

RASAYANA KARMA OF BHALLATAKA: A REVIEW**¹Dr. Richa Sharma* and ²Dr. Anita Sharma**

¹Ph.D. Scholar, Dept. of Agad Tantra, National Institute of Ayurveda, Amer Road Joravar Singh Gate, Jaipur, Rajasthan, India, 302002.

²Associate Prof. and HOD, Dept. of Agad Tantra, National Institute of Ayurveda, Amer Road Joravar Singh Gate, Jaipur, Rajasthan, India, 302002.

Article Received on
13 July 2017,

Revised on 03 August 2017,
Accepted on 24 August 2017

DOI: 10.20959/wjpr201710-9527

Corresponding Author*Dr. Richa Sharma**

Ph.D. Scholar, Dept. of
Agad Tantra, National
Institute of Ayurveda, Amer
Road Joravar Singh Gate,
Jaipur, Rajasthan, India,
302002.

ABSTRACT

Bhallataka, a medicinal drug has the ability to penetrate deeply into the tissues and rejuvenate the body that's why it was used to held in high esteem by ancient sages of ayurveda. Maharshi Charak emphasized the *rasayana* property of *bhallataka* and described ten types of preparations with it. He considered *bhallataka* as the best drug to cure the *kaphaj vyadhi*. Charak has categorized *bhallataka* has *dipaniya*-an appetizer, *bhedaniya*-to break accumulated doshas, *mutra sangrahaniya*-antidiuretic and *kusthaghna*-antidermatosis.

KEY WORDS: Rejuvenation, dipaniya, bhedaniya.**INTRODUCTION**

The living organism has been considered as *nityaga* and *anubandha*^[1], the former refers to continuous process of ageing and latter to inherent quality to age in a specific manner and at specific intervals. The measures by which the process of ageing, both chronological and qualitative is delayed constitutes the principles of *rasayana*. In the *brahtrayi* text, several *rasayana yogas* are described with *bhallatak*, in which acharya charaka emphasized the *rasayana* property of *bhallataka* and described ten types of preparations of it^[2]. In ayurveda, *bhallataka* (*Semecarpus anacardium* Linn) is included under *upvisha dravya*^[3] (semi poisonous drug) and in modern classification of poison it is categorized under irritant vegetable organic poison. As per Govt. rules and regulations this poisonous medicinal plants comes under control of Drugs and Cosmetic Act 1940. Though it is toxic in nature it should not get used before detoxification process, involves rubbing of *Semecarpus anacardium* nut with brick powder and then washing the nut with warm water^[4].

It also has activities on nervous system as brain tonic, intellect promoting and strengthening whole body in general. *Rasayana* or *jara chikitsa* is one amongst the eight branches of *ayurveda*; practiced extensively and effectively since ages. Though chiefly concerned with improving the health status *rasayana* is used also as curative treatment with effect thus, it serves the dual purpose of eradicating the ailments and keeping them away thereby promoting and prolonging the life span, the two faces of *chikitsa* that's why acharya Charaka has dedicated the first chapter for *rasayana* in *chikitsa sthana*. An ideal *rasayana* prolongs life, improves memory and intellect, promote health, and provides immunity against diseases thereby helps an individual to lead an energetic life. It improves lusture and complexion of the body, tones the voice and speech and increases the acuity of all the sensory, motor organs along with vitality and vigour. *Bhallatak* posses all these quality so act as a good *rasayana* (restorative and promotive action) by which a healthy person attains *prasasta rasadi dhathus* along with its *medhya* (intellect) prabhava.

AIMS AND OBJECT

1. To discuss, evaluate & elaboration of *Rasayana* with special references to Rejuvenation / Promotion.
2. To discuss, evaluate & elaboration of properties of *Bhallataka*.
3. To discuss, evaluate & elaboration of *Rasayana* effect of *Bhallataka*.

MATERIAL AND METHODS

This article is based on personal experiences & textual review. Material related to *Rasayana* effect of *Bhallataka* was collected from the *Brihatrayi*, *Laghutrayi*, *Nighantu* and available commentaries of those has reviewed. Modern Texts & various websites to collect information on the relevant topics were referred.

CONCEPTUAL STUDY

Table no1: PROPERTIES OF DRUGS HAVING RASAYANA EFFECT^[5]

S.No.	Sanskrit	English equivalent
1	<i>Deergham Aayu</i>	Prolonging age
2	<i>Smriti</i>	Enhancing memory
3	<i>Medha</i>	Enhancing intellect
4	<i>Aarogya</i>	Prevention from disease
5	<i>Tarun vaya</i>	Youthfulness
6	<i>Prabha</i>	Enhancing luster
7	<i>Varna</i>	Improving complexion
8	<i>Swar</i>	Maintaining voice

9	<i>Dehendreeya bala</i>	Strengthening body senses
10	<i>Vaak sidhhi</i>	Empowers oratory
11	<i>Pranati</i>	Promotes gentleness
12	<i>Kanti</i>	Glow of the body

Table no 2: **BHALLATAKA HAVING PROPERTIES LIKE RASAYANA**

Properties	<i>Ch</i> ⁶	<i>Su</i> ⁷	<i>Vag</i> ⁸	<i>Vrind madhav</i> ⁹	<i>Kaideva Nighantu</i> ¹⁰	<i>Guna ratnamala</i> ¹¹	<i>B.P</i> ¹²
<i>Deergh aayu</i>	✓	✓	✓	✓			
<i>Smriti</i>			✓				
<i>Medha</i>	✓		✓	✓	✓	✓	✓
<i>Aarogya</i>				✓			
<i>Tarun vava</i>	✓			✓			
<i>Prabha</i>							
<i>Varna</i>		✓	✓				
<i>Swar</i>							
<i>Dehendriya bala</i>		✓	✓		✓	✓	
<i>Vaak Sidhhi</i>							
<i>Praniti</i>							
<i>Kanti</i>							
<i>Vrishya</i>	✓			✓	✓	✓	✓
<i>Rasavana</i>	✓		✓	✓			✓

Table no 3: **COMMON CHARACTERS OF BHALLATAKA**

<i>Nighantu</i> <i>Characters</i>	<i>Bhavaprakash Nighantu</i> ^[13]	<i>Dhanvantari Nighantu</i> ^[14]	<i>Raj Nighantu</i> ^[15]	<i>Kaideva Nighantu</i> ^[16]	<i>Madanpal Nighantu</i> ^[17]
<i>Guna</i>	<i>Laghu</i>	-	-	<i>Laghu</i>	<i>Laghu</i>
<i>Rasa</i>	<i>Kashaya, Madhura</i>	<i>Katu, Tikta Madhura</i>	<i>Katu, Tikta, Kashaya</i>	<i>Tikta, Kashaya, Madhura</i>	<i>Kashaya, Madhura</i>
<i>Veerya</i>	<i>Ushna</i>	<i>Ushna</i>	<i>Ushna</i>	<i>Sheeta</i>	<i>Ushna</i>
<i>Vipaka</i>	-	-	-	<i>Katu</i>	-
<i>Karma</i>	<i>Shukrala</i>	-	-	<i>Grahi, Deepana</i>	<i>Shukrala</i>
<i>Doshagnata</i>	V-K	V-K	V-K	P-K	V-K
<i>Rogagnata</i>	<i>Udara, Aanaha, Kushtha, Arsha, Grahani, Gulma, Jwara, Kshwitra, Agnimandya, krimi, Vrana</i>	<i>Krimi, Gulma, Arsha, Grahini, Kushtha</i>	<i>Prameha, Arsha</i>	<i>Raktavikar, K ushtha, Arsha, Gulm, Shopha</i>	<i>Udara, Aanaha, Kushtha, Arsha, Grahani, Gulma, Jwara, Kshwitra, Agnimandya, krimi, Vrana</i>

Previous Research work of *Semecarpus anacardium***Antioxidant effect** (Free radical scavenging activity)

- Verma *et al.* investigated antioxidant activity of the aqueous extract of nuts of medicinal plant SA in AKR mouse liver during development of lymphoma. Administration of the aqueous extract of SA to lymphoma-transplanted mouse leads to increase in the activities of antioxidant enzymes, whereas LDH activity is brought down significantly indicating a decrease in carcinogenesis.^[18]
- Sahoo *et al.* investigated the antioxidant activity of ethyl acetate extract of stem bark of SA. Ethyl acetate extract showed the stronger antioxidant activity (due to presence of highest total phenolic content of 68.67% measured as pyrocatechol equivalent) compared to the other (hexane, chloroform and methanol) extracts. The isolation of the ethyl acetate extract of SA stem bark yielded a bright-yellow solid crystal, which was identified as butein. This compound exhibited antioxidant activity (IC₅₀ values of 43.28 ± 4.34 µg/ml), which was comparable to rutin, taken as a standard.^[19]

Anti-inflammatory effect

- Ramprasathet *et al.* investigated the anti-inflammatory effects of SA nut extract on developing and developed adjuvant arthritis. *Semecarpus anacardium* significantly decreased the carrageenan-induced paw edema and cotton pellet granuloma. These results indicate the potent anti-inflammatory effect and therapeutic efficacy of SA Linn. Nut extract against all phases of inflammation is comparable to that of indomethacin^[20].
- Bhitre *et al.* prepared the methanolic, ethanolic, chloroform, ethyl acetate and petroleum ether extracts of fruits of SA and tested to study the antiinflammatory activity using the technique of carrageenan-induced paw edema in albino rats. The extract showed significant antiinflammatory activity comparable to the reference standard aspirin^[21].
- Salvem *et al.* investigated that ethyl acetate extract of SA led to the isolation of major active principle, tetrahydroamentoflavone (THA), a biflavonoid. The *in vitro* cyclooxygenase (COX-1)-catalyzed prostaglandin biosynthesis assay of THA gave an IC₅₀ value of 29.5 µM (COX-1) and 40.5% inhibition at 100 g/mL (COX-2). The *in vivo* carrageenan-induced paw edema assay resulted in dose-dependent antiinflammatory effect of THA and the activity was comparable to that of ibuprofen.^[22]
- Satayavati *et al.* and Bajpai *et al.*, reported the antiinflammatory activity of SA for both immunological and non-immunological origin.^[23]

- Singh *et al.* evaluated that SA extract can inhibit pro-inflammatory cytokine production. *Semecarpus anacardium* extract inhibited the spontaneous and LPS-induced production of pro-inflammatory cytokines IL-1 β and IL-12p40 but had no effect on TNF α and IL-6 production, both at protein and mRNA level. The extract also suppressed LPS-activated nitric oxide production in mouse macrophage cell line, RAW 264.7.^[24]
- Premlatha *et al.* have been reported for immunomodulatory potency, antioxidative, membrane stabilizing, tumors marker regulative, glucose level restoring and mineral regulation properties of nut extract in hepatocellular carcinoma and found to detoxify a potent hepatocarcinogen aflatoxin B₁ and causes its metabolites to excreted in urine.^[25]

Anti atherogenic effect

- Sharma *et al.* demonstrated the cardiac activity of SA, as it generally reduces the tissue and serum hyperlipidemia by the inhibition of intestinal cholesterol absorption coupled with peripheral disposal thus possessing anti-atherosclerotic activity.^[26]

Anti-microbial activity

- Mohanta *et al.* found the antimicrobial activity (disc diffusion method) of *Semecarpus anacardium* with different extract. The petroleum ether and aqueous extract fractions of *Semecarpus anacardium* showed inhibitory activity against *Staphylococcus aureus* (10 mm) and *Shigella flexneri* (16 mm) at 100 mg/ml concentration. While chloroform extract showed inhibition against *Bacillus licheniformis*, *Vibrio cholerae* and *Pseudomonas aeruginosa*, the ethanol extract showed inhibition to *Pseudomonas aeruginosa* and *S. aureus*^[27].
- Nair *et al.* found that the alcoholic extract of dry nuts of *Semecarpus anacardium* showed bactericidal activity *in vitro* against three gram negative strains (*Escherichia coli*, *Salmonella typhi* and *Proteus vulgaris*) and two gram positive strains (*Staphylococcus aureus* and *Corynebacterium diphtheriae*). Subsequent studies have shown that the alcoholic extracts of different parts of the plant (leaves, twigs and green fruit) also possess anti-bacterial properties, especially the leaf extract^[28].

CNS activity

- Farooq *et al.* evaluated the beneficial effect of nuts of SA, extracted with milk, on CNS, mainly for its locomotor and nootropic activities in different experimental animal

models. The extract tested but a slight CNS depressant effect was noted with only 150 mg/kg of the extract and it was found to possess nootropic activity.^[29]

Hypoglycemic effect

- Arul *et al.* studied the effect of ethanolic extract of dried nuts of SA on blood glucose and investigated in both normal (hypoglycemic) and streptozotocin-induced diabetic (antihyperglycemic) rats. The ethanolic extract of SA (100 mg/kg) reduced the blood glucose of normal rats. The blood glucose levels were measured at 0, 1, 2 and 3 h after the treatment and antihyperglycemic activity of SA was compared with tolbutamide, a sulfonyl urea derivative used in diabetes mellitus.^[30,31]

Anti-carcinogenic activity

- Mathivadhani *et al.* studied *Semecarpus anacardium* nut extract use for inhibitory effect on human breast cancer cell line (T47D). At the molecular level, these changes are accompanied by decrease in Bcl(2) and increase in Bax, cytochrome c, caspases and PARP cleavage, and ultimately by internucleosomal DNA fragmentation.^[32]
- Arulkumaran *et al.* investigated the protective efficacy of preparation named as Kalpaamruthaa (KA) (containing SA nut milk extract, dried powder of *Phyllanthus emblica* fruit and honey) on the peroxidative damage and abnormal antioxidant levels in the hepatic mitochondrial fraction of 7,12-dimethylbenz(a) anthracene (DMBA)-induced mammary carcinoma rats. On the basis of the observed results, KA can be considered as a readily accessible, promising and novel cancer chemopreventive agent.^[33]
- Sugapriya *et al.* showed restoration of energy metabolism in leukemic mice treated by SA nut milk extract. Leukemia-bearing mice showed a significant increase in LPOs, glycolytic enzymes, a decrease in gluconeogenic enzymes and significant decrease in the activities of TCA cycle and respiratory chain enzymes as compared to control animals. *Semecarpus anacardium* treatment was compared with standard drug imatinib mesylate. *Semecarpus anacardium* administration to leukemic animals resulted in clearance of the leukemic cells from the bone marrow and internal organs.^[34]

DISCUSSION

Rasayana stands as an answer to solve the problem of healthful longevity including mental development and resistance against disease. *Rasayana* is a specialized type of treatment influencing the fundamental aspect of body i.e. *dhatu*, *agni* and *srotas*. It is possible that

different *rasayana* drugs may act with predominance effect at different levels. These comprehensive effects are brought about with the help of the varied pharmacodynamic properties of these drugs. *Rasayana* effect is not a specific pharmacological action but it is a complex phenomenon operating through a comprehensive mechanism involving the fundamental factors like create excellence of *Sapta dhatu* by *prashast rasadi-samvahan* to promote immunity, *agni* to improve metabolism and *srotas* to improve endocrine and exocrine secretions. It may ultimately be leading to the achievement of the comprehensive effect as stated by Charaka “*Labhopayo Hi Shastanam – Rasadinam Rasayanum*”.^[35]

Rasayana effects are mentioned in term of *vayasthapana* and *ayushkara*, *medhakara*, *urjaskara* so that drug likes *bhallataka* acting at the level of *rasa* by improving specific nutritional values of *poshak rasa*. *Madhura vipaka* and *snigdha guna* act as *rasayana* at level of *rasa* by promoting the nutritional value of the *rasa* which in term helps in obtaining the best qualities of *dhatu*s. *Bhallataka* having a fundamental effect at level of *agni* or digestion and metabolism by virtue of its *ushana veerya*, *laghu guna* and *katu*, *tikta*, *kashaya rasa*. It vitalizing the organic metabolism leading to an improved structural and function pattern of *dhatu*s i.e. *prashasta dhatu*s or best possible biotransformation to produce the best quality bodily tissue and delay senility and prevent other diseases of old age shows *rasayana* effect. *Bhallataka* is *upvisha* possessing the *laghu*, *ruksha*, *aashu*, *vishad*, *vyavayi*, *teekshna*, *ushna guna* may eliminates *ama* and clears up *srotasas/ Srotoshodhana* – the micro channels of all the systems, hence facilitates the nourishment of all the tissues (*dhatu*s) reveals *rasayana* effect in the body. *Medhakara prabhava* of it improve the mental faculty.

CONCLUSION

Bhallataka stands as a valuable drug possessing effective promotive action hence it belongs to group of major *rasayana* drugs with the support of pharmacological and biological activities, carrying classical support to its efficiency. Thus, the drug *bhallataka* has restorative promotive, age-sustaining and tissue-nutritive and anti oxidant activities which make it a potent drug prescribed in *rasayana* therapy.

REFERENCES

1. Sri Satya Narayana Shastri, Caraka Samhita of Agnivesa, Sutra sthan1/42, Chaukhamba Bharati Academy Varanasi, Reprint edition 2005. p.13.
2. Sri Satya Narayana Shastri, Caraka Samhita of Agnivesa,Chikitsa sthan 1-2/16, Chaukhamba Bharati Academy Varanasi, Reprint edition 2009. p.33.

3. Kashinath Shastri, Rasa Tarangini of Sadanand Sharma, 24 Tarang/163, Motilal Banarasidas Academy Delhi, 9th edition 1973. p.676.
4. Kashinath Shastri, Rasa Tarangini of Sadanand Sharma, 24 Tarang/477-478, Motilal Banarasidas Academy Delhi, 9th edition 1973. p.735.
5. Sri Satya Narayana Shastri, Caraka Samhita of Agnivesa, Chikitsa sthan 1-1/8, Chaukhamba Bharati Academy Varanasi, Reprint edition, 2009. p.5.
6. Sri Satya Narayana Shastri, Caraka Samhita of Agnivesa; Chikitsa sthan 1-2/13-19, Chaukhamba Bharati Academy Varanasi, Reprint edition, 2009. p.28-34.
7. Ambikadutta shastri, Sushruta Samhita of Maharshi Sushruta; Chikitsa sthan 6/17-18, Chaukhamba Sanskrit Sansthan Varanasi, Reprint edition, 2014. p.51.
8. Brahmanand Tripathi, Astanga Hridaya of Vagbhatta, Nirmala Hindi Commentary; Uttar sthan 39/78, Chaukhamba Sanskrit Pratishthan Varanasi, Reprint edition, 2014. p.1192.
9. Dr.Premvati Tewari, Vrindmadhav or Siddha yoga of Vrinda; Rasayanadhikar 69/39-40, Chaukhamba Visva Bharati Academy Varanasi, First edition, 2007. p.662.
10. Prof.Priyavat Sharma, Dr.Guru Prasad Sharma; Kaiyadeva Nighantu, Oshadhivarga/121, Chaukhamba Orientalia Varanasi, Reprint edition 2009. p.90.
11. Dr Kailash Pati Pandey, Dr Anugrah Narain Singh; Gunaratnamala of shri Bhavamisra, Haritkyadivarga, Bhallataka, Chaukhamba Sanskrit Sansthan Varanasi, 1st edition, 2006.p.80.
12. Prof.K.C.Chunekar, Bhavaprakasha Nighantu of shri Bhavamisra, Haritakyadivarga/232, Chaukhambha Bharati Academy Varanasi, Revised & enlarged edition 2013. p.134.
13. Prof. K.C.Chunekar, Bhavaprakasha Nighantu of shri Bhavamisra, Haritakyadivarga/232, Chaukhambha Bharati Academy Varanasi, Revised & enlarged edition 2013. p.134.
14. Prof. Priyavat Sharma, Dr. Guru Prasad Sharma; Dhanvantari Nighantu; Chandanadivarga/129, Chaukhamba Orientalia Varanasi, Reprint edition 2008. p.114.
15. Dr.Indradeo Tripathi; Raj Nighantu of Pandit Narhari, Amradivarga Bhallataka/68, Chaukhamba Krishnadas Academy Varanasi, 3rd edition 2003.p.353.
16. Prof.Priyavat Sharma, Dr.Guru Prasad Sharma; Kaiyadeva Nighantu, Oshadhivarga/121, Chaukhamba Orientalia Varanasi, Reprint edition 2009.p.90.
17. Prof.Gyanendra Pandey; Madanpal Nighantu of shri Nrip Madanpal, Abhayadivarga, Bhallataka /281, Chaukhamba Orientalia Varanasi, 1st editon 2012.p.200.
18. Verma N, Vinayak M. *Semecarpus anacardium* nut extract promotes the antioxidant defence system and inhibits anaerobic metabolism during development of lymphoma. Biosci Rep. 2009; 29(3): 151-64.

19. Sahoo AK, Narayanana N, Sahanaa S, Rajanb SS, Mukherjee PK. In vitro antioxidant potential of *Semecarpus Anacardium L.* Pharmacologyonline 2008; 3: 327-35.
20. Ramprasath VR, Shanthi P, Sachdanandam P. Immunomodulatory and antiinflammatory effects of *Semecarpus anacardium* LINN. Nut milk extract in experimental inflammatory conditions. Biol Pharm Bull. 2006; 29: 693-700.
21. Bhitre MJ, Patil S, Kataria M, Anwikar S, Kadri H. Antiinflammatory activity of the fruits of *Semecarpus anacardium* Linn. Asian J Chem 2008; 20: 2047-50.
22. Selvam C, Jachak SM. A cyclooxygenase (COX) inhibitory biflavonoid from the seeds of *Semecarpus anacardium*. J Ethnopharmacol 2004; 95: 209-12.
23. Satyavati GV, Prasad DN, Das PK, Singh HD. Antiinflammatory activity of *Semecarpus anacardium* Linn. A preliminary study. Indian J Physiol Pharmacol. 1969; 13: 37-45.
24. Singh D, Agarwal A, Mathias A, Naik S. Immunomodulatory activity of *Semecarpus anacardium* extract in mononuclear cells of normal individuals and rheumatoid arthritis patients. J Ethnopharmacol. 2006; 108: 398-406.
25. Premalatha B, Sachdanandam P. Potency of *Semecarpus anacardium* Linn. Nut milk extract against aflatoxin B(1)-induced hepatocarcinogenesis: Reflection on microsomal biotransformation. Pharmacol Res. 2000; 42: 161-166.
26. Sharma A, Mathur R, Dixit VP. Hypocholesterolemic activity of nut shell extract of *Semecarpus anacardium* (Bhilawa) in cholesterol fed rabbits. Indian J Exp Biol 1995; 33: 444-448.
27. Mohanta TK, Patra JK, Rath SK, Pal DK, Thatoi HN. Evaluation of antimicrobial activity and phytochemical screening of oils and nuts of *Semecarpus anacardium*. Sci Res Essay. 2007; 2: 486-90.
28. Nair A, Bhide SV. Antimicrobial properties of different parts of *Semecarpus anacardium*. Indian Drugs. 1996; 33: 323-328.
29. Farooq SM, Alla TR, Rao NV, Prasad K, Shalam K, Satyanarayana S.A. study on CNS effect of nut milk extract of *Semecarpus anacardium*. Pharmacology. 2007; 1: 49-63.
30. Arul B, Kothai R, Christina AJ. Hypoglycemic and antihyperglycemic effect of *Semecarpus anacardium* Linn in normal and streptozotocin-induced diabetic rats. Methods Find Exp Clin Pharmacol. 2004; 26: 759-762.
31. Kothai R, Arul B, Kumar KS, Christina AJ. Hypoglycemic and antihyperglycemic effects of *Semecarpus anacardium* linn in normal and alloxan-induced diabetic rats. J Herb Pharmacother. 2005; 5(2): 49-56.

32. Mathivadhani P, Shanthi P, Sachdanandam P. Apoptotic effect of *Semecarpus anacardium* nut extract on T47D breast cancer cell line. *Cell Biol Int*. 2007; 31: 1198-206.
33. Arulkumaran S, Ramprasath VR, Shanthi P, Sachdanandam P. Alteration of DMBA-induced oxidative stress by additive action of a modified indigenous preparation--Kalpaamruthaa. *Chem Biol Interact*. 2007; 167: 99-106.
34. Sugapriya D, Shanthi P, Sachdanandam P. Restoration of energy metabolism in leukemic mice treated by a siddha drug:*Semecarpus anacardium* Linn. nut milk extract. *Chem Biol Interact*. 2008; 173: 43-58.
35. Sri Satya Narayana Shastri, Caraka Samhita of Agnivesa, Rasayanadhyay 1-1/8, Chaukhamba Bharati Academy Varanasi, Reprint edition 2009. p.5.