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Review Article

ROLE OF *MEDHYA RASAYANA* (NOOTROPIC HERBS) IN PRESENT SCENARIO: AN AYURVEDIC OVERVIEW

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ABSTRACT

Rasayanatantra is a branch of Ayurveda which describes the measures of attaining long life, maintenance of youthfulness, increasing immunity and providing excellent nutrition to all the body tissues. *Rasayana* on regular practice boosts nourishment, health, memory, immunity and longevity. *Rasayana* can be classified as *Dravyabhuta* and *Adravyabhuta Rasayana*. *Adravyabhuta Rasayana* includes *Aachara Rasayana* and *Dravyabhuta Rasayana* are classified as *Kamya Rasayana*, *Naimittika Rasayana* and *Ajasrika Rasayana*. *Medhya Rasayana* (nootropic herbs) is a subtype of *Kamya Rasayana* and they are used with an intention or desire to improve intellect, concentration and memory. Need of attaining mental peace is increasing day by day in view of tremendous increase in the stress and strain. *Medhya Rasayana* described in the classics can be used as single *Dravyas* or in combination. Some examples from our classics are *Mandukaparni*, *Gudduchi*, *Yashtimadhu*, *Shankhpushpi*, *Brahmi*, *Vacha*, *Jatamansi* and *Ashwagandha*. **Aims and Objectives:** To highlight the importance of using *Rasayana* in today's perspective which is bounded by stressed life and immense competition. **Materials and Methods:** All the relevant Ayurvedic classics with desired content matter was available which was thoroughly searched and the outcome was analyzed. **Conclusion:** The use of *Medhyarasayana* in everyday sphere is a boon to the mankind considering the amount of stress, one is surrounded by which is difficult to deal with now a days.

INTRODUCTION

Desire of long and healthy life has been cherished by the man since ages. Ayurveda aims at maintenance of health in healthy individuals and prevention and cure of the diseased one. Ayurveda enfolds knowledge about the beneficial and harmful factors for four types of (*ayu*) life i.e. *Hitayu*, *Ahitayu*, *Sukhayu* and *Dukhayu*.^[1] *Hitayu* and *Sukhayu* should be encouraged with the beneficial factors and the *Ahitayu* and *Dukhayu* should be amended or discouraged. The definition of health given by *Acharya Sushruta* covers all the perspectives of health viz. physical, mental, social and spiritual. ^[2] As per WHO "Health is a state of complete physical, social and mental well-being,

and not merely the absence of disease or infirmity."^[3]

In today's hastily lifestyle, everyone wants to be at the peak but it is not an easy task. For achieving this aim, one should be unconditionally in a good state of physical health, with calm and peaceful mind, in a virtuous social structure and with a spiritual awareness and cognizance. Though, medical and public health advances have led to better treatment of many existing diseases but the health outcome in terms of quality of life needs to be pondered upon. The people who appear healthy, in fact encounter many customary troubles like anxiety, stress, fatigue etc. They may not appear ill in young age but these factors act as main causative or precipitating

factors for severe diseases in late age. Hence, maintenance of health and health related quality of life is a necessity in present era to run in the race of competition, thus hold a good position, and enjoy being there. To meet this necessity some common, affordable and feasible measures must be adopted in the form of medicine and behavioral regimen.

Stress- The Most Common Problem of Society

Stress affects people of all ages and in all walks of life. Children at play, students preparing for examination, workers on the job and elderly at the home all are subjected to stress. Stress is our body's way of responding to any kind of demand. It can be caused by both good and bad experiences. When people feel stressed by something going on around them, their bodies react by releasing chemicals into the blood. These chemicals give people more energy and strength, which can be a good thing if their stress is caused by physical danger. But this can also be a bad thing, if their stress is in response to something emotional and there is no outlet for this extra energy and strength. People experiencing severe stress are often overwhelmed by tension, anger, fear and frustration. Those who have difficulty in dealing with stress over time suffer from a number of stress related disorders.

It is most common among adolescents. Majority of the adolescent undergo stress, whatever the sources may be internal or external, and it hampers the major functioning of the body.

Stress is categorized by feelings of tension, frustration, worry, sadness and withdrawal, which commonly last for few days. Depression is both severe and longer lasting. Depression is characterized by more extreme feelings of hopelessness, sadness, isolation, worry, withdrawal and worthlessness that last two weeks or more. Improved methods of assessment and research design have established a robust and causal association between stressful life events and major depressive episodes.^[4] Stress levels if not controlled can lead to lifestyle disorders like diabetes, high cholesterol and cardiac arrest. Irregular working hours often lead to dietary disturbances.^[5] Ayurvedic classics also mention stress and anxiety as a precursor of many diseases like *Jvara*, *Prameha*, *Pandu* and *Rajyakshma*^[6] etc.

The Concept of Rasayana Therapy

Rasayana Tantra which has been mentioned among eight branches of *Ayurveda* describes the measures which enhances longevity and memory, alleviates disease and slows the ageing process resulting in total gain of physical and mental health. It is the measure of providing excellent nutrition to all the

body tissues.^[7] In nutshell, it aims to produce a state of *Dhatusamyā* through different modes of action. It has been placed under *Swasthysaurjaskara*^[8] type of class of medicines which means that it strengthens and promotes the *Swasthbhava* or the *Dhatusamyā*.

Classification of Rasayana

Rasayana can be classified as *Dravyabhuta* and *Adravyabhuta Rasayana*. *Adravyabhuta Rasayana* includes *Aachara Rasayana* and *Dravyabhuta Rasayana* can be classified as *Kamyā Rasayana*, *Naimittika Rasayana* and *Ajasrika Rasayana*. The different types of classification of *Rasayana* can be understood as follows.

Dravyabhuta Rasayana

(A) As per method of use^[9]

- *Kuti Praveshika* (indoor use)
- *Vatatapika* (outdoor use)

(B) As per Scope of use

- *Kamyā Rasayana*- (Promoter of normal health) –These are used with an intention or desire to gain or promote longevity, memory or physical beauty.
- 1. *Prana Kamyā* (Promotes longevity- e.g: *Amalaka*, *Brahmrasayana*, *Chyavanprash* etc).
- 2. *Medha Kamyā* (Improves mental faculties –e.g. *Mandukparni*, *Guduchi*, *Shankhapushpi*, *Brahmi* etc.)
- 3. *Shri Kamyā* (Improves lusture or physical beauty of body-e.g. *Bringraja*, *Aswagandha* etc.)
- *Naimittika Rasayana*–These are used in diseases. Some *Rasayana* are disease specific- e.g. *Shilajatu* in *Prameha*, *Tuvaraka* in skin diseases etc.
- *Ajasrika Rasayana*- These are used in routine in the form of diet. -e.g. milk and *Ghrita*.

(C) According to *Prabhava* (Effect)

- *Samshodhana Rasayana* e.g. *Haritaki* and *Amalaki*
- *Samshamana Rasayana* e.g. *Guduchi* and *Madhuyashti*

Adravyabhuta Rasayana

Achara Rasayana-Conduct of Rasayana

Achararasayana includes worship of god, respecting elders, holding on truth, avoiding anger, avoiding indulgence in alcohol and sex, keeping peaceful, being kind to living beings, balanced sleep, regular use of nourishing diet and studying religious literature.

Budhimedhakargana includes *Satatadhyayan* (the habit of reading or gaining knowledge), *vada* (discussion with others), *Partantraavalokan* (reading other texts), *Acharyaseva* (paying regards to mentors), *Ayushyabhojan* (nutritious diet),

Veganamavidharan (not holding urges), *Brahmcharya* (controlling desires) and *Ahinsa* (non-violation).

DISCUSSION

Medhya Rasayana is a subtype of *Kamya Rasayana* and they are used with an intention or desire to improve intellect, concentration and memory. *Medhya Rasayana* described in the classics can be used as single *Dravyas* or in combination. Some examples from our classics are *Mandukaparni*, *Gudduchi*, *Yashtimadhu*, *Shankhpushpi*, *Brahmi*, *Vacha*, *Jatamansi* and *Ashwagandha*.

Medha is to have proper correlation and understanding about the knowledge of the existing objects. Due to *Medha* a person will be able to obtain the knowledge of existing object and hence person becomes learned. Majority of *Medhya Rasayana* drugs possess varied properties. They can be useful in the stress and anxiety state or simply to improve intellect and memory.

Rasayana drugs are used for preservation of positive health. *Rasayana* stands as an answer to solve the problem of healthful longevity including mental development and resistance against disease. *Rasayana* is a specialized type of treatment influencing the fundamental aspect of body i.e. *Dhatu*, *Agni* and *Srotasa*. It is possible that different *Rasayana* drugs may act with predominance effect at different levels. These comprehensive effects are brought about with the help of the varied pharmacodynamics properties of these drugs. *Rasayana* effect is not a specific pharmacological action but is a complex phenomenon operating through a comprehensive mechanism involving the fundamental factors like *Rasa-samvahan*, *Dhatu*, *Agni* and *Srotsa*. It may ultimately be leading to the achievement of the total health.

Acharya Nagarjuna has mentioned that *Medhya* drugs mainly act by their *Achintya Veerya* i.e. *Prabhava*. The effect of *Medhya Rasayana* is also at different levels such as at level of *Rasa*, *Agni*, and *Srotsa*. At the level of *Agni* these drug act by stimulating and improving the function of *Agni*. At level of *Srotsa*, these drugs improve the circulation of *Rasa* by opening and cleaning the micro channel and then ultimately improve the function of *Medha*. These drugs have beneficial effect on body as well as on mind. Various *Medhya Rasayana* drugs used are *Mandukparni Svarasa*, *Shankhpushpi Kalka*, *Guduchi Svarasa* and *Mulethi Churna*. These *Medhya Rasayana* are described in *Charaka Samhita*. Some of the *Rasayana* drugs act by *Panchbhautika* composition, some by *rasa*, *Gunaveerya*, and *Vipaka*. The probable mode of action of these herbs can be

defined as the Pharmacological properties of drugs are the resultant of different combination of *Mahabhoota*. *Medha* is attributed to predominance of *Satva Guna*, Hence *Akashiya*, *Taijus*, *Aapya* drugs having *Satvaguna* predominance improve *Medha*. On the basis of *Rasa tikta rasa* has direct action on the promotion of *Medha*. It performs this function by its *Laghu* property and *Deepana-Paachana* and *Srotoshodhaka* action. *Madhura rasa* also by promoting the formation of *Ojus* nourishes five sense, mind and *Medha*. Hence *Medhya Rasayana* drugs appear to be predominantly *Tikta-madhura rasa*. *Amla*, *Lavana* and *Katu rasa* are having least importance in *Medhya* action. Similarly *Ushana veerya* drugs stimulate *Saadhak pitta* which promotes *Medha*.^[10] *Ushanaveerya* drugs improve *Grahanashakti* (power of reception) and *Smriti* (power of recalling). Majority of drugs are having *Madhuravipaka* which nourishes *Medha* by formation of *Ojus*. So all the *Medhyarasayana* drugs improve mental faculties, improve mental function and intellect.

Some *Medhyarasayana* mentioned in *Charaka Samhita*:

- *Mandukparni* (*Centella asiatica* Linn.) is a prostrate, stoloniferous perennial herb rooting at node Major constituents are saponin (medacoside, asiaticoside, medacassoside, asiatic acid, a new triterpenic acid.^[11] They act on behavior besides being neuroprotectives and brain growth promoter.^[12] *Centella asiatica* inhibits the memory impairment induced by scopolamine through the inhibition of AChE.^[13] BR-16A (Mentat), a formulation containing *Centella asiatica* proved for its antistress effects.^[14] Study on Menotab an effective herbomineral preparation containing *Centella asiatica* with other drugs from the Himalaya drug company, Bangalore is an ideal medication for relief of postmenopausal symptoms as a short-term therapy.^[15]
- *Yashtimadhuchurna*: Fine powder of dried root is used internally with milk for therapeutic purpose as *Medhya*.^[16] The roots and rhizomes of *G. glabra* has been studied with respect to spatial learning and passive avoidance^[17] preliminary free radical scavenging cerebral ischemia and antioxidant capacity towards LDL oxidation. The roots and rhizomes of *Glycyrrhiza glabra* is an efficient brain tonic; it increases the circulation into the CNS system and balance the sugar levels in the blood.^[18] Liquorice has significant action on memory enhancing activity in dementia^[19] it significantly improved learning and memory on scopolamine induced dementia.

- *Gudduchi swarasa* (*Tinospora cordifolia* (Wild) Miers) is a large glabrous, deciduous, climbing shrub of Menispermaceae family found throughout tropical India. Juice of whole plant is used therapeutically as *Medhya*.^[20] It is also used in the form of decoction, powder and *Satwa* (starch extract of stem). Its root is known for its anti stress, anti-leprotic and anti-malarial activities.^[21,22] Neuroprotective and ameliorative properties are due to their antioxidant and trace element contents.^[23] It increases the blood profile and has lead scavenging activity. *Tinospora cordifolia* has been claimed to possess learning and memory enhancing, antioxidant, and anti-stress activity.^[24]
- *Shankhpushpikalka* (*Convolvulus pleuricaulis* Chois) is a perennial, prostrate or sub erect spreading hairy herb, found throughout India. Recommended therapeutic form is fine paste of whole plant. Highly regarded as *Medhya* (intellect promoter). Important chemical principles are microphylllic acid, Shankhpushpin, kaempferol-kaempferol-3-glucoside, 3, 4 dihydroxycinnamic acid, sitosterols. Neuroprotective and intellect promoting activity implicated to free radical scavenging and antioxidant property.^[25] BR-16A (Mentat), a poly herbal combination containing *Shankhpushpi* significantly reversed 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. Ayushman-8 (containing *Shankhpushpi*, *Brahmi* and *Vacha*) reported to be effective on *Manasa-mandata* (mental retardation).^[26]

Shankhpushpi compound containing *Shankhpushpi*, *Sarpagandha*, and *Gokshura* in equal quantities studied to be effective in *Chittodvega* (anxiety disorders). Sanjay Parsania reported *Shankhpushpi* to be effective in relieving signs and symptoms of *Chittodvega* (anxiety disorders).^[27] Herbalists believe that *Shankhpushpi* calms the nerves by regulating the body's production of the stress hormones, adrenaline and cortisol. Few investigations reports that *Shankhpushpi* has potent depressive action in mice.^[28] *Convolvulus pleuricaulis* whole plant extract, shows the highest inhibitory activity against *Helicobacter muridarum*.^[29]

Some *Medhyarasayana* mentioned in *Sushruta Samhita*

- *Vaccha*
- *Ghee*

- *Swarna Bhasm*
- *Bilva Churna*

CONCLUSION

Rasayanatantra is a branch of *Ayurveda* which describes the measures of attaining long life, maintenance of youthfulness, increasing immunity and providing excellent nutrition to all the body tissues. *Rasayana* on regular practice boosts nourishment, health, memory, immunity and longevity. To fulfill our materialistic needs and desires we are encountering stress because of excessive hurry and worry. Need of attaining mental peace is increasing day by day in view of tremendous increase in the stress and strain. *Ayurveda*, the science of life is a treasure of various means and methods which are helpful in combating stress and provide mental strength. The practice of *Rasayanais* useful in present situation in which every second person is bounded by stressed life and immense competition. The perspective of *Rasayana* is very wide. Speaking the truth, following the preaching of elders and mentors, not getting too much involved in worldly pleasures and practicing *Rasayana* therapy in the form of drugs is very much profitable to encounter stress and strain and prevent major physical and psychological disorders. The vast data of the above researches regarding drugs or herbs in *Ayurveda* is vibrant example how it can become an indistinct part of so many people who are suffering from anxiety, depression and stress.

REFERENCES

1. Agnivesha, Charaka Samhita, Ayurveda-Dipika commentary by Chakrapanidutta, revised ed., Sutra Sthana (1:41), pg. 228, Chaukhambha Surbharati Prakashan, Varanasi, (2005)
2. Sushruta: Sushrut Samhita, with commentary of dalhana, Edited by Vaidya Jadavaji Trikamaji Acharya, chaukhambha orientalia, Varanasi.8th edition. Sutra Sthana (15:41), pg. 212 (2005)
3. Callahan, D. (1973). The WHO definition of health'. Hastings Center Studies, 77-87.
4. Lechin, F., Van Der Dijs, B., & Benaim, M. (1996). Stress versus depression. Progress in Neuro-Psychopharmacology and Biological Psychiatry, 20(6), 899-950.
5. Baynes, J. W. (1991). Role of oxidative stress in development of complications in diabetes. Diabetes, 40(4), 405-412.
6. Agnivesha, Charaka Samhita, Ayurveda-Dipika commentary by Chakrapanidutta, revised ed., Vimana Sthana (2:8), pg. 238, Chaukhambha Surbharati Prakashan, Varanasi, (2005)
7. Sushruta: Sushrut Samhita, with commentary of dalhana, Edited by Vaidya Jadavaji Trikamaji

- Acharya, chaukhambha orientalia, Varanasi.8th edition. Sutra Sthana (1:7-3), pg. 3 (2005)
8. Agnivesha, Charaka Samhita, Ayurveda-Dipika commentary by Chakrapanidutta, revised ed., Chikitsa Sthana (1:1/5), pg. 376, Chaukhambha Surbharati Prakashan, Varanasi, (2005)
 9. Agnivesha, Charaka Samhita, Ayurveda-Dipika commentary by Chakrapanidutta, revised ed., Chikitsa Sthana (1:1/16), pg. 377, Chaukhambha Surbharati Prakashan, Varanasi, (2005)
 10. Agnivesha, Charaka Samhita, Ayurveda-Dipika commentary by Chakrapanidutta, revised ed., Sutra Sthana (26/11), pg. 138, Chaukhambha Surbharati Prakashan, Varanasi, (2005)
 11. Sharma PC, Yelne MB, Dennis TJ. Database on Medicinal plants used in Ayurveda and Sidha. Vol. 1. New Delhi: CCRAS, Dept. of AYUSH, Ministry of Health and Family Welfare, Govt. of India; 2005. pp. 265-6.
 12. Anbuganapathi GA. Synergetic effect of Vallarai and Brahmi on learning ability of albino mice and school children. Ootacamund: Paper presented at the International Seminar on Recent Trends in Pharmaceutical Sciences; 1995. pp. 18-20.
 13. Bacopamonniera, a reputed nootropic plant: an overview. Russo A, Borrelli F Phytomedicine. 2005 Apr; 12(4):305-17.
 14. Protective effect of BR-16A, a polyherbal preparation against social isolation stress: possible GABAergic mechanism. Kumar A, Kulkarni SK Phytother Res. 2006 Jul; 20(7):538-41.
 15. Devi UK, Swarup A. Evaluation of Clinical Efficacy of Menotab in Alleviating Symptoms of Menopausal Syndrome: Phase III Open Clinical Trial. Antiseptic. 2001;98:87-9.
 16. Acharya YT, editor. Caraka Samhita with Chakrapani's Ayurveda Deepika Teeka. Varanasi: Choukhamba Samskrita Samsthana; 1994. Agnivesha; p. 385.
 17. Ravichandra V, Ahalyadevi, Adiga S. Evaluation of the effect of Glycyrrhiza glabra Linn. root extract on spatial learning and passive avoidance response in rats. Indian Drugs. 2007;44:214-9.
 18. Rathee P, Chaudhary H, Rathee S, Rathee D. Natural memory boosters. Phcog Rev. 2008; 2: 249-56.
 19. Memory enhancing activity of Glycyrrhiza glabra in mice. Dhingra D, Parle M, Kulkarni SK J Ethnopharmacol. 2004 Apr; 91(2-3):361-5.
 20. Acharya YT, editor. Caraka Samhita with Chakrapani's Ayurveda Deepika Teeka. Varanasi: Choukhamba Samskrita Samsthana; 1994. Agnivesha; p. 385.
 21. Nayampalli S, Ainapure SS, Nadkarni PM. Study of antiallergic acid Bronchodilator effects of Tinospora cordifolia. Indian J Pharm. 1982;14:64-6.
 22. Folkloric medicinal plants: Tinospora sagittata var. cravaniana and Mahoniabealei. Zhao TF, Wang XK, Rimando AM, Che CT Planta Med. 1991 Oct; 57(5):505.
 23. Rubia cordifolia, Fagoniacretica linn and Tinospora cordifolia exert neuroprotection by modulating the antioxidant system in rat hippocampal slices subjected to oxygen glucose deprivation. Rawal AK, Muddeshwar MG, Biswas SK BMC Complement Altern Med. 2004 Aug 13; 4():11.
 24. Patil M, Patki P, Kamath HV, Patwardhan B. Antistress activity of Tinospora cordifolia (Willd) Meirs. Indian drugs. 1997;34:211-5.
 25. Antiulcer and antioxidant activity of Asparagus racemosus Willd and Withania somnifera Dunal in rats. Bhatnagar M, Sisodia SS, Bhatnagar R Ann N Y Acad Sci. 2005 Nov; 1056():261-78.
 26. Rajagopalan V. Seminar on research in Ayurveda and Sidha. New Delhi: CCRAS; 1995.
 27. Kalra Sanjeev. A study on the effect of Shankhapushpi compound and Satwavajaya Chikitsa in Chittodvega (generalized anxiety disorders) Dept. of Post Graduate studies in Manasa Roga, SDM College of Ayurveda and Hospital. Hassan, Rajiv Gandhi University of Health Sciences, Karnataka. 2006
 28. Evaluation of comparative and combined depressive effect of Brahmi, Shankhpushpi and Jatamansi in mice. Indurwade NH, Biyani KR Indian J Med Sci. 2000 Aug; 54(8):339-41.
 29. Vimal SK, Sharma D, Bhatnagar M. Anti-bacterial activity of herbal extracts, EuMiL® and antibiotics against Helicobacter muridarum. Pharmacogn J. 2010;2:436-41.

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