skin. Bhallataka is the best medicine for dermatoses, vitiligo, vatrakta. Shevate + milk is useful on joint inflammation.

Satmikaran–It improves agni of each dhatu and also acts as a tonic and rejuvenator. Useful in general debility.

Part used – Fruit, Oil, godambi.

Dosage – Fruit powder – 3-6 masa., Oil – 10-20 drops.

Shodhana Sanskara of Bhallataka

The process in which specific substances are treated with advised matter by rubbing, steaming etc., so as to remove its harmful or toxic effects is known as shodhana sanskara (purification process).^[11] Poisonous plants are subjected to shodhana sanskara (purification process), before its therapeutic use. This process reduces toxicity of poisonous plant considerably and keeps it to required optimum level.^[12] If juice of Bhallataka (even in traces) comes in contact with body, produces severe daha (burning sensation), and Vrana (ulcer). When it comes in contact with face, it produces acute burning sensation with shotha (inflammation) and Visarpa. Hence it is necessary to undertake shodhana sanskara of Bhallataka with precaution before using it in medicine to avoid toxic effects of Ashuddha (impure) Bhallataka.^[13]

Methods of shodhana sanskara of Bhallataka

1. With Brick Powder- The ripened Bhallataka fruits which are submerged in water are selected for shodhana sanskara.^[14] Bhallataka fruits and Ishtika churna (Brick powder) are filled up in a pottali made up of 3-4 folds of cotton cloth. This pottali is rubbed by hand by applying moderate pressure. When brick powder become wet with oil and the skin of Bhallataka fruit is peeled off, it is washed with hot water. In this process Bhallataka becomes Shuddha (pure).^[15,16]

2. With Coconut water - Bhallataka fruits are cut in two pieces and placed in Dolayantra (swing apparatus) is

heated for about 1-2 hrs. In this process Bhallataka becomes shuddha. Precaution during Shodhana sanskara - Coconut oil should be applied on face, hand, legs and other exposed parts of body to avoid harmful effects.

Manifestation of Toxicity of Bhallataka

In Charaka samhita one of the cause of Agantuja shotha (exogenous swelling) is contact of fruits or flowers of Bhallataka with body. If juice of Bhallataka (even in traces) comes in contact with body, produces severe daha (burning sensation), and Vrana (ulcer). When it comes in contact with face, it produces acute burning sensation with shotha (inflammation) and Visarpa. Some persons have intolerance of Bhallataka and they show manifestation like dark urine, itching all over body, red patches, blisters, diarrhea, fever, bloody urine, blisters are ruptured even show Unmad (Psychological disorder). Oligouria, cloudy urine, itching at anus and penis may also find. Some cases are reported of adverse effect of Bhallataka during treatment of piles.

Treatment of Bhallataka Toxicity

Bhallatka Shothahara Yoga³⁹- Local application of paste of tila (sesamum) rubbed with buffalo milk and mixed with butter Or Local application of paste of Yashtimadhu (Glycyrrhiza glabra) and tila (sesamum) rubbed with milk Or local application of rubbed Shalapatra (Desmodium gangeticum). Arushkara Shothaghna lepa - Paste of tila (sesamum) with goat milk and butter Or Krishna mrittika (Black clay) is used in shotha caused by Bhallataka. Local application for quick relief of Bhallataka shotha are as follows - Mixture of Meghnad swarasa (Amaranthus spinosa juice) and butter Or Mixture of Devdaru (Cedrus deodara), Sarshapa (Brassica juncea), Nagarmotha (Cyperus rotundus) and Navneeta (butter) Or Mixture of Navneeta (Butter), tila (sesamum), Mishri (sugar) and milk Or Neema (Azadirachta indica), tila (sesamum), tila taila (sesamum oil) are boiled together and made concentrated to apply locally. When manifestation of toxicity observed, medication of Bhallataka is stopped and white albumen of coconut or juice of leaves of Chinch (Tamarindus indica) given or Sesamum or coconut is given to eat. Externally coconut oil, ghee, lead lotion is applied. The specific antidote for the toxicity of Bhallataka is Bibhitaka (Terminalia bellerica). The decoction or powder preparations with fruit rind and bark of Terminalia bellerica are effective for the sudden reactions and for systemic effects. Drugs that mitigate Pitta like milk and clarified butter and other drugs with cold potency may also be used. Five cases of contact dermatitis caused during different stages of shodhana sanskara of Bhallataka fruits due to improper handling of utensils and disposal of media used in shodhana procedure. The affected persons were advised external application with pounded Nimba (Azadirachta indica) leaves on affected parts and internal administration of Sarivadyasava 30 ml thrice daily after food & triphala churna 5gm before food twice daily.

Precaution while consuming Formulation of Bhallataka

Pathya- Person should consume milk & rice and ghee in large quantity.

Varjya(Avoid)- Walking in sun, excess sexual intercourse, meat consumption, salt, exercise, and oil massage.

Contraindication of Bhallataka Formulations in- Pitta diseases, Hemorrhagic tendency, Pregnancy, Child, old age, Diarrhea, Nephritis & summer(hot) season.

TOXICITY

Since Bhallataka is extremely hot and sharp in its attributes, it should be used with caution. Individuals showing allergic reactions to it should stop and avoid the usage of Bhallataka. It should not be used in small children, very old persons, pregnant women and individuals of predominant pitta constitution. The use of the same should be restricted in summer season. For its allergic reactions like rash, itching and swelling, the antidotes used externally are coconut oil, rala ointment, ghee, coriander leaves pulp or butter mixed with musta (*Cyperus rotundus*). The oily part of the nut is toxic and its degree of removal is proportional to its safety margin.

CONCLUSION

Bhallataka is therapeutically more useful. But before using internally, it should be subjected through shodhana sanskara(Purification process). Application of coconut oil on face, extermeties or exposed parts of body should be done before shodhana sanskara as precaution to avoid its toxic effects. Modern toxicology mentions stomach wash and symptomatic treatment, in its toxicity if taken internally. But asdescribed in Ayurvedic texts various pastes like application of goat milk, sesamum, butter or Mixture of Amaranthus spinosa leaves juice and butter can be applied for local manifestation. Internally, albumen of coconut or juice of Tamarindus indica leaves or sesamum and coconut can be given.

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