

CRITICAL REVIEW ON MANAGEMENT OF DEMENTIA WITH GHRITA KALPANA

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ABSTRACT

Bhaishajya kalpana- Ayurveda Pharmaceutics has umpteen formulations for different diseases which are challenging. Dementia is a chronic mental disorder, characterized by progressive, usually irreversible global cognitive deficit. The signs and symptoms along with pathogenesis of dementia can be understood in terms of *smriti nasha*, *smriti bhramsha*. As the pathogenesis of dementia involves neurodegeneration; the role of *Rasayana* therapy and the medicinal formulations including rasayana drugs attain greater significance in its management. Among the different dosage forms, Ghrita kalpana has an upper hand in the treatment of dementia. Ghrita has vatapittahara, yogavahi and medhya properties which aids in the treatment of symptoms like *smrutinasha* etc. The significance of using Ghrita as a

media aids in incorporating of lipid soluble active principles which then are rapidly distributed throughout the intra and extra cellular spaces and readily diffuse in to CSF and other body cavities. Drugs given in the form of a Ghee are rapidly absorbed and distributed in the target areas of the body like the nervous system. The present paper is an attempt to analyze the effect of Ghrita and its rasayana activity in the management of dementia.

KEYWORDS: *Dementia, smriti bhramsha. Ghrita kalpana.*

INTRODUCTION

Ayurveda being a holistic medical science considers *Sharira* and *Manas* both as *Rogadhisthana* or seat of disease. The definition of *Swastha* emphasizes on spiritual, psychological and physical well-being of metaphysical faculty in which *Manas* is regulator

and an important factor.^[1] *Manas* is considered as the most important factor from “*Tridanda Purusa*” for which Ayurveda is propagated.^[2] *Smriti* affects happiness or misery of ‘*Ayu*’ and is essential for fulfillment of the motive of Ayurveda. It prevents an individual from indulging into *Prajnaparadha*. Longevity without *Smriti* is a kind of burden on society and for man too and hence promotion of *Smriti* is desired and is a necessity for all.

The drugs promoting *Medha* (intellect), *Smriti* (memory) are termed as “*Medhya*” drugs. Ayurvedic System of Medicine has mentioned several naturally occurring medicinal plants under the category “*Medhya*”. By virtue of inducing mental upliftment, several medicinal plants mentioned as ‘*Rasayana* Drugs’ in Ayurveda are primarily claimed as *Medhya*. Further there is a special class of some *Rasāyana* drugs called “*Medhya Rasayana*” which are supposed to be having specific influence on higher brain functions.^[3] Best medium through which these medicinal drugs can be administered is ghee base. *Ghrita* being *rasayana* and *yogavahi*; helps ghee to assimilate properties of the ingredients with which it is processed, along with its own qualities.

DEMENTIA

Dementia is a syndrome of acquired intellectual impairment in which impairment of memory is the essential feature with associated impairment of abstract thinking and judgment, personality changes and other cortical disturbances.^[4] If not properly managed, these demented patients may become helpless, incapable of remembering the names of close relatives; they may wander into hazardous situations, oblivious of their surroundings. Alzheimer’s dementia is a progressive relentless loss of mental function characterized by degeneration of brain tissue including loss of nerve cells and development of senile plaques and neurofibrillary tangles.^[5]

Dementia" originally meant “out of one's mind”, from the Latin *de* (out of) and *mens* (the mind). Alzheimer’s dementia has characteristic neuro pathological and neuro chemical features. It is usually insidious in onset and develops slowly but steadily over a period of years. The onset can be in middle adult life or even earlier, but the incidence is higher in later life. The statistical meta-analyses using logistic model shows that the odds of having Alzheimer’s dementia increases by 18% for every year of age. These are progressive disorders.

DEMENTIA IN AYURVEDA

Bhramsha

The term *Smriti Bhramsha*, denotes loss of memory which means an irreversible progress of a disease has taken place. Further, it means that a therapy aimed, can only retard the pathogenic process causing no improvement in the present status of the patient.

As per the reference from *Charaka Shareera*, *Rajas* and *Tamas* are the main *Dosha* involved in *Smriti Bhramsha*. *Prana*, *Udana* and *Vyana Vayu*, *Sadhaka Pitta* and *Tarpaka Kapha* also play a major role in the pathogenesis of *Smriti Bhramsha* due to their function pertaining to *Manas*.

Tatva jnane smritiryasya rajo mohavrutaatmanah

Bhrasyate sa smritirbhramsa: smarthavyam hi smrutho sthitam

If memory is impaired due to a person being overcome by *Rajas* and *Tamas*, this is known as the impairment of memory.^[6]

Nidana of Smriti Bhramsha

Kala, *Satvabala*, *Beejadusti*, *Vatakara Aharavihara* are the general *Nidana* of *Manas Roga*. They vitiate *Rajas* and *Tamas Dosha*. Vitiating of *Rasa Dhatu* and *Majjadhatu* and involvement of *Rasavaha* and *Majjavaha Srotodusti* can also be considered. *Manovaha Srotas* get vitiated due to *nidana*.

In *Chakrapani* commentary it is told that in *smritivibhramsha* the person don't have any *jnana* about cold, heat etc. In *samjajnana vibhrama*, the patient don't even remember his name also, the subject can't recollect the previous incidents.^[7] It is told in *roopa* of *apasmara* that due to the *nidana vatadi dosha prakopa* and *raja tamo prakopa* goes to *hridaya* and cause vitiating of *samjnavahi srotas* which leads to *smriti Bhramsha*.^[8]

Samprapti of Smriti Bhramsha

It can be said that *Smriti Bhramsha* is a disease of the mind developed due to provoked *Vata*, *Heena Satva*, *Rajas* predominant *Prakriti*. The person whose mind is weakened by all the stressful conditions is more prone to develop *Smriti Bhramsha*. The regular consumption of diet dominant in *Tamas* and *Rajas Gunas* increase the *Tama* and *Rajo Dosha* in the mind. The increased *Rajas* supports the *Tamas* to develop *Smriti Bhramsha*. Moreover, the *Rajas* diet decreases the *Dhriti*.^[9]

Management in Ayurveda

As *Smriti Bhramsha* occurs mainly due to old age and impairment of *Buddhi*, Management by *Rasayana* drugs would be the appropriate line of treatment. Furthermore, prior to *Rasayana* therapy, *Panchakarma* is very essential for *Deha Suddhi*. Also, as *Smriti Bhramsha* can be considered as an *Urdhwajatrugata Vikara*, *Nasya Karma* can be performed. Hence, the line of treatment comprises of *Nasya* and administration of *Rasayana* and *Medhya* drugs.

GHRITHA KALPANA IN THE MANAGEMENT OF DEMENTIA

Ghrita is one among the best *Ajasrika Rasayanas*. It is *Ayu Vardhaka*, *Balavardhaka*, *Ojovardhaka*, *Vayasthapaka*, *Dhatuposhaka* and is supreme among *Snehana Dravyas*. By virtue of *Yogavahitva*, as per its ingredients the medicated *Ghrita* will be incorporating the properties of the ingredients. It is *Tridosha Nashaka*, energetic, brain tonic, etc. It is also used in *Unmada*, *Shosha*, *Kustha*, etc.^[10]

Ghrita has one property *Samskarasyanuvartanum* i.e. there is no other such material which imbibes the quality to the extent that *Ghrita* does. It is *Rasayana*, *Bramhana* and *Yogavahi*. So it carries active principles of the drugs to increase the potency of the compound drug. Most Ayurvedic formulations are made with *Ghrita*. Digestion, absorption and delivery to a target organ system are crucial in obtaining the maximum benefits from any formulation. This is facilitated by *Ghrita*. In *Mastishkajanya vikaras Snehana* especially by *Ghrita* is very much important; due to the similarity of *Mastulunga Snehana Dravyas*.^[11]

GHRITA YOGAS

Table no: 1. *Ghrita Yoga*

Ghritha yogas	Main ingrediants	Rasa, guna, veerya & vipaka	Karma	Reference
Kalyanaka Ghrita	Thriphala, Indra varuni, Devadaru, Sariva, Haridra dvaya, Parni dvaya Priyangu, Naga Kesara, Manjishta	Rasa –Katu, Thikta Guna-Laghu, ruksha, Virya -Ushna	Dipana, anulomana, Balya, Brumhana , Vrushya, Skhaladvaci , Smriti	A.hru.- Uttara tantra -Unmada chikitsa
Mahakalyanaka Ghrita	Thriphala, Indra varuni, Devadaru, Sariva, Haridra dvaya, Parni dvaya Priyangu, Naga Kesara, Manjishta	Rasa – Thikta Guna-Laghu, Ruksha Virya – Ushna	Brumhana , Balyam, Vrushya, Medhya , Anulomana, Adhikaguna of kalyanaka Ghrita	A.Hru– Uttara tantra – Unmada chikitsa
Brahmi Ghrita	Brahmi, Sunti, Marica, Pippali, Trivrut, Sankha	Rasa – Thikta rasa pradhana	Dipana, Anulomana, Swarya, Medhya	A.Hru– Uttara tantra – Unmada

	pushpi, Vidanga Aragvadha	Guna – Tikshna Virya – Sheetoshna	Smriti kara	chikitsa
Maha paishachika Ghrita	Jatamamsi, Haritaki, Vaca, Brahmi, Satavari, Saliparni, Kakoli, Satapushpa	Rasa – Thikta Guna – Tikshna, Laghu, Sukshma Virya - Sheeta	Balya , Pushtikara, Medhya , Grahaghna, Budhi medha smriti karam	A,Hru – Uttara tantra – Unmada chikitsa
Saraswatha Ghrita	Abhaya, Sunti, Marica, Pippali, Pata, Vaca, Sigru	Rasa – Tikta, madhura Guna- Thikshna Virya- Sheeta	Smriti medha vivardhanam , jada gadgada mooka nasanam	Vangasena – vata vyadhi, rasayana
Panchagavya Ghruta	Go dadhi, Go mutra, Go ghrita, Go ksheera, Gomaya	Rasa – Thikta rasa Guna – Tikshna Virya - Ushna	Dipana, Anulomana, Sukshma, Medhya , Rasayana	A.Hru, - Apasmara chikitsa

MODE OF ACTION OF GHRITA

Ghee is mainly lipophilic in nature and this action of ghee facilitates transportation of ingredients of formulation to target organ and final delivery inside the cell, because cell membrane also contains lipids.

Ghrita contains poly unsaturated fatty acids (PUFA) ie, DHA- Omega 3 long chained PUFA in fair amounts. Intake of PUFA in moderate levels is found to improve levels of acetyl choline thus reducing chances of dementia.^[12] Lipophilic nature of *Ghrita* facilitates entry of the formulation into the cell and its delivery to the mitochondrion, microsome and nuclear membrane. When herbs are processed with *Ghrita*, their activity and utility get potentiated to many folds. That is drugs given in the form of Ghee which is a fat are rapidly absorbed and distributed in the target areas of the body like the nervous system in this case. Distribution of drug in blood is influenced by its Lipid solubility, Ionization & differences in blood flow. A Water soluble drug is usually distributed in the extracellular spaces and it may not readily diffuse in to CSF and other body cavities. While the Lipid soluble drugs get rapidly distributed to intra and extracellular spaces. The drugs that are rapidly absorbed from the gut because of their lipid solubility are known to readily diffuse into the CSF and the brain. The main reason behind this is the molecular structure of the blood brain barrier. This membrane separating the CNS tissue and the circulating blood is lipophilic in nature. Thus it selectively allows the passage of lipids and lipid soluble drugs across it. Therefore any drug given in the form of ghee will not only be digested and absorbed fast, but also be able to reach some of the most difficult to reach areas of body like the CNS. This explains the better efficacy of various Psychotropic drugs given in the form of ghee in CNS diseases. Antioxidant properties of ghee prevent the oxidative damage of brain and other tissues of the nervous system, thus

providing protection from various degenerative diseases.^[13] Ghee is therefore one of the most effective drug dosage forms used in Ayurvedic medicine.

DISCUSSION

Ayurveda has many herbal and herbo mineral drugs for the enhancement of *smriti* in the management of *smriti bhramsa* in different dosage forms. Majority of these drugs are in the form of *ghrita kalpana*. *Ghrita* especially of *Go-ghrita* are best *sneha dravyas* among all the *sneha*, due to its power to assimilate the properties of substances which accompanies it. This assimilating property is not prominent in other *sneha dravyas*. It is particularly significant that *ghrita* does not give up its properties even though it is mixed up with other drugs having different properties. Ayurvedic treatment is based on *samanya* and *vishesha* theory i.e. homology and heterology in relation to *dosha*, *dhatu* and *mala*. According to this theory, *ghrita* preparations have nootropic action as the *masthishka* (brain) is made of *meda* (fatty substances).

Main ingredients in the *ghrita* formulations mentioned above are *medhya rasayana* and those having *medhya* and *rasayana* properties. *Medhya rasayanas* have specific effect on mental performances and on central nervous system (CNS) functions. As far as the pharmacodynamics is concerned, maximum drugs are having *sheeta veerya* and *madhura vipaka* where as some of them are *ushna veerya* and *tikta rasa*. *Medha* confines into *grahana* (power of acquisition), *dharana* (retention) and *smriti* (recollection) properties. *Pitta* is *theekshna*, *asukaari* and *ushna* in nature and enhances *satwa* and help to retain and recapitulate the things. Therefore *pitta vardhaka* and *ushna veerya* drugs are considered as *medhya* drugs. *Medha* is one of the natural function of *pitta*. *Saririka dosha*, *kapha* provides *dharana* by *sthiratva* (stability) property and thereby helps in retention of cognition. *Dhriti* (retention) is mentioned as normal physiological function of *kapha*. Hence *sheetha veerya* and *kapha vardhaka* drugs are quoted as *medhya* drugs. Thus it can be said that *ushna veeryayukta medhya* drugs are helpful mainly in *grahana* and *smarana* functions and *sheetha veeryayukta medhya* drugs are mainly useful in *dharana* functions. These drugs promote the function of *bhuddhi* and *manas* by correcting the disturbances of *Rajas* and *tamas* also.

Recent researches proved the validity of *ghrita kalpana* as nootropic drug of choice. In a study, Assessment of nootropic activity of panchagavya *ghrita* (PGG) in animal models by Dr A. Pandey, PGG and Piracetam drugs showed comparable memory enhancement activity in

Morris Water Maze (MWM) test and was depicted that PGG formulation might be acting through cholinergic neurotransmission which in turn explains its nootropic activity.^[14]

Nootropic and anti-amnestic study conducted by Dr. Kapil Yadav on experimental model showed that Brahmi Ghrita increases learning and memory. The Study proves that Brahmi Ghrita antagonize effect of scopolamine, which is an antiamnestic agent.^[15] Research study on pharmaceutico analytical study of duration of sneha paka WSR to Brahmi ghrita and its effect on memory in albino rats by Dr Saran Babu substantiate the nootropic action of brahmi ghrita with MWM test.^[16]

CONCLUSION

Smriti bhransa (dementia) is a known disorder since ancient era. In Ayurveda this condition is described by various *acharyas* in various contexts along with its possible etiopathogenesis. Though its progress is usually irreversible, global cognitive deficit, the quality life of patients can be improved by arresting the progress of disease and bringing positive changes in intellectual capacity. Among the preparations, ghrita kalpana have upper hand by the virtue of its yogavahi, inbuilt rasayana properties etc. Medhya and Rasayana drugs incorporated with Ghrita thus give better action in these conditions. These formulations need intense clinical trials and pharmaceutical studies to establish their pharmacodynamics and pharmacokinetic properties in modern parameters.

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