

## **MEDHYA RASAYANAS IN BRAIN FUNCTION AND DISEASE**

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### **ABSTRACT**

Ayurveda is the ancient science of medicine in the world; its legacy goes back to the vedic era. Ayurveda has a unique holistic approach towards life, health, and cure. It has two main aims—one is to maintain good health and the second is to cure diseases. The rasayana or rejuvenation is one of the eight specialized branches of Ayurveda that primarily deals with the maintenance of health. The focal basis of Rasayana is accelerated and appropriate nutrition to improve the biological competence of body. A good intellectual power acts as a catalyst in all aspects of life. All Rasayanas are nutrition promoters in general but there is certain target specific Rasayanas viz. Medhya Rasayana for the brain, Hridya Rasayana for the heart, Caksusya Rasayana for eyes and so on. Medhya Rasayana is claimed to promote cognitive functions of the brain and helps in regeneration of neural tissues besides producing antistress, adaptogenic and memory enhancing effect, and retarding brain aging. Medhya Rasayana drugs are used for prevention and treatment of mental disorders of all the age groups. These drugs promotes the intellect(Dhi), Retention power(Dhriti), Memory(Smriti). Mood disorders are known to be associated with considerable burden of disease, suicides, physical co morbidities, high economic costs, and poor quality of life. Therefore, it has become a major public health problem today. This review discusses about Medhya Rasayanas a great player for prevention and management of age related cognitive decline.

**Keywords:** Ayurveda, Medhya rasayana, Rasayana Drugs, Mental disorders

### **INTRODUCTION**

The desire for long life in civilization has been since Vedic time , Ayurveda represents an ancient system of traditional medicine. Ayurveda has eight specialized branches. Among the eight specialties of Ayurveda ,

Rasayana is a branch exclusively devoted to nutrition , immunology , rejuvenation and geriatrics. Rasayana chikitsa boost the Ojas and Immune system. It helps a person to maintain good health. In this a part from

rasayana is also responsible for Smriti especially the class of rasayana known as Medhya Rasayana. It has memory and intellect enhancing property<sup>1</sup>.

Concept of Rasayana in Ayurveda Classics :- It is that which enhances the vigour of a healthy person , that is Vrisya (aphrodisiac),that is Rasayana(rejuvenator). Among these two, rasayana particularly allays various illness. Long life span , improved memory , comprehension ability, health ,youthful vigour, lustre ,complexion , improved voice, generosity(in one's mind), energetic body and organs, Vaksiddhi(an ability found in pious people by which their spoken words come out to be true),humility and attractive nature (i.e enchanting beauty/handsomeness)are attained by Rasayana<sup>2</sup>.

Ayurveda has described various kinds of mental Disorders :-

1. Unmada (Insanity)
2. Apasmara (Epilepsy)
3. Atattvaabhinivesha(Obsessive Disorders)
4. Bhaya (Fear)
5. Harsha (Excitation)
6. Shoka (Grief)
7. Udvega (Anxiety)
8. Avasada (Depression)

Considering the effects of drugs on body and how to maintain proper health, acharya Charaka has classified all the drugs into three groups,

1. Dosh Prashamana- which pacifies the vitiated doshas
2. Dhatu Pradushana- which vitiates Dhatus
3. Svasthavrittakara- which maintains the proper health

According to Ayurvedic approach, Rasayana agents are considered to promote nutrition through the following modes ,

1. Direct enrichment of the nutritional quality of Rasa (nutritional plasma)- Satavari, milk and Ghee.
2. Promoting nutrition through improving Agni (digestion and metabolism) as Bhallataka, Pippali.
3. Promoting the competence of Srotas (microcirculatory channels in the body) as Guggulu etc<sup>3</sup>.

Rasayana Chikitsa:-According to Acharya Charaka, equilibrium of Agni of Dhatu, Vayu, and Srotas are essential factors for maintaining normal strength, color and longevity of the body. In Ayurveda, Medhya is described in broad way. Medhya comprises of all the three mental faculties- Dhee, Dhriti and Smriti and

these are interrelated with each other<sup>4</sup>.

What is Medhya Rasayanas? :- Medhya comprises of all the three mental faculties Dhee , Dhriti and Smriti and these are interrelated with each other.

Medhya can also be subdivided into

1. Grahanshakti(Power of Grasping)
2. Dharana Shakti (Power of Retention)
3. Vivekshakti(Power of Discrimination)
- 4 .Smriti(Power of Recollection)

The aim of Rasayana Chikitsa is to nourish blood, lymph, flesh, adipose tissue and semen. This prevents the individual from chronic degenerative diseases. The therapy influences the fundamental aspect of body viz., Dhatus, Agni, Srotansi and Ojus<sup>5</sup>. In Rasayana therapy, the Bhesha (medicine) is divided into two types:

- a. Swasthasaurjaskara-toning up the health of a healthy person
- b.Kinchit Artasya Rognut-treating the ailments of the patients

Types of Rasayana (Rejuvenation) therapy<sup>6</sup>

**According to achievable outcome- Rasayana is of three types:**

1. Naimittika rasayana (nimitt-Sanskrit for "cause") is also known as Rogapaharan or Curative type of

Rasayan. It is used to combat or balance a specific cause responsible for the disease in the body. Few examples include Dhatri rasayana, Mandookaparni rasayana, Brahmi rasayana, and Triphala rasayana.

2. Ajasrika rasayana is used to maintain good health and improve the quality of life through a healthy lifestyle, diet, or exercise. It is also called as Vayasthapan Rasayan.

3. Kama rasayana- This is described as to fulfill a wish or desire or to serve a special purpose (kama - desire). It is of four types:

- a.Prana Kama- best quality of prana (life energy) in the body.
- b.Medhya Kama- enhancing the memory and intellect. e.g., Shankhpushpi Rasayan.
- c.Ayush Kama- increasing longevity.
- d.ChakshuKama- maintaining healthy eyes.

**According to mode of Administration- It is of two types:**

1. Kutipraveshika (kuti-cottage, pravesha-enter)- It is an indoor management in which the person lives in a specially prepared cottage for a long period while taking various rasayana herbs.

2. Vatatapika- Where "vata" means air, and "atapa" means heat or sun (good for people who are engaged in everyday life activities). It is an outdoor management and involves taking rasayana, while a person remains exposed to air and heat. It includes Chyavanaprasha, Brahma rasayana Shilajitu rasayana, Amalaki rasayana, Haritaki rasayana, Pippali rasayana, Lohadi rasayana and Loha shilajitu rasayana. A total of 63 combinations of various rejuvenation formulae are described in the Charaka samhita.

**According to modalities— It is of three types:**

1. Achar Rasayan (Behavioural modalities)- describes a type of rasayana for psychological and spiritual health. It focuses on the body, mind, and soul, Ayurveda also.

2. Ahar Rasayan (Dietary modalities)- includes rules relating to eating, sleeping, and celibacy create rejuvenation in a person, following a sattvik diet and life style, speaking the truth, practicing non-violence, living in harmony with the nature, following social ethics and conducts, are all included under this category of rasayana.

3. Dravya (Aushadha) Rasayan- includes some herb and food types that are indeed beneficial for the optimum functioning of the body as well as the brain.

**Rasayana Drugs<sup>7</sup>**

As per Acharya Charak, Rasayanais defined as the means of achieving the finest quality of Rasadi dhatus (body tissues) where it increases life span, improves medhya (intelligence), cures disease, stabilizes youthfulness, improves luster, complexion, voice and makes body and senses strong and healthy etc. Rasayana drugs acts as

a. Immunomodulator- By augmenting or reducing the ability of the immune system.

b. Adaptogen- Increases the ability of an organism to adapt to environmental factors e.g.,

Ashwagandha, Tulsi, haridra, Pippali, Amalaki, Guduchi, shatavari.

c. Antioxidant- Circumvent the damage caused by oxygen free radical.

d. Nootropic- Promote intelligence and functions of brain e.g., Medhya Rasayana drugs (namely- Mandookparni, Guduchi, Yashtimadhu and Shankhpushpi).

The medicinal plants in the Ayurvedic system are classed as brain tonics or

rejuvenators. Earlier reports indicate that these plants are used both in herbal and conventional medicine and offer benefits that pharmaceutical drugs lack. Neurological and psychiatric disorders are generally associated with loss of memory, cognitive deficits, impaired mental function etc. The "medhya rasayanas" are known to be beneficial to improve the intellectual e.g., mandukaparni swaras , yashtimadhu churna with ksheer, guduchi swaras and shankhapushpi kalka.

Some Medhya Rasayana Drug and it's Action

1.Mandukaparni



2.Yastimadhu



3.Guduchi



4.Shankhapushpi



5.Bramhi



6.Ashwagandha



7.Jyothishmati



8.Vidanga



1.Mandukaparni(Centella asiatica Linn.)

Act on behaviour besides being neuroprotectives brain growth promoter inhibits the memory impairment induced by scopolamine through the inhibition of AChE. Useful in treating mental retardation, Immediate memory span and reaction time, Asiatic acid(AA), Influence the neuronal morphology and promote the higher brain function of juvenile and young adult mice, Cognitive enhancement, Prevent oxidative stress, Enhance neuronal dendrites, Antidepressant activity.

2.Yastimadhu(Glycyrrhiza glabra Linn.)

It increases the circulation into the CNS system , improves learning and memory on scopolamine induced dementia. Spatial learning and passive avoidance, preliminary free radical

scavenging , cerebral ischemia and antioxidant capacity towards LDL oxidation.

3.Guduchi(*Tinospora cordifolia*)

Possess learning and memory enhancing , antioxidant , and anti-stress action, enhances the cognition in normal and cognition deficits animals in behavioural test. It is useful for treatment of bhrama(vertigo),in improving behavior disorders, mental deficit and IQ levels. Strong free radical scavenging properties against reactive oxygen and nitrogen species diminishing the expression of INOS gene, Reduction in thiobarbituric acid reactive substances and an increase in reduced glutathione catalase and superoxide dismutase(anti-oxidant)

4.Shankhapushpi(*Convolvulus leuroides*)

Effective in chittodvega (anxiety disorders), reverses the social isolation stress induced prolongation of onset and decrease in pentobarbitone induced sleep, increased total motor activity and stress-induced antinociception in experimental model. Anxiolytic, memory enhancing and mood elevating effect, retard brain aging, help in regeneration of brain cells and in Dendritic arborization

which is the neuronal basis for improved learning and memory.

5.Bramhi(*Bacopa monnieri* Linn)

Memory enhancement, Cognitive function, Effect on cholinergic system, Prevent aluminium neurotoxicity i.e., protect brain from oxidative damage resulting from aluminium toxicity. Positive implications for improved neurotransmission and repair of damaged neurons via enhanced regeneration of nerve synapses via changes in the hippocampus, cerebral cortex(areas critical to memory function) and hypothalamus regions of the brain.

6.Ashwagandha(*Withania somnifera*)

Mood stabilizer in clinical conditions of anxiety and depression., clearance and reverses the behavioral deficits and pathology seen in Alzheimer's disease models. GABA-like activity, owing to its Anxiolytic effect, increase in the level of three natural antioxidants superoxide dismutase, catalase and glutathione per oxidase.

7.Jyothishmati(*Celastrus paniculatus*)

Affects learning and recall of memory, Significant decrease in the AChE activity assayed from hypothalamus, Frontal cortex and hippocampus of rat brain treated with 400 mg/kg body wt.

with CP oil i.e., jyothishmati oil from seeds of celastrus paniculatus

8.Vidanga(Embelia ribes)

Defence against MCAO-induced focal cerebral ischemia in rats and exhibits

neuroprotective activity, Useful adjunct in the treatment of stroke.

Other drugs having Medhya Rasayana properties:-

Table No:- 1

Medhya Drugs	Rasa	Guna	Virya	Vipaka
1.Aindri	Tikta ikta	Laghu	Ushna hna	Katu
2.Kushmanda	Madhura	Laghu Snigdha	Sita	Madhura
3.Vacha	Katu Tikta	Laghu Tikshna	Ushna	Katu
4.Jatamamsi	Tikta Kashaya Madhura	Laghu Snigdha	Sita	Katu

Medhya Rasayanas In Neuroprotection:- Medhya rasayana drugs play an essential role in the treatment of psychiatric and psychosomatic diseases. The mode of this therapy involves the individual to attain sedation ,calmness, tranquility or a stimulation of activities of brain. Based on the experimental and clinical research, it is known that these drugs have varying degree of psychotropic action and are known to possess antidepressant , sedative and tranquilizing action. Medhya Rasayana drugs are used for prevention and treatment of mental disorders of all

the age group. These drugs promote the intellect(Dhi),Retention power(Dhriti),Memory(Smriti).In fact they produce Nueuronutrient effect by improving cerebral metabolism. Medhya Rasayana drugs are known to have specific effect on mental performance by promoting the functions of "Buddhi" and "Manas" by correcting the disturbances of "Rajas" and "Tamas". This helps the mental patient to get relieve from stress, anxiety and depression. Earlier reports indicates that "Rasayana drugs" could be used in stem cell therapy. This may be beneficial to overcome challenging

diseases to modern medicine i.e., regeneration of tissues after the disease condition like osteoarthritis, age related macular degeneration(AMD), Alzheimer's and Parkinsons disease, Injuries, Trauma, Heart attack, Stroke etc8.

Rasayana concept of Ayurveda has been correlated with tissue regeneration and cell renewal and specific rasayana is known to stimulate and nourish respective dhatus or tissues.

For example – Medhya Rasayana for the brain

Hridya Rasayana for the heart

Twachy Rasayana for the skin

Chakshusya Rasayana for the eyes

Ayurveda have been described to provide a list of herbs known for nootropic activity having multidimensional utility in various condition.

### CONCLUSION

It is very unfortunate that in spite of advancements in modern medicine today its success is very limited in context with neurological and psychiatric disorders due to multi-factorial nature of these diseases. Therefore ,the concept of modern medicine based therapy for treatment

of such patients may be more effective when based on psychoactive drugs. Hence, the need to explore medicinal plants globally for improving cognitive function owing to their less adverse effects is must today so as to overcome the cognitive deficit diseases

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