



CLINICAL EFFICACY OF BRAHMI VATI: A CRITICAL REVIEW

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ABSTRACT

According to ayurvedic text efficacy and potency (*Saviryta Awadhi*) of ayurvedic classical preparation depend upon *ritu* (season), *desh* (region), *kal* (time), quality of drug (*ras panchak*), preparation method and route of administration. But according to modern concept, potency and efficacy depends the upon chemical composition of drug or its components. In this article we are trying to explore the claims of *Brahmi vati* in various psycho-somatic diseased conditions. As per *Ayurved sarsangraha*, *Brahmi vati* is describe in treatment of weak memory, mental fatigue, stress disorder, depression, and psychotic conditions. All the components of *Brahmi vati* have been evaluated on the basis of previous researches done by research scholars. *Ras, guna virya* and *vipaka* described in ayurvedic literature are used to test efficacy of drug. In this review article we tried to establish the old ayurvedic text's claim on recent research parameters.

KEYWORDS : Brahmi vati, weak memory, stress disorder, *Bocopa monniera***INTRODUCTION-**

Brahmi word derived from term "*Brahm*", which indicate positive energy as well as creative potential. *Brahmi* is known to promote stablem and awareness toward positive thought. *Brahmi* has mind enhancing property and support nervous system. *Brahmi vati* is a well known Ayurvedic medicine of mental disorders. As *Ayurveda sarasangraha* states *Brahmi vati* is useful for the treatment of following disorders:⁽¹⁾

1. Alpamedha (Weak memory)
2. Manshik Klam (Mental fatigue)
3. Tanav (Stress disorder)
4. Avasaad (Depression)
5. Manoroga (psychotic condition)
6. Anidra (Sleeplessness)

Ayurvedic properties, Chemical composition and clinical properties of ingredient drug of *Brahmi vati* are followed.

Indications of Brahmi vati-**Weak memory-**

Bocopa monniera, content of *Brahmi vati* has been utilized extensively as nootropic, digestive aid and to improve learning and memory.⁽²⁾ Preclinical study in mice, *Bocopa monniera* administration with phenytoin significantly reversed phenytoin induced cognitive impairment as noted by improved acquisition and retention of memory⁽³⁾ Researches on *Brahmi ghrita* (another drug containing *Bocopa monniera*) shows significant decrease latency in modified elevated plus maze and increase in step through latency in passive avoidance test, it may happen due to increase in memory and learning⁽⁴⁾ *Convolvulus pluricaulis* is recommended as a brain tonic to promote intellect and memory, eliminate nervous disorders and treat hypertension.⁽⁵⁾ preclinical study shows significant improvement was noted in paradigms and active avoidance tests in rats in using different laboratory models to evaluate learning and memory assessment using ethanolic extract and ethyl acetate and aqueous fraction of *Convolvulus pluricaulis*.⁽⁶⁾ *Convolvulus pluricaulis* is believed to be the only herb that is capable of enhancing all the aspects related to brain power, such as learning, memory and ability to recall.⁽⁷⁾

Mental fatigue-

Brahmi vati having *Brahmi*, *Sankhapushti*, *Vacha*, *Marica*, *Gojihva* and *jatamanshi* are used as single drug or as component of a drug to treat mental fatigue and other related condition. *Bocopa monniera* is used as anti-anxiety and mental fatigue decreasing remedy supported by both animal and clinical research.⁽⁸⁾

Stress disorder-

Bocopa monniera extract or bacosides have shown an antioxidant activity and antistress, it was suggested that the adaptogenic properties if *Bocopa monniera* would be beneficial in the management of stress related conditions as *Bocopa monniera* showed the potential to be effective in stress in a study on rats.⁽⁹⁾ Other preclinical study of methanolic extract of whole *Convolvulus pluricaulis* plant show reduction in exploratory behavioural pattern and suppression of aggressive behavior reduction in spontaneous motor activity, hypothermia, alteration in the general behavior pattern and potentiate pentobarbitone sleeping time.⁽¹⁰⁾

Depression and anxiety-

Research using a rat model of clinical anxiety demonstrated that a *Bocopa monniera* extract containing 25% bacoside. A exerted anxiolytic activity comparable to lorazepam, a common benzodiazepine anxiolytic drug and it was attentively noted that the *Bocopa monniera* extract did not induce amnesia, side effects associated with lorazepam, but instead had a memory enhancing effect.⁽¹¹⁾ A one month limited clinical trial of 35 patients with diagnosed anxiety neurosis demonstrated that administration of *Brahmi syp* (30ml daily in 2 divided doses, equivalent to 12gm dry crud extract of bacopa) result in significance in anxiety symptoms, level of anxiety, level o disability and mental fatigue and increase in immediate memory span⁽¹²⁾. Other preclinical study shows barbiturate potential effect in albino rats was observed in dose of 100mg/100gm body weight, and this effect was weaker than that of diazepam but stronger than that of *Centella asiatica*. This plant has also been reviewed and reported for its potent anxiolytic, neurodegenerative and antistress activity by various researchers.⁽¹³⁾

Sleeplessness-

A subsequent study has found that the alcoholic extract of *Bocopa monniera* and to a lesser extent the aqueous extract of the whole plant exhibited tranquilizing effect on albino rat and dogs.⁽¹⁴⁾ *Bocopa monniera* has shown to have slight sedative effect by both aqueous infusion and 95% alcoholic extract of *Bocopa monniera* potentiated the sleep induced by Phenobarbital.⁽¹⁵⁾ Another preclinical study on Alkaloid present in Heraphonin shows a sedative effect in mice.⁽¹⁶⁾ Comparative studies against D-amphetamine, chlorpromazine in hyperkinetic children showed that *Jatamansi* (alkaloid present in *Nordostachys jatamansi*) reduces the aggressiveness, stubbornness, restlessness and insomnia.⁽¹⁷⁾ *Convolvulus pluricaulis* is preferred to reducing symptoms associated with anxiety, panic attacks, nervousness and insomnia.⁽¹⁸⁾

DISCUSSION-

Now we are able to justify to claims of old Ayurvedic text on the modern research parameters. (Table 1-3)

Table 1: Ayurvedic properties of ingredient drugs of Brahmi vati⁽¹⁹⁾

S.No.	Ingredient	Properties	Part Used	Qty(%)
1.	Brahmi (<i>Bacopa monnieri</i>)	Rasa-tikta; Anurasa-kashaya; Guna-laghu; Virya-shita Vipaka-madhura Karma-Medhya, increase smaran shakti, Dipaniya,hradya,shoth syamak, pramehaghan, stanya shodhan,stanya janan; Dosa Prabhav-kapha pitta shyamak Prabhav- Medhya	All parts	22.2%
2.	Sankhpushpi (<i>Convolvulus pluricaulis</i>)	Rasa-tikta; Guna-snigdha, pichchila; Virya-kashaya; Vipaka-madhur; Karma-medhya ,mastishka syamak ,Nindrajanak, dipaniya, raktastambhan, raktabharsyamak, vrashya, prajasthapan, rasayan, balya Dosa Prabhav-Tridosahar but specially vaatpittahar Prabhav-Medhya	Leafs	22.2%
3.	Vacha (<i>Acorus calamus</i>) (Sweet flag)	Rasa-katu, tikta; Guna-laghu, tikchana Virya-ushna; Vipaka-katu; Karma-Vednasthapan, shothahar, medhya,sangyasthapan, akchepshamak, Dipaniya, pachaniya, arshoghana, svedajanan, jvaraghana; Dosa Prabhav-kapha vata shyamak	Root & rhizome	11.1%
4.	Maricha (<i>Piper nigrum</i>) (Black pepper)	Rasa-katu; Guna-laghu, tikchana; Virya-usna; Vipaka-katu; Karma-raktotkleshak, lekhan, lalastravajanak, dipaniya, pachaniya, vatanuloman, uttejaka; Dosa Prabhav-vata kaphahar	Fruit	11.1%
5.	Gavjaban (<i>Onosma bracteatum</i>)	Rasa-madhur, tikta; Guna-laghu, snigdha; Virya-shita; Vipaka-madhura; Karma-Dahasyaman, vranropana, balya for mastishka, anulomak, mraduvirechak, balvardhak, raktashodhak, javarhar; Dosa Prabhav-vatapittahar	Leaf & Flower	11.1%
6.	Svarna Mashik bhashm ⁽²⁰⁾	Karma- Rasayana vajikarana, nadi-snyayu balvardhak, jvar, prameh shul, bhagandar,chaya, gulma, pandu,stholya, vran, agnimandhyaanh kushtha har, Dosa Prabhav-pancha vayu niyamak	Bhashma	11.1%

7.	Ras sindur ⁽²¹⁾	Rasa-Tikta and madhur, Guna-Laghu, Virya- Shita, Vipaka-Katu, Karma-Balya, yogavahi, rasayana, vrashya, chakchusya, sakal vyadhi nashak, Dosa Prabhav-tridoshanashak, kaphapittahar.	Bhashma	11.1%
8.	Jatamanshi (<i>Nordostachys jatamansi</i>)	Rasa-tikta, kashaya, madhur; Guna-laghu, snigdha; Virya-shita; Vipaka-katu; Karma-sangyasthapan, medhya, balya, aakchepshaman, vednasthapan, nidrajanan, dipaniya, pachaniya, anulomak,balvardhak, jvaraghana; Dosa Prabhav-tridosahar; Prabhav-bhutaghana (manasdoshahar)	Root	----

Table 2: Chemical composition of each component drugs of Brahmi vati⁽²²⁾

S.No.	Drug	Chemical Composition
1.	Brahmi (<i>Bacopa monnieri</i>)	Ascorbic acid, nicotinic acid, brahmine, herpestine, alanine, hentri-acontane, octacosane, monnierin(saponin), hersaponin, bacoside A & B, bacogenins A1-A4, -sitosterol etc
2.	Sankhpushpi (<i>Convolvulus pluricaulis</i>)	Sankhapuspine, -sitosterol, kaempferol, n-hexacosane etc
3.	Vacha (<i>Acorus calamus</i>)	Aclamone, acorenone, acoragermacrone, acoramone, acorone, cis & trans-asarone, azulene, calacone, calamonone, calamenene, calarene, -gurjunene, camphene, eugenol, telekin, preisocalamendiol, acoric acid, calamen diol, calamenone etc
4.	Maricha (<i>Piper nigrum</i>)	Piperene, piperethine, piperolein A&B, ferupeine, dihydroferuperine, cryptone, dihydrocarveol, & -pinene, piperonal, camphene, -caryophyllene, -alanine, pipecolic acid, carotene, ascorbic acid, piperice etc
5.	Gavjaban (<i>Onosma bracteatum</i>)	Plenty of mucilaginous substance Na (9.5%), K (14.25%), Ca (27%), Fe (1%) and Mg are present
6.	Svarna Mashik bhashm ⁽²³⁾	Copper pyrite (Cu ₂ S, Fe ₂ S ₃)
7.	Ras sindur ⁽²⁴⁾	Red sulphid of mercury (HgS)
8.	Jatamanshi (<i>Nordostachys jatamansi</i>)	Actinidine, carotene, aristolens, calarene, calarenal, elernol, droaristolene, b-eudesmol, jatamols A & B, nardostachonol, nardostachone, patchouli alcohol, seychellane, spirojaatamal, valeranal, valeranone, virolin, angelicin, jatamonsin, jatamansinol, oroselol etc

Table 3: medical properties of each constituent of Brahmi Vati⁽²⁵⁾

S.No.	Ingredient	Charak	Susruta	Uses in Nighantu
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1.	Brahmi (<i>Bacopa monnieri</i>)	Medhya rasayana, apasmarp aapnut, atattvabh inivesh, pushthay ayurbalar ogyakartve	Rasayana, medhy ayusya kamay rasayana	Rasayana, smartiprada, kushtapan dumehaas trakasajit, jvarahar, kanduhar, shopharuc hivishahar	4.	Maricha ⁽²⁷⁾ (<i>Piper nigrum</i>) (Black pepper)	Kushthah ar, rechan, upshoshan, dipaniya, sarvakash har, grahanihar, shulprash man, krmighan shirovirechan	Pippliy adi ghan, tryush ana, chakch ushya,	Dipaniya, avrashya, rochan, kramijit, shvasashu lghna, shoshnut, shulhar, hradyarog har
2.	Sankhpu shpi (<i>Convolvulus pluricaulis</i>)	Medhya rasayana,	----- ----- -----	Grahabhutadidoshadhni, vashikaransidhdida, rasayani, vranmedhagnibalay ukantida,	5.	Gavjaban (<i>Onosma bracteatum</i>)	----- ----- -----	----- ----- ---	Hradhya, pramehakasastrava najvarhari, grahanihar, aruchishvasahar, vransanropani, sarvadantavisharttiji t, upadanshchikitsa, danta chikitsa
3.	Vacha ⁽²⁶⁾ (<i>Acorus calamus</i>) (Sweet flag)	Virechaniya, lekhaniya, arshoghna, traptighna, aasthapn opag, shitprash aman, sanghyast hapana, tiktaskan da, shirovirechan	Pippalyadi, Vachadi, Mustadi, urdhvabhagar	Vamani, Vatshlesh marujapaha, kanthya, medhya, kramihrad vibandhad hmanashu lnut,shakramutravis hodhani, Apasmark aphonma dabhutah aret, kumarana vapurmed habalabudhdi vivardhanaah	6.	Svarna Mashik bhashm	----- ----- -----	----- ----- -----	----- ----- -----
					7.	Ras sindur	----- ----- -----	----- ----- -----	----- ----- -----
					8.	Jatamanshi (<i>Nordostachys jatamansi</i>)	Sanghyasthapan	----- ----- -----	Vissrpada hakushthanut, bhutaghni

CONCLUSION-

As per the above discussion, it can be concluded that *Brahmi vati* is an excellent drug of choice for mental disease, weak

memory, mental fatigue, stress, depression and psychotic conditions.

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