

Research Article**ROLE OF BHALLATAKARASAYANA IN CANCER**

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ABSTRACT

An integrated approach is required in the management of cancer by using the knowledge gained through various scientific developments. Thousands of traditional compounds are being screened worldwide to validate their efficacy on cancer treatment. *Ayurveda* is supposed to add a step on the curative aspects of cancers having the resemblance with the clinical entities of *arbuda* and *granthi* mentioned in *Susrutha samhitha.Rasayanachikitsa* is one of the therapeutic approaches through which restoration of normal functioning of the body takes place. Bhallataka Rasayana is one of the most important medication which can be used for the treatment of cancer, researches conducted on chloroform extract of the *Bhallataka* (*S.anacardium*) nut possess anti tumour action with increased life span of the patients against melanoma leukaemia, and glioma. The aim of this study is to analyze the effect of *Bhallataka Rasayana* in cancer as a whole. In the present article, we have discussed certain important features of *Bhallataka Rasayana*.

Keywords: *Bhallataka rasayana, Ayurveda, Granthi, Arbuda, Cancer, Antitumour action.*

INTRODUCTION:

- Cancer which has been reported as the second largest non communicable disease after ischemic heart disease has challenged medical scientists with its dreadfulness and adverse effects of available treatment.
- *Ayurveda* offers excellent medicines and treatment which can easily be incorporated with the main stream of cancer medicines.
- *Ayurvedic* drugs by virtue of its anti-cancer potential, anti-oxidant potential can offer a lot of aid in improving and augmenting the quality of life of cancer patients.
- *Rasayanas* have *Jeevaniya, Vayahstapaniya, Balya* and *Brimhaniya* properties, which help to restore the physical strength and support the normal cellular resistance to protect them as well as repair them.
- In *Ayurvedic* classics, numerous references are available on the anti-cancer and anti-oxidative properties of *Bhallataka Rasayana*.¹

- In general it improves the qualities of body elements there by curing the disease as well as maintaining the healthy state of the body.
- Though *Bhallataka* after *sodhana* yield fruitful results, many physicians and pharmaceutical units avoid usage of *Bhallataka* based preparations due to its toxic nature obtained due to improper processing.

OBJECTIVES

- To know the efficacy *Bhallatakarasayana* in cancer.

MATERIALS AND METHODS

- As per *Ayurveda* *Bhallataka* is included in the group of *Sthawara Vanaspathic Visha*.
- *Charaka, Susrutha* and *Vagbhata* are the main treatises of *Ayurveda* have described diverse *Bhallataka* Preparations.
- In *CharakaSamhita* fifty “*mahakashayas*” has been described in *sutrastana*.
- Out of these “*mahakashaya*” *Bhallataka* has mentioned in *Deepaneeya*,² *Kushtaghna*³ and *Mutrasangrahaniya mahakashaya*.⁴

- In *Carakasamhitha*, 10 different types of *Bhallataka* preparations have been described in *Rasayanaadhyaya*.⁵

Table 1:

S NO	PREPARATIONS	S NO	PREPARATIONS
1	SARPI	6	TAILA
2	KSHIRA	7	PALALA
3	KSHOUDRA	8	SAKTU
4	GUDA	9	LAVANA
5	YUSHA	10	TARPANA

- In *Charaka*, *Susrutha* and *AstangaSangraha* it is indicated that, the use of about 1000 nuts of *Bhallataka* during the schedule of one therapeutic course of “*Vardhamanaprayoga*”.^{6,7}
- For *Rasayana* purpose, *BhallatakaKshira*, *BhallatakaKshudra* and *BhallatakaTaila* are different pharmacological preparations of *Bhallataka* are mentioned in *charakasamhita*.⁸

COLLECTION OF BHALLATAKA

- Fruits of *Bhallataka* which are not damaged, free from physical defects, full of rasa are selected. They should attain proper size, be ripened, and resemble the ripe fruits of *Jambu*.
- It should be collected in the months of *suchi* and *sukra* and stored inside the heap of *yava* or *masha* for four months, thereafter in the month of *sahasi* and *sahasya*.⁹



Figure 1:



Figure 2:



Figure 3:



Figure 4:

PURIFICATION OF BHALLATAKA

- *Bhallataka* ripe seeds are taken and put into water. Only those which sink are used for purification and rest are discarded.

- The seed is cut into two and kept immersed in dry brick powder for some time. During this time, the dry brick powder absorbs all the strong pungent oil of *Bhallataka*, reducing its pungency and making it usable for medicinal purposes¹⁰

HOW TO TAKE BHALLATAKARASAYANA

- In the beginning ten fruits of *Bhallataka* should be well boiled in the water, which is eight times to that of drug.
- After boiling, when 1/8th of water remains, it should be filtered, added with milk and given to the patient after his mouth has been smeared with ghee.
- These ten fruits should be added every day by one fruit till the number becomes thirty and thereafter, it should be reduced by one fruit for day till it reaches the original number of ten. Further increase not to be done because thirty fruits of *Bhallataka* is maximum dose .
- By following this procedure, one thousand *Bhallatakas* can be administered.¹¹

PASCHATKARMA

- After digestion, the person should take the rice of *Sali* or *sastika* along with milk and ghee.
- After the administration for a definite time period, the person should take milk only twice a day.¹²

BENEFITS OF BHALLATAKARASAYANA

- By consuming this *Rasayana* person may lives for 100 years.
- Fruits of *Bhallataka* are *tikshna*, *paki*, and *agnisamam*, but when we prepared according to the prescribed methods, then they will work like *amrutha*, this medicine should be administered by physician who is expert in the knowledge of *roga*, *prakrithi* and *satmya*.
- There is no disease caused by *kapha* and no *vibhandha* occurs if we use the *BhallatakaRasayana* in addition to this drug promotes *medha* and *agni*.
- Therefore, persons desirous of attaining long life, vitality and happiness should practice rejuvenation therapy with complete devotion according to the prescribed procedure.¹³

PROBABLE MODE OF ACTION OF BHALLATAKARASAYANA

- As a *Rasayana* it is capable of imparting superior *Rasa* and *Dathus* to the body and toning up the system of the individual. *Rasayana* aid in increasing natural immunity, enhancing general wellbeing, improving the functioning of fundamental organs of the body and prevents signs of early ageing. The main purpose of this *Rasayana* therapy is to impede the ageing process and to delay the degenerative process in the body.¹⁴

- Neuroendocrine theory also known as programmed cell death theory (apoptosis), Postulates that all somatic cells have a built in biological clock, or a genetically controlled life span, offer which they would die, no matter how favorable circumstances are. Immunological theory states that mutated cells stimulate immunological reactions within the organism and these reactions themselves degrade and eventually destroy the organism. Evidence from these theories of ageing supports the potential role of *Rasayana*, as it shows the multiple actions on different systems of the body by modulating the psycho-neuro-endocrine-immune systems.

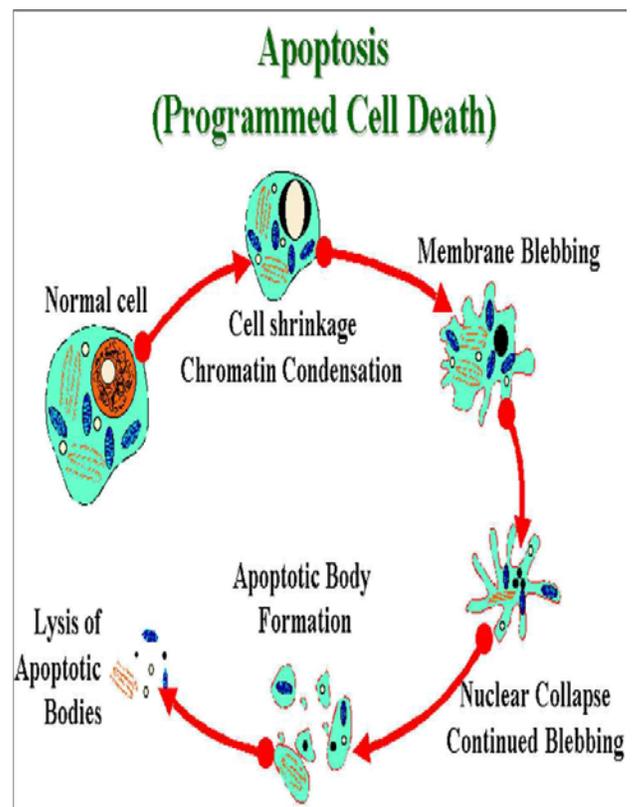


Figure 5:

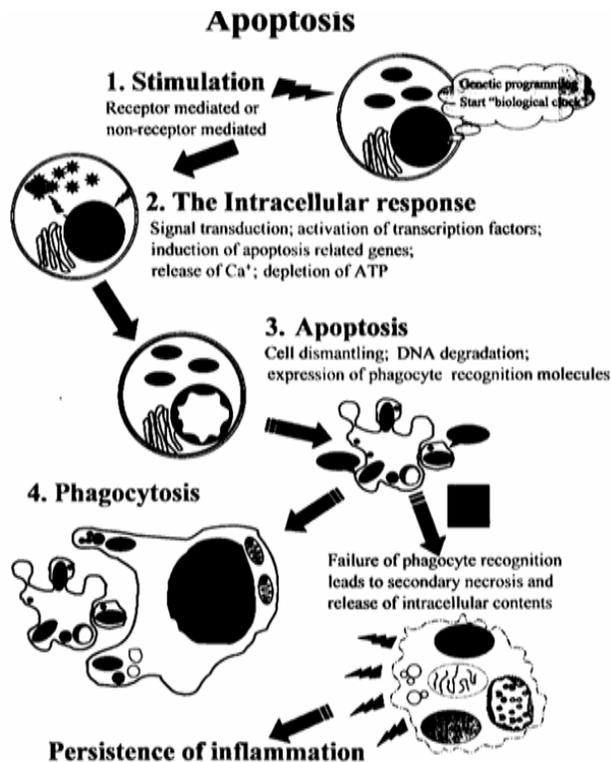


Figure 6:

- *Bhallataka* prevents the aberrant cell proliferation (Hyperplasia) and it also acts against the increase in size of skeletal muscle (Hypertrophy) these hyperplasia and hypertrophy are play a major role in the formation of benign tumours.
- *Bhallataka* is contra indicated in carcinoma which is associated with bleeding.

Anti cancer activity:

- It acts as a anti oxidant and correct the *agni* or improve the digestion by correcting the metabolic defects which further overcome the side effects or complications of anti cancerous drugs. This type of treatment comes under *Vyadhiprathyanikchikitsa*.
- It reduces oxidative damage such as that caused by free radicles. Free radicles are highly reactive chemicals that attack molecules by capturing the electrons and thus modifying the chemical structure. It is capable of counteracting the damaging effect of oxidation. This anti oxidative property of *BhallatakaRasayana* may possibly reduce the risk of cancer and age related macular degeneration.
- *Rasayana* is a specific type of treatment influencing the basic aspect of the body i.e. *Dhatu*, *agni* and *srothas*. *Rasayana* formulations provide

amazing potential to be fascinated for immunomodulatory activity.

- Probably *Rasayana* drugs are having *Madhura*, *guru*, *snigdha* and *sheeta* properties which act at level of *rasa* by promoting the nutritional significance of *rasa* which helps in obtaining the best virtues of *Dhatu*.
- The *Rasayana* having the *ushna*, *laghu*, *ruksha* and *katu*, *tikta*, *kashayarasa* may be acting at level of *agni*, stimulating the organic metabolism.
- The *Rasayana* drugs with *katu*, *tikta*, *kashaya rasa*, *vishada*, *ruksha*, *laghu guna*, *ushna veerya* and *katu vipaka* may cause *srothoshodhana* and may help in the assessment of the *Rasayana* effect in the body.¹⁵

DISCUSSION

- The chloroform exact of *S. anacardium* nut possess anti tumour action which increases the life span against certain types leukaemia, melanoma and glioma.^{16,17} Oral administration of nut juice provides clinical improvement in oesophageal and oral cancer.
- The milk extract of *S. anacardium* produces regression of hepatocarcinoma by stimulating host immune system and normalizing tumour markers including alpha fetoprotein levels.^{18,19} This preparation stabilizes the lysosomes, glycoproteins and mineral content in the body during cancer progression in the body.
- Extracts of fruit are effective against human epidermoid carcinoma of the naso-pharynx in tissue culture.
- In microsomes it acts as a bifunctional inducer of both phase I and phase II biotransformation of enzymes and prevent tumour initiation by preventing carcinogen activation.^{20,21}
- Premalatha et.al have been reported for immunomodulatory potency, anti-oxidative, membrane stabilizing, tumours 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 be excreted in urin²²
- Anacart forte another preparation from *S. anacardium*, it provides clinical benefits with an extension of survival time in various cancers including oesophageal, chronic myeloid leukaemia, urinary bladder, liver cancer.²³

- Another Ayurvedic drug containing s. anacardium, Amura rohitaka, Glycerrhiza glabra and copper powder were reported to inhibit breast tumour development in mice by significantly extending the survival period.²⁴

CONCLUSION

- *Bhallataka Rasayana* is a good anti cancer drug and being used in variety cancer cases.
- It can also be used in cancer chemotherapy can play an important role to decrease the incidence of serious side effects of anticancer drugs.
- *Ayurvedic* practitioners and researchers in medical sciences can help to improve this medicine by increasing their involvement and contribution.
- It is no longer an option to ignore *ayurvedic* drugs or treat them as something unconventional from regular medical practices. The challenge put before this medicine is to move forward carefully, using both reasoning and wisdom.

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REFERENCES

1. Sharma PV, Chaturvedi C, Bandhopadyaya NG, A study on dosage and toxicity of Bhallataka (*Semecarpus anacardium* Lin.) J ResIndian Med 1966;1:130.
2. Pandit K Shastri, Dr.Chaturvedi. Charaka Samhitha of Agnivesha. Reprint ed. Chaukambha Bharathi Academy Varanasi; Sutrastana 4/9 Shadvirechanashatashritiy Adhyay: 2011.p.75
3. Pandit K Shastri, Dr.Chaturvedi. Charaka Samhitha of Agnivesha. Reprint ed. Chaukambha Bharathi Academy Varanasi; Sutrastana 4/11 Shadvirechanashatashritiy Adhyay: 2011.p.81.
4. Pandit K Shastri, Dr.Chaturvedi. Charaka Samhitha of Agnivesha. Reprint ed. Chaukambha Bharathi Academy Varanasi;

Sutrastana 4/15 Shadvirechanashatashritiy Adhyay: 2011.p.89.

5. Acharya V.Shukla, Prof.R.D.Tripathi. Charaka Samhitha of Agnivesha. Reprint ed. Chaukambha Sanskrit Pratishthan Delhi: Chikitsastana, 1/2-16 Rasayana Adhyay Pranakameeya pada, 2009. P. 24
6. Dr. Ananth Ram Sharma. Susruta Samhitha of Susrutha. Reprint ed. Chaukham Surbharathi Prakashan Varanasi: Chikista stana 6/17,Arshachikitsa Adhyay 2010.p.231
7. Dr.Brahmanand Tripathi. Astanga Hridaya of Vagbhata. Reprint ed. Chaukambha Sanskrit Pratishthan Delhi: Uttarastana39/66-71, Rasayanavidhi Adhyay : 2011. P. 1191.
8. Acharya V.Shukla, Prof.R.D.Tripathi. Charaka Samhitha of Agnivesha. Reprint ed. Chaukambha Sanskrit Pratishthan Delhi: Chikitsastana, 1/2 13-16 Rasayana Adhyay Pranakameeya pada, 2009. P. 21-24.
9. Shastri Kasinath, Caturvedi Gorakhnath, editors. Charaka Samhitha, Vidyodini Hindhi commentary. Chikitsastana 4th pada of Chapter 1st Verse 8, Vol II: 16th ed.Varanasi: Chaukhambha bharathi Academy: 1989.p.55
10. *RasaTarangini*: 24: 484-486.
11. Shastri Kasinath, Caturvedi Gorakhnath, editors. Charaka Samhitha, Vidyodini Hindhi commentary. Chikitsastana 4th pada of Chapter 1st Verse 8, Vol II: 16th ed.Varanasi: Chaukhambha bharathi Academy: 1989.p.55
12. Shastri Kasinath, Caturvedi Gorakhnath, editors. Charaka Samhitha, Vidyodini Hindhi commentary. Chikitsastana 4th pada of Chapter 1st Verse 8, Vol II: 16th ed.Varanasi: Chaukhambha bharathi Academy: 1989.p.56.
13. Shastri Kasinath, Caturvedi Gorakhnath, editors. Charaka Samhitha, Vidyodini Hindhi commentary. Chikitsastana 4th pada of Chapter 1st Verse 8, Vol II: 16th ed.Varanasi: Chaukhambha bharathi Academy: 1989.p.56
14. Shastri Kasinath, Caturvedi Gorakhnath, editors. Charaka Samhitha, Vidyodini Hindhi commentary. Chikitsastana 4th pada of Chapter 1st Verse 8, Vol II: 16th ed.Varanasi: Chaukhambha bharathi Academy: 1989. 8-9
15. Shastri Kasinath, Caturvedi Gorakhnath, editors. Charaka Samhitha, Vidyodini Hindhi commentary. Chikitsastana 4th pada of Chapter 1st Verse 8, Vol II: 16th ed.Varanasi: Chaukhambha bharathi Academy: 1989.8-9

16. Cassady JM, Chang CJ, McLaughlin JL. Recent advances in the isolation of structural elucidation of antineoplastic agents of higher plants. In: Beal JL, Reinhard E, editors. Natural products as medicinal agents. Verlag: Hippokrates; 1981. p. 93–105.
17. Chitinis MP, Bhatia KG, Phatak MK, Kesava Rao KV. Antitumour activity of the extract of *Semecarpus anacardium* L. nuts in experimental tumour models. *Indian J Exp Biol* 1980;18:6–8.
18. Premalatha B, Muthulakshmi V, Sachdanandam P. Anticancer potency of the milk extract of *Semecarpus anacardium* Linn. Nuts against aflatoxin B1 mediated hepatocellular carcinoma bearing Wistar rats with reference to tumour marker enzymes. *Phytother Res* 1999; 13:183–7.
19. Premalatha B, Sachdanandam P. Effect of *Semecarpus anacardium* nut milk extract on rat serum alpha-fetoprotein level in aflatoxin B1 mediated hepatocellular carcinoma. *Fitoterapia* 1999; 70:279–83.
20. Premalatha B, Sachdanandam P. Potency of *Semecarpus anacardium* Linn. nut milk extract against aflatoxin B1 induced hepatocarcinogenesis: reflection on microsomal biotransformation enzymes. *Pharmacol Res* 2000; 42:161–6.
21. Premalatha B, Sachdanandam P. Modulating role of *Semecarpus anacardium* L. nut milk extract on aflatoxin B1 biotransformation. *Pharmacol Res* 2000; 41:19–24.
22. Premalatha B, Sachdanandam P. Potency of *Semecarpus anacardium* Linn. Nut milk extract against aflatoxin B1 induced hepatocarcinogenesis: reflection on microsomal biotransformation enzymes. *Pharmacol Res* 2000; 42:161–166.
23. Vad BG. Study of complete regression in four cases of cancer. *The Indian Practitioner* 1973; 26:253–63.
24. Prasad GC. Studies on cancer in Ayurveda and its management. *JRAS* 1987; 3:147–67.