

Review article

## A critical drug review of ingredients of *Sarasvatha choorna*: used as a remedy for dementia

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### Abstract

According to the present data, there is a high (3.1%) prevalence of Mental Disease among elders of Sri Lanka. Prevalence of Dementia (*Smruthibramsha in Ayurveda*) is 3% of elders in between the age of 60 to 80 years. This will be a big issue for Health policy planning and Health management in future. Objective of this study is carried out critical drug review of ingredients of *Sarasvatha choorna* which has been using mental Disease in Ayurveda. This is a literal review article gathering information from specially relevant chapters of *unmada* (Insanity), *apasmara* (Epilepsy) in *vridathrai*, *laguthrai*, *bhavaprakasha*, materia medica books and literature survey of Dementia in journals and web sources. Among many preparations as a treatment of *manasa roga* mentioned in the authentic Ayurvedic Sanskrit texts, *Sarasvatha choorna* has been frequently used as a treatment and management of *Unmada* (Insanity) which has mentioned in *Bhavaprakasha*. It is indicated person who are mentally retarded and who have low levels of intellect. If, this preparation is regularly consumed, decisive mind, intellect, comprehension and improved memory gradually. Many research have been shown that the Ingredients of *Sarasvatha choorna* have antioxidant, anti stress, anti Demential, brain-tonic, nervine stimulant and tonic, enhance the learning and memory abilities, anti diabetic, anticancer and immunomodulatory, analgesic, antimicrobial, anthelmintics, analgesics and anti-inflammatory, spasmolytic, bronchodilator, gastro protective, hepatoprotective, nephro-protective, prevention of neurodegeneration in Alzheimer's disease, intellect promoting, behavior modifying, anticonvulsant, acetyl cholinesterase inhibitory & memory enhancing properties. It can be concluded that the *Sarasvatha choorna* can be used for many mental diseases, mental conditions and in the Management of Dementia.

### Introduction

According to the present data, there is a high prevalence of Mental Disease among elders of Sri Lanka [1]. Prevalence of Dementia (*Smruthibramsha in Ayurveda*) is 3% of elders in between the age of 60 to 80 years [2]. Dementia is a combination of several symptoms that are associated with the declining abilities of the brain and its functions. There may be a decline in thinking, memory, cognition, language skills, understanding and judgment. This will be a big issue for Health policy planning and Health management in the future. Among many preparations mentioned in the authentic Ayurveda Sanskrit texts as a treatment of *manasa roga*, *Sarasvatha choorna* has been frequently used in the management of *Unmada* (Insanity), it is in the *Bhavaprakasha* [3]. Objective of this study is carried out critical drug review of *Sarasvatha choorna*.

### Material and Methods

This is a critical literal review article gathering information

from authentic Ayurveda texts, especially relevant chapters of *unmada* (Insanity), *apasmara* (Epilepsy) and *smruthibramsha* (Dementia) in *vridathrai*, *laguthrai*, *bhavaprakasha*, materia medica books, journals and web sources to find efficacy of ingredients of *Sarasvatha Choorna* in the management of *manasa roga* especial reference to Dementia.

### Results and Discussion

#### Ingredients of *Sarasvatha Choorna*

**Kusta-** Saussurea leppa (clarke) (*Suwandakottam*) -25g, **Ashwaganda-** Withania somnifera (Linn)-(*Amukkara*) – 25g, **Saindava Lavana-** Rock salt - (*Sahinda Lunu*)- 25g, **Ajamoda-** Apium graveolens (Linn) - (*Asamodagam*)- 25g, **Jiraka-** Cuminum cyminum (Linn) - (*Sududuru*) -25g, **Krisna Jiraka-** Carum carvi (Linn)-(*Kaluduru*)- 25g, **Sunti-** Zingiber officinale - (*Inguru*) – 25g, **Maricha-** Piper nigrum (Linn)-(*Gammiris*) – 25g, **Pippali-** Piper longum (Linn)-(*Thippili*) – 25g, **Patha-** Cissampelos Pereira- (*Diyamitta*) –25g, **Vishnukranthi-** Evolvulus alsinoides-

(*Vishnukranthi*) – 25g, *Vacha*-*Acorus calamus* (Linn)- (*Vadakaha*) 275g, *Brahmi*- *Bacopa monieri* (Linn)- (*Lunuwila*) Juice from 1kg.

### Indications have been mentioned

It is indicated person who are mentally retarded and who have low levels of intellect. If, this preparation is regularly consumed, decisive mind, intellect, comprehension, memory, coordination and capability to author books are improved gradually[3].

### Descriptions of Ingredients

***Kusta*** : (*Saussurea leppa*) (Clarke) can be used for treatment of psychological disturbances, epilepsy, insanity, nervous, urinary and blood disorders, arthritic conditions, respiratory disorders, abdominal colic, diarrhea, piles, liver disorders, anaemia, diabetes, skin disorders, tumours and infective diseases (Ay.A.S.). Research shows that the powdered root of *Kustha* 2 g. to be taken with 4 to 6 g. honey twice a day for insanity [4-6].

***Ashwaganda*** : (*Withania somnifera*) (Linn) can be used in insanity, epilepsy, nervous diseases, debility and rheumatism (Ay.A.S.). Research shows that there are antioxidant and inflammation-modulating mechanisms, it appears that *Withania somnifera* can act as preventatively, as well as repairing function for neurodegenerative diseases including Alzheimer's, Parkinson's disease, and Huntington's disease [7-9].

***Saindava Lavana*** : (Sodium chloride Impura) Rock salt is an appetizer, liver tonic. It can be given for abdominal pain, gastritis and as a sedative. (Ay.A.S) [10]. In small doses, it is highly carminative, stomachic and digestive. It promotes the appetite and assists digestion and assimilation. In large doses it is cathartic, in still larger doses it is emetic. It is given in dyspepsia and other abdominal disorders [11].

***Ajamoda*** : (*Apium graveolens*) (Linn) cures eye diseases, worm infestations, vomiting sensation, hiccough and painful bladder (Ay.A.S). Research shows that chronic oral administration of AG could enhance the consolidation and recall capability of stored information in diabetic animals and did not affect spatial memory of diabetic animals [12-14].

***Jiraka*** : (*Cuminum cyminum*) (Linn) has nervine stimulant, digestive, carminative, anthelmintic, anti-inflammatory, stomachic, diuretic, galactagogue, antimicrobial, anti diabetic, antiepileptic, anti fertility, anticancer, antioxidant and Immunomodulatory properties. It is use full in dyspepsia anorexia, helminthiasis, respiratory disorders, fever and skin diseases (Ay.A.S). Research Studies provide scientific support for the anti stress,

antioxidant, and memory-enhancing activities and acetylcholinesterase inhibitory activity of cumin extract and substantiates that its traditional use as a culinary spice in foods is beneficial and scientific in combating stress and related disorder [15-18].

***Krisna Jiraka*** : (*Carum carvi*) (Linn) has digestive, carminative, anthelmintic, anti microbial, anti-inflammatory, constipating, stomachic reliving, stimulant, depurative, diuretic, galactagogue, uterine and nervine stimulant effects and use full in the treatment of dyspepsia anorexia, respiratory disorders, skin diseases and general debility (Ay.A.S). Research shows that *Nigella sativa* oil (NSO) enhances the learning and memory abilities of the rats [19-22].

***Sunti*** : (*Zingiber officinale*) used for vomiting, dyspnoea, spasmodic pain, cough, gastric and heart diseases, oedema, haemorrhoids, upper abdominal distension and shows hypolipidemic, antiemetic, chemo protective, anti viral, anti inflammatory, anti motion, anti nauseate and anti ulcerogenic activities (Ay.A.S). Research shows that AChE and BChE inhibitors have been accepted as an effective model for managing Alzheimer's Disease, the cholinesterase inhibition by Ginger Extract could be a great importance as a possible therapeutic substances in management of Alzheimer's Disease [23-26].

***Maricha*** : (*Piper nigrum*) (Linn) can be used in dyspepsia, flatulence, gonorrhoea, cough, hemorrhoids, fever, piles, elephantiasis, vomiting and arthritic disorders. It is an antidote for shell fish and mushroom poisoning. Externally it is a rubefacient and counter irritant (Ay.A.S). Research shows that there was increase in memory in piper treated rats. *Piper nigrum* prove to be effective for prevention of Alzheimer's disease [27,28].

***Pippali*** : (*Piper longum*) (Linn) has thermogenic, stomachic, aphrodisiac, carminative, expectorant febrifuge, tonic, appetizer, laxative, digestive, emollient, antiseptic, antifungal, hepatoprotective effects and useful in anorexia, dyspepsia, flatulent, colic, asthma, bronchitis, hiccough, epilepsy, fever, hemorrhoids, gout, lumbago and stimulates liver (Ay.A.S). Research shows that mix of piperlonguminine and dihydropiperlonguminine can considerably control the expression of APP (Amyloid Precursor Protein). When the production of this protein is controlled; it is helpful for patients with Alzheimer's disease [29-31].

***Patha*** : (*Cissampelos Pereira*) cures colic, fever, vomiting, skin diseases, diarrhea, heart pain, burning sensation, itching, poisonous effects, dyspnoea, worm infestation, intestinal growths, chronic poisons and ulcers (Ay.A.S).

Research has found that the memory enhancing activity of *Cissampelos pariera* in mice [32-34].

**Vishnukranthi** : (*Evolvulus alsinoides*) has aphrodisiac, intellect promoting, anthelmintic, expectorant, digesting, brain tonic, anti stress and useful in the treatment for cough, hiccough, bronchitis, asthma, epilepsy, amentia, forgetfulness, internal hemorrhages, dysentery, diarrhea, helminthiasis, falling and graying of hair, skin disorders, general debility and gives protection against permanent diseases(Ay.A.S). Research shows that improvement in the peripheral stress markers and scopolamine induced dementia by EA in the present study indicates the adaptogenic and anti-amnesic properties of EA [35-38].

**Vacha** : (*Acorus calamus*) (Linn) rhizome is thermogenic, intellect promoting, emetic, laxative, carminative, stomachic, anthelmintic, anti bacterial, insecticidal, diuretic, aphrodisiac, anticonvulsant, tranquilizing, anti depressant, anxiolytic, nerve tonic, sedative, tonic resuscitative, anti-

inflammatory, antipyretic, and useful in epilepsy, delirium, convulsions, depression, and other mental disorders (Ay.A.S). Research found that *Acorus calamus* rhizome constituents particularly  $\alpha$  and  $\beta$ -asarone, possess a wide range of pharmacological activities such as sedative, CNS depressant, behavior modifying, anticonvulsant, acetyl cholinesterase inhibitory & memory enhancing[39-43].

**Brahmi** : (*Bacopa monieri*) (Linn) is laxative, intellect promoting, anti- inflammatory, anticonvulsant, depurative, cardio tonic, bronchodilator, diuretic, febrifuge, tonic , memory enhancement, antidepressant, anxiolytic, and antiparkinson (Ay.A.S). It can be used in neuralgia, inflammations, epilepsy, insanity and research shows that *Bacopa monneira* extract reduces amyloid levels in PSAPP mice. *Bacopa monnieri* and its active component Bacocide-A is useful in the management of epilepsy, associated mood disorders and memory problems including Alzheimer's disease [44-48].

Table 1. Pharmacodynamic Properties of Ingredients of *Sarasvatha choorna* in Ayurvedic aspect

	<i>Dravya</i>	<i>Rasa</i>	<i>Guna</i>	<i>Virya</i>	<i>Vipaka</i>	<i>Prabhava</i>	<i>Doshakarma</i>
1	<b>Jiraka</b> Ay.A.S V33,3344p	<i>Katu</i>	<i>Laghu</i> <i>Ruksha</i>	<i>Ushna</i>	<i>Katu</i>		<i>Kapha, Vata Shamaka</i> <i>Pitta Vardhaka</i>
2	<b>Vishnukranthi</b> C.M.P Vol.III,140p	<i>Katu,</i> <i>Tikta</i>	<i>Laghu</i>	<i>Ushna</i>	<i>Katu</i>		<i>Kapha, Vata Shamaka</i>
3.	<b>Kalajiraka</b>	<i>Katu,</i> <i>Tikta</i>	<i>Laghu</i> <i>Ruksha</i> <i>Tikshna</i>	<i>Ushna</i>	<i>Katu</i>		<i>Kapha, Vata Shamaka</i> <i>Pitta Vardhaka</i>
4	<b>Marica</b> Ay. A.S V-3, 162p	<i>Katu,</i> <i>Tikta</i>	<i>Laghu,</i> <i>Ruksha</i> <i>Tikshna</i>	<i>Ushna</i>	<i>Katu</i>		<i>Vata Pitta Shamaka</i>
5	<b>Vaca</b>	<i>Katu,</i> <i>Tikta</i>	<i>Laghu</i> <i>Tikshna</i>	<i>Ushna</i>	<i>Katu</i>		<i>Kapha, Vata Shamaka</i>
6	<b>Sunti-</b> Ay. A.S V-3, 52p	<i>Katu</i>	Dry ginger <i>Laghu,</i> <i>Snigdha</i>	<i>Ushna</i>	<i>Madhura</i>		<i>Kapha, Vata Shamaka</i>
7	<b>Brahmi</b> Ay.A.S V3,313p	<i>Tikta</i>	<i>Laghu,</i> <i>Snigdha</i>	<i>Ushna</i>	<i>Katu</i>		<i>Kapha, Vata Shamaka</i>
8	<b>Ajamoda</b> Ay.A.S V-3, 33p	<i>Katu,</i> <i>Tikta</i>	<i>Laghu,</i> <i>Ruksha</i> <i>Tikshna</i>	<i>Ushna</i>	<i>Katu</i>		<i>Kapha, Vata Shamaka</i> <i>Pitta Vardhaka</i>
9	<b>Patha</b> Ay.A.S V-3, 217p	<i>Tikta</i>	<i>Laghu,</i>	<i>Ushna</i>	<i>Katu</i>		<i>Kapha, Vata Shamaka</i>
10	<b>Pippali</b> Ay.A.S,V-3, 187p	<i>Katu,</i> <i>Madhura,</i>	<i>Laghu,</i> <i>Snigdha</i> <i>Tikshna</i>	<i>Anushna</i>	<i>Madhura</i>		<i>Kapha, Vata Shamaka</i> <i>Pitta Vardhaka</i>
11	<b>Ashvagandha</b> C.M.P Vol-I, 212p	<i>Tikta,</i> <i>Kashaya,</i> <i>Madhura</i>	<i>Laghu,</i> <i>Snigdha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Rasayana,</i> <i>Vajikarana</i>	<i>Kapha, Vata Shamaka</i>
12	<b>Kusta</b>	<i>Tikta,</i> <i>Kashaya</i>	<i>Laghu,</i> <i>Snigdha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Rasayana,</i> <i>Vajikarana</i>	<i>Kapha, Vata Shamaka</i>
13	<b>Saindawa Lavana</b> Ay.A.S V-2, 215p	<i>Madhura</i>	<i>Snigdha,</i> <i>Lagu</i> <i>Sukshma</i>	<i>Shita</i>	<i>Madhura</i>		<i>Tridosha Shamaka</i>

## Conclusion

It is revealed that high frequency of *Kapha Vata shamaka* pharmacodynamic properties of Ingredients of *Sarasvata Choorna* in Ayurvedic aspect. Among medicinal and nutraceutical properties of Ingredients of *Sarasvata choorna* have memory enhancement, antidepressant, acetyl cholinesterase inhibitory and properties of amyloid levels reduces. Those may be used in the management of dementia and Alzheimer disease.

## Abbreviations

Ay. A.S.V-3 – Ayurveda Aushadha Samgrahaya volume-3 of Sri Lanka (Ayurveda pharmacopeia)

B.P – Bhava Prakasha

C.M.P – Compendium of Medicinal Plants – A Sri Lankan Study.

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