



## EXPLORING THERAPEUTIC POTENTIAL OF *SMRITISAGAR RASA*: A REVIEW

Pund Swati<sup>1</sup>

Dongre Sushma<sup>2</sup>

<sup>1</sup>PG Scholar, Department of Rasashastra & Bhaishajyakalpana, Government Ayurved College, Osmanabad.

<sup>2</sup>Guide and Assistant Professor, Department of Rasashastra & Bhaishajyakalpana, Government Ayurved College, Osmanabad.

### ABSTRACT

Nowadays Psycho-neurological disorders are marked worldwide. The prevalence in the world is about 3.4 million per year. In India, it is more than 1 million per year. Although various modern medicines are treating these ailments successfully, there are reports of rising dependency and adverse effects of these medicines. Ayurveda considers these mental illnesses under *Manasa Roga* and has traditional remedies to combat these illnesses in the form of various formulations. *Smritisagar Rasa* is an Ayurvedic formulation used in treating *Manasa Roga* specially *Apasmara* (Epilepsy). Due to Metallo-mineral contents such as *Kajjali*, *Haratala*, *Manashila*, and *Tamra Bhasma* it has *Yogavahi* and *Rasayana* properties. *Smritisagar Rasa* mainly acts on *Majjadhatu* (Neurons), *Mastishka* (Brain), *Shirastha indriya* (Neuro centers in the brain), *Pranasthana & Vatavahini* (Neurotransmitters). It has 3 *Bhavanadravyas* *Vacha*, *Brahmi*, and *Jyotishmati Beeja taila* respectively. *Bhavna Dravya Vacha* is *Medhya* and *Sandnyasthapana* in nature. It has Anti-epileptic, anti-convulsant, anti-depressant, and neuroprotective activity that is well acknowledged in previous research. *Brahmi* is *Buddhi-Medha-Smrutikar* and it helps to nourish *Majjadhatu*. *Jyotishmati* oil acts mainly on memory loss. A critical review of *Smritisagar Rasa* has explored the importance of its wide therapeutic properties. This article is an attempt to throw light on a probable mode of action of *Smritisagar Rasa*.

**Key Words:** Psycho-neurological, Apasmara, Epilepsy, Sandnyasthapana.

**INTRODUCTION:** Psycho-neurological disorders are marked by disturbances of emotions with abnormalities in the brain. Epilepsy is long considered the most serious disorder nowadays seen globally. Worldwide more than 65 million cases have been registered. The prevalence in the world is about 3.4 million per year. In India, it is more than 1 million per year. Nearly 80% of cases occur in developing countries. Though the death rate in epilepsy is low, the rate of committing suicide by the patient is 1 in 1000 patients. Epilepsy imposes a burden not only on the sufferers but also on their families.<sup>[1]</sup>

The available treatment for epilepsy in modern medical science is the use of anti-epileptic, anti-convulsant & anti-anxiety medicines like phenobarbitone, sodium valproate, etc. Anti-epileptic drugs although effective symptomatically in controlling seizures, but do not prevent or reverse the pathological process of epilepsy. The use of antiepileptic drugs shows adverse effects like cognitive impairment in particular concern, especially for patients who work or study. Idiosyncratic effects, such as skin rashes, and chronic effects, such as weight gain. Nearly all conventional anti-epileptic drugs increase the risk

of congenital malformations when taken during pregnancy.<sup>[2]</sup>

The disease epilepsy is comparable with *Apasmara* in *Ayurveda*. The diagnosis of *Apasmara* is based on its symptoms and the main presenting symptom, as the name defines, *Apasmriti* (loss of consciousness). It manifests physical symptoms such as *Smriti-Buddhi-Satva Samplava* (perversion of memory and intellect) and *Tamah Pravesha* (temporary loss of consciousness).<sup>[3]</sup>

*Ayurveda* prefers a number of formulations to treat *Apasmara* like *Kalyanaka churna*, *Indrabrahma Vati*, *Kushmanda ghrita*, *Brahmi ghrita*, *Panchagavya ghrita*, *Palankashadya-taila*, *Bhootabhairava rasa*, *Vatakulantak rasa* with the potential not only relieving symptoms but also modifying the pathophysiology of the disease.<sup>[4]</sup> *Rasaushadhis* are the treasure of *Ayurveda* due to their quicker action, lesser dose, tastelessness, prolonged shelf period, and better palatability.<sup>[5]</sup>

*Smritisagar Rasa* is one of the most commonly practiced drugs for *Apasmara*. It acts on *smriti* (memorizing power). It is Herbo-mineral formulations that contain various drugs i.e., metal origin, mineral origin, and herbal origin. It is a *Rasakalpa* which is categorized under *Kharaliya Rasakalpa*. As it is very essential for today's practice, it is important to compile and present all related information & scientific data in one document. The present study is an attempt to review *Smritisagar Rasa* from different classics, the recent re-

search & its role in *Apasmara* is been explored.

#### AIM & OBJECTIVES:

To review the literature of *Smritisagar Rasa* with reference to its therapeutic role in *Apasmara* from various Classics of *Ayurveda* and available contemporary literature.

#### MATERIAL AND METHODS:

The review of the present paper was done by Various *Ayurvedic* classics, *Dravya Nighantus*, and Classics of *Rasashastra*. Also, the data was collected from various sources such as journals, magazines, research articles, and the internet. The data were tabulated according to the obtained references from various texts of *Rasashastra*. Also, the ingredients and their properties such as *Rasa*, *Guna*, *Karma*, *Doshaghnata*, and indications of *Smritisagar Rasa* are presented in serial order.

#### I. *Smritisagar Rasa* (SSR):

*Smritisagar Rasa* is a *Kharaliya Rasayana*. It is an important formulation in *Ayurveda* which is designed for *Apasmara* (Epilepsy). As per *Charaka*, there is a loss of *Smriti* (Memorising Power) followed by a loss of consciousness in *Apasmara*. '*Smritisagar Rasa*' the words itself suggests that there is an abundance of memory power and hence it reverses memory loss and unconsciousness. So, it is considered a potent formulation in *Apasmara*. There are two original references of SSR i.e., *Brihatyogatarangini* and *Rasayogasagar*. Both are practiced for the treatment of *Apasmara*.

## II. References of Smritisagar Rasa from various texts-

**Table no.1: Showing the ingredients of Smritisagar rasa from various texts**

Ingredients	English name /Latin name	B.Y.T.	B.N.R.	Y.R.	B.B.R.	R.Y.S.
<b>Metals and minerals-</b>						
<i>Shuddha Parada</i>	Hydrargyrum	+	+	+	+	+
<i>Shuddha Gandhaka</i>	Sulphur	+	+	+	+	+
<i>Shuddha Haratala</i>	Orpiment	+	+	+	+	+
<i>Shuddha Manashila</i>	Realgar	+	+	+	+	+
<i>Tamra Bhasma</i>	Copper	+	+	+	+	+
<i>Swarnamakshika Bhasma</i>	Copper Pyrite	-	-	-	-	+
<b>Bhavana Dravya-</b>						
<i>Vacha kwatha</i> (21 times)	<i>Acorus calamus</i>	+	+	+	+	+
<i>Brahmi swarasa</i> (21 times)	<i>Bacopa Monnierri</i>	+	+	+	+	+
<i>Jyotishmati Beeja taila</i> (1 time)	<i>Celastrus paniculatus</i>	+	+	+	+	+

[B.Y.T.- Brihata yogatarangini, B.N.R.- Brihata Nighanturatnakara, Y.R.- Yogaratnakara, B.B.R.- Bharat Bhaishajyaratnakar, R.Y.S.- Rasayogasagar]

**Table no 2. Shows properties and therapeutic uses of ingredients of Smritisagar rasa w.s.r. to Apasmara-**

Sr. no.	Ingredients	Rasa-Vipaka-Veerya	Guna	Karma	Doshagh nata	Indications
1	<b>Kajjali</b>	-	-	Rasayana, Yogavahi	-	-
2	<b>Haratala</b>	Katu, Tikta, Kashaya-Katu-Ushna	Guru, Snigdha	Lekhana, Jantughna, Pachana, Jwarghna. Twachya, Rasayana	Tridosha-shamak	Bhootajwara, (Haratala bhasma-Apasmara)
3	<b>Manashila</b>	Katu, Tikta-Katu-Ushna	Guru, Snigdha	Lekhana, Rasayana, & Varnya	Kapha-shamak	Bhuta-upadravanashak, Jwara, Visha
4	<b>Tamra Bhasma</b>	Tikta, Kashaya,	Snigdha, Laghu	Lekhana, Vishahar,	Pitta-Kapha-	Netraroga, Apasmara,

		<i>Amla-Madhura-Ushna</i>		<i>Saraka, Deepana, Ropana, Aayushya</i>	<i>shamak</i>	<i>Aakshepa, Khalli,</i>
5	<b>Swarnamakshika Bhasma</b>	<i>Madhur, Tikta-Katu-Sheeta</i>	<i>Laghu</i>	<i>Yogavahi, Balya, Vrushya, Rasayana, Swarya, Netrya</i>	<i>Tridosha-shamak</i>	<i>Jwara, Visha, Apasmara,</i>
6	<b>Vacha (Acorus calamus)</b>	<i>Katu, Tikta-Katu-Ushna</i>	<i>Laghu, Ruksha, Teekshna</i>	<i>Medhya, Pachana, Vanhikrut, Vamak, Vakakar, Smrutikar, Bhutaghna</i>	<i>Kaphavata-shamak</i>	<i>Apasmara, Unmada, Visha, Jirna-Jwar, Mandagni, Arochak, Anidra</i>
7	<b>Brahmi (Bacopa Monnierr)</b>	<i>Tikta, Kashaya-Madhura-Sheeta</i>	<i>Laghu, Ruksha,</i>	<i>Medhya, Rasayana, Aayushya, Vakada, Swarada, Smrutida</i>	<i>Vata-Pitta shamak</i>	<i>Jwara, Unmada, Visha,</i>
8	<b>Jyotishmati (Celastrus panniculatus)</b>	<i>Katu, Tikta, Katu-Ushna</i>	<i>Atiushna, Teekshna, Sara.</i>	<i>Medhya, Budhikar, Smrutikar.</i>	<i>Vata-Kapha shamak</i>	<i>Vrana, Visarpa, Pandu</i>

**DISCUSSION:** *Apasmara* is *sharira-manasa* type of *vyadhi*, as per *Ayurveda*. *Smritisagar Rasa* is a combination of drugs that help break down the *Samprapti* (pathophysiology) of *Apasmara*. *Smritisagar Rasa* mainly acts on *Majjadhatu*, *Mastishka*, *Shirastha indriya*, *Pranasthana* & *Vatavahini*. It does *Brihana* (nourishment) of the above entities.<sup>[6]</sup>

*Kajjali* is one of the ingredients of *Smritisagar rasa*, which is *Yogavahi*, *Rasayana* in nature. *Kajjali* also increases the bioavailability of the drug.<sup>[7]</sup> *Haratala* is also an important content of *Smritisagar rasa*. In *Apasmara*, *Haratala* should be used with *Vacha* and *Jeeraka churna* in combination.<sup>[8]</sup> As per *Rasa* classics, *Haratala bhasma* is *Apasmaraghna*.<sup>[9]</sup> It is having a definite demonstrable anticonvul-

sant action as described by the experimental study conducted in albino rats.<sup>[10]</sup> *Manashila* is also considered one of the best drugs in *Manas vyadhi* (Psychological disorders). Many synonyms of *Manashila* like *manovaha*, *manogupta* etc. are suggestive of its role in *manas vyadhi*. There are some formulations of *Manashila* in *Apasmara* like *Bhootbhairava rasa*, *vatakulantaka rasa*.<sup>[11]</sup> *Manashila* possesses sedative-hypnotic activity confirmed through animal experimental models, particularly by the reduction of the spontaneous motor activity assessed through the actophotometer method and potentiating the diazepam-induced sleeping time.<sup>[12]</sup> *Tamra bhasma* is an important content in *Smritisagara Rasa* having indication in *Apasmara* as per *Rasagrantha*.<sup>[13]</sup> It is in

combination with *Kajjali* and *Rasasindoor* should be used in *vegavastha* symptoms like bluishness of lips, crying & shouting of the patient, and grinding of teeth in epilepsy.<sup>[14]</sup> *Swarnamakshika* is *Rasayana*, *Tridoshghna* and great *Yogavahi* in nature having indication for *Apasmara*, as per *Rasatarangini*.<sup>[15]</sup>

*Vacha*, *Brahmi* & *Jyotishmati Beeja taila* are *Bhavana-dravyas* in *Smritisagar rasa*. *Vacha* is *Katu, Tikta-Katu-Ushna* in nature. It increases *medhakrut pitta* and does *shodhana* of *majjadhatu mala* due to its *Ushna veerya* and hence acts as *medhya*. Due to *Tikta rasa* and *Ushna Veerya*, it increases *majjadhatvagni*.<sup>[16]</sup> In *Apasmara* patients, *Vacha Churna* helps in *Sandnyaprabodhana* due to its *Sandhnya sthapana* action. Anti-epileptic, anti-convulsant, anti-depressant, and neuroprotective activity of *Vacha* is also reported in some studies. Alpha asarone, one of the phytoconstituents present in *Vacha* maintains homeostasis of GABA in temporal lobe epilepsy.<sup>[17]</sup> Beta asarone, also a phytoconstituent lowers epileptic seizures in the mesial temporal lobe in epileptic rat models.<sup>[18]</sup> The methanol extract shows anticonvulsant effects feasibly by potentiating the action of the gamma-aminobutyric acid (GABA) pathway in the central nervous system.<sup>[19]</sup> The methanol extract of *Vacha* with the adrenergic, dopaminergic, serotonergic, and GABAergic systems were found responsible for the expression of antidepressant activity.<sup>[20]</sup> Some shreds of evidence indicate that the use of antidepressant lowers the risk of triggering seizures. The ethanolic extract of *Vacha* was studied for learning & memory enhancing activity. The finding showed an increase in acquisition-recalling and spatial recognition of data.<sup>[21]</sup>

*Brahmi* is *Buddhi-Medha-Smrutikar* in nature. Due to *Kashaya, tikta, Madhura rasa*, and *Sheeta veerya* *Brahmi* nourishes *majjadhatu*, and further, it acts as *Swaryya* and *Medhya*.<sup>[22]</sup> One of the studies reported the neuroprotective role of BM extract in epileptic rats. The experiment showed glutamate-mediated excitotoxicity occurring during seizures and cognitive damage along with pilocarpine-induced epilepsy.<sup>[23]</sup> A clinical study by reported the effectiveness of the alcoholic extract of *Bacopa monnieri* in decreasing symptoms of epileptic seizures.<sup>[24]</sup> Another experiment investigated temporal lobe epilepsy, a common epileptic syndrome. The effect of *Bacopa monnieri* on Gamma amino butyric acid (GABA) binding and gene expression was reported in the cerebral cortex region of epileptic rats. BM and bacoside-A treatment showed a therapeutic effect in this study.<sup>[25]</sup>

The last *Bhavana Dravya* used in *Smritisagara Rasa*, *Jyotishmati Beeja taila* is *Smritivardhak* in nature. Due to *Ushna veerya* and *Teeksha guna*, it increases *Sadhaka pitta* situated in *Hridaya*, which further increases *Medha* and *smriti*.<sup>[26]</sup> *Nasya karma* by using *jyotishmati Beeja taila* showed a significant effect on *Apasmara* by reducing its intensity, frequency, and duration of the attack which is analysed statistically.<sup>[27]</sup> This oil produces a significant anti-depressant-like effect in mice behavioral models like TST and FST by interaction with dopamine-D2 receptors, as well as MAO-A inhibition and reduction in plasma corticosterone levels.<sup>[28]</sup> The use of *Smritisagar Rasa* is not limited to *Apasmara*. It has useful action on *Unmada* symptoms and also in *Hysteria*. This drug is also indicated for *Balagraha* in children. It has therapeutic action for the chronic condition of *Pakshaghata, Apata-*

naka, and Aakshepaka. It is also useful in menopausal syndrome for all mental symptoms. It has action for *Smrutinash* (Loss of memory) in old patients so very useful in geriatric practices. Patients who have melancholia due to *Afeem* (Opium) addiction are said to be treated with this drug.<sup>[29]</sup>

Recent research studies also established its use in Parkinson's disease, non-hemorrhagic infarct, geriatrics & lifestyle disorders as well. Ekka D et al. (2017) evaluated the role of *Rajat bhasma* with *Smritisagar Rasa* in Parkinson's.<sup>[30]</sup> Surtaria, Gurdipsingh & Bahera (2017) have evaluated the role of *Smritisagar Rasa* along with *Brahmi Ghrita Nasya* and *Rasayana* compounds in the management of Epilepsy (*Apasmar*) which reduced the duration of the fits as well as the frequency of the epileptic attacks. It also significantly increased the immediate memory span and reduced mental fatigue.<sup>[31]</sup> Salve et al (2018) have reported a case study of a *Pakshaghat* patient with special reference to non-hemorrhagic infarct with the use of *Smritisagar Rasa* along with other *Shaman Aushadhi & Panchakarma chiktisa* which showed significant results.<sup>[32]</sup> Virupaksh Gupta K.L et al conducted a study on the Relevance of *Rasa shastra* in the 21<sup>st</sup> century with special reference to lifestyle disorders, in 2011 and concluded that SSR is for the replacement of benzodiazepines in mood alterations and social anxiety disorders.<sup>[33]</sup> Sawarkar Punam et al conducted a study on Measures of *panchakarma* for geriatric problems in 2016. In that study, SSR is given in *kaphaja* dementia with other shaman *ausadhi & panchakarma chiktisa*, and concluded these medicines can easily manage geriatric problems such as tremors as well as dementia.<sup>[34]</sup>

**CONCLUSION:** *Smritisagar Rasa* is a commonly used drug in *Apasmara* and helps in reducing symptoms as well as maintaining proper functioning of the brain. It should be used especially in *vataja & kaphaja Apasmara* because most of the ingredients of this *rasa* are *vata-kaphashamak* in nature. Various research studies have evidenced the therapeutic role of its contents on brain cell activities. Further clinical studies need to be carried out to explore its therapeutic potential for more *Balagraha, Unmada vyadhi*, etc.

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**Corresponding Author:** Dr. Swati Pund  
PG Scholar, Department of Rasashastra &  
Bhaishajyakalpana, Government Ayurved  
College, Osmanabad.

Email:swatipund60@gmail.com

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