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Clinical Research

Evaluation of diet and life style in etiopathogenesis of senile dementia: A survey study

Kundan Chaudhuri[1], S. M. S. Samarakoon[2], H. M. Chandola[3], Rajesh Kumar[4], B. Ravishankar[5]

[1]Lecturer, Department of Panchakarma, G.J. Patel Ayurved College, New Vallabh Vidyanagar, Anand, Gujarat, [2]Senior Lecturer, University of Kelaniya, Sri Lanka, [3]Professor and Head, Department of Kayachikitsa, Institute for Post Graduate Teaching and Research in Ayurveda, Gujarat Ayurved University, Jamnagar, [4]Associate Professor, Department of Psychiatry, M.P. Shah Medical College and G.G.Hospital, Jamnagar, Gujarat, [5]Head, Pharmacology Laboratory, SDM College of Ayurveda, Udupi, Karnataka, India

Abstract

Mind and body are inseparable entities and influences each other until death. Many factors such as stress, anxiety, depression, negative thoughts, unhealthy life style, unwholesome diet etc., disturb mental and physical wellbeing. Senile dementia is the mental deterioration, i.e, loss of intellectual ability associated with old age. It causes progressive deterioration of mental faculties, e.g., memory, intellect, attention, thinking, comprehension and personality, with preservation of normal level of consciousness. Two major types of senile dementia have been identified, namely that due to generalized atrophy in the cortical area of the brain (Alzheimer's type) and that due to vascular disorders mainly due to stroke. According to DSM-IV (diagnostic and statistical manual of mental disorders), the essential feature of dementia is the development of multiple cognitive deficits that include memory impairment and at least one of the following cognitive disturbances such as aphasia, apraxia, agnosia, or a disturbance in executive function. For the present study, a standardized questionnaire in the form of proforma incorporating types of foods (*madhura, amla and lavana rasayukta ahara* etc.) and life style (*divaswapna, ratrijagarana and manasika bhavas* etc) is prepared. To assess *manasika bhava*, Hamilton Anxiety Rating Scale, Hamilton Depression Rating Scale, Brief Psychiatry Rating Scale, and standardized gradations of *anumana pariksha* of *manasika bhavas* mentioned by Charaka at Vimana Sthana 4/8 were adopted. In this study, most of the patients had disturbed sleep, tendency to indulge in defective dietary habits and *kapha* vitiating diets and life style. On Hamilton Anxiety Rating Scale, patients had anxiety, tension, depression, difficulty in concentration, and memory. On Hamilton Depression Rating Scale**,** these patients had anxiety, depression, and hypochondriasis. On Brief Psychiatry Rating Scale, psychological factors affected include: anxiety, depression, somatic concern and tension, etc. The data reflects that unwholesome diet and disturbed mental health plays an important role in etiopathogenesis of senile dementia.

Key words: Alzheimer's disease, psychological factors, senile dementia, vascular dementia

Introduction

Dementia is a progressive degenerative disease of the brain and affects mainly elderly persons. Memory impairment is the essential feature of this disease which is characterized by multiple cognitive deficits that includes impairment in memory and at least one of the following cognitive disturbances such as aphasia (language disturbance), apraxia (impaired ability to carry out motor activities despite intact motor function),

Address for correspondence: Dr. Kundan Chaudhuri,
Lecturer, Department of Panchakarma, G.J. Patel Ayurved
College, New Vallabh Vidyanagar, Anand, Gujarat, India.
E-mail: dr.kundanchaudhuri@yahoo.com

agnosia (failure to recognize or identify objects despite intact sensory function), or a disturbance in executive functioning (i.e., planning, organizing, sequencing, abstracting) and which occurs exclusively without impairment in consciousness. The other cognitive functions that can be affected in dementia include general intelligence, learning, language, problem solving, orientation, perception, attention and concentration, judgment and social abilities. The personality is also affected. Agitation or withdrawal, hallucinations, delusions and insomnia are also common. The diagnosis of dementia, according to DSM-IV, requires the symptoms that result in a significant impairment in social or occupational functioning and that they present a significant decline from a previous level of functioning. In normal ageing, minor memory problem can occur but it does

not become severe and do not interfere significantly with a person's social or occupational behavior, which is commonly found in dementia. Dementia if not properly managed, such patients may become helpless, incapable of remembering the names of close relatives, and may wander into dangerous situations being oblivious of their surroundings.

With an increase in life span and decrease in death rate, the prevalence of dementia is rising all over the world. Of all patients with dementia, 50 to 60% have the most common type of dementia, i.e., dementia of Alzheimer's type. Worldwide, there is a new case of dementia every seven seconds and more than 35 million people are currently estimated to have dementia with more than 4.6 million new cases diagnosed each year.[1] The number of people suffering from dementia is expected to be 107 million by the year 2050. More than 60% of people with dementia currently live in developing countries. Numbers are increasing, especially in rapidly developing and heavily populated regions such as China, India, and Latin America. It is estimated that there are already approximately 1.5 million people affected by dementia in India and this number is likely to increase by 300% in the next four decades.[2]

This disorder may be progressive or static, permanent or reversible. An underlying cause is always assumed, although in rare cases it is impossible to determine a specific cause. The potential reversibility of dementia is related to the underlying pathological condition and to the availability and application of effective treatment. Approximately 15% dementia is reversible if treatment is initiated before irreversible damage takes place. More women have Alzheimer's disease than men; this may reflect women's longer life spans. Among the people above 65 years, men and women reported to have 0.6% and 0.8% prevalence rate, respectively. At age 90, these rates are 21% for men and 25% for women. The prevalence of moderate to severe dementia in the population over 65 years is approximately 5% and 20% to 40% in older than 85 years of age. The prevalence of dementia nearly doubles with every 5 years of age after the age of 60 years. The 1% of people aged 60 to 64 years are affected with dementia, 2% of aged 65 to 69 years, 4% of aged 70 to 74 years, 8% of aged 75 to 79 years; 16% of aged 80 to 84 years, and 30% to 45% of aged 85 years and above, respectively.[3]

According to the 1997 American Psychiatric Association Practice guideline for the treatment of patients with Alzheimer's disease and the dementia of late life, the onset of disease generally occurs in late life, most commonly in the 60s, 70s and 80s and beyond, but in some instances the disorder appears in the 40s and 50s known as early onset dementia. The second most common type of dementia is vascular dementia, which is usually related to cerebrovascular diseases. Hypertension predisposes a person to the disease. Vascular dementia account for 15 to 30% of all dementia cases and is most common in people between the ages of 60 and 70 years with more common in men than women. Approximately 10 to 15% of patients have co-existing vascular dementia and dementia of the Alzheimer's type. Dementia affects more than four million Americans and results in a total health care cost of more than $100 billion annually.[4]

Though senile dementia is not described as a separate disease entity in *Ayurveda*, however, some Ayurvedic terms can be correlated to dementia. *Smritinasha* is mentioned among the

prodromal symptoms of *jara* (ageing).[5] Further, *smritibhramsha* is described as symptom where *smriti* (memory) is vitiated by *rajas* and *tamas*.[6] Thus, senile dementia can be interpreted as *Jarajanya smritibhramsha* according to *Ayurveda*. Today, dementia has become the burning problem of old as well as younger persons. But, the cause of dementia of the Alzheimer's type remains unknown. Some studies have indicated that as many as 40% of patients have a family history of dementia of the Alzheimer's type. Thus, genetic factors are presumed to play a part in the development of the disorder, in some cases,[7] of course yet no definite drug is available. Early diagnosis and timely medication have become difficult due to unavailability of sophisticated equipments and high cost. Moreover, no direct therapy is available, which can reverse or retard the pathophysiological processes permanently. Though cholinesterase inhibitors such as tacrine, donepezil, rivastigmine are used since long times but they do not provide satisfactory results. *Ayurveda* has created an interest by the use of *Medhyarasayanas* in treating various psychiatric illnesses. As dementia is an *Urdhvajatrugata* disease, *Nasya* especially *pratimarsha nasya* can be of great help to old individuals. *Nasya* as therapy is indicated in various neuropsychiatric disorders viz. *Unmada* and *Apasmara*.[8] Role of free radical is well established in etiopathogenesis of Alzheimer's type of dementia. Vitamin C, E etc., having anti-ageing property are some of the known antioxidants, which can prevent oxidation and rancidity of fat or oil. The present study has been designed with the aims and objectives to evaluate the effect of dietetics and life style in etiopathogenesis of senile dementia.

Materials and Methods

Total 91 patients between 60-90 years attending the OPD of *Kayachikitsa* I.P.G.T. and R.A hospital, Jamnagar fulfilling the clinical criteria of senile dementia based on detailed history according to both Ayurvedic and modern parameters were registered in this study. They were screened for any neuropsychiatric disorders. The patients below 60 and above 90 years, suffering from psychiatric and neuropsychiatric diseases such as Schizophrenia, Parkinsonism, Huntington's disease, Pick's disease etc, persistent endocrine disorders and other systemic disorders; and who were on psychotropic drugs including alcohol were excluded from the study. Serum cholinesterase enzyme was investigated as biomarker and Hamilton Anxiety Rating Scale, Hamilton Depression Rating Scale, and Brief Psychiatric Rating Scales and standardized gradations of *anumana pariksha* of *manasika bhava* were applied in registered patients. For the present study, a standardized questionnaire in the form of proforma incorporating types of foods (*madhura, amla and lavana rasayukta ahara* etc.) and life style (*divaswapna, ratrijagarana and manshika bhava* etc) was prepared.

Observation and Results

The demographic data revealed that maximum patients (71.42%) belonged to the 60–70 year age group followed by 21.97% in the 70–80 year age group, which is of *vata* predominance. *Rajas* in association with *vata* vitiate *tamas* and play an active role in manifestation of *smritibhramsha*. Maximum patients (73.62%)

were male and 26.37% were female that showed dementia is of marked male predominance. Maximum patients (89.01%) were Hindu due to the dominance of Hindu population in this area. Majority of patients were educated (83.52%), retired (47.25%), married (98.90%) and from middle class (68.13%). They were engaged in their own business or household work and had some kind of derangement in their social and occupational functioning like forgetting names, mistake in accounts, paying bills, mislaying objects etc., which might have led them to attend for treatment. The 37.36% patients had good appetite followed by 24.17% moderate appetite which excludes dementia of metabolic disorders. Maximum patients (68.13%) preferred *madhura rasa* followed by 67.03%, 49.45%, 59.34% patients *amla*, *lavana* and *katu rasa*, respectively. Excessive indulgence in *madhura rasa* increases *kapha dosha*, a causative factor of *Smritibhramsha*. Dietary factors play a major role in the pathogenesis of dementia. Maximum patients (53.84%) had tendency to indulge in *vishamashana* (untimely diet) followed by 25.27% and 4.39% patients in *samashana* (taking wholesome and unwholesome diet together) and *anashana* (fasting), respectively. Maximum patients (58.24%) reported disturbed sleep, which suggests involvement of anxiety, stress, and other psychic symptoms probably due to decreased ability in performing daily routine. Age-related predominance in *vata* is involved in individual's bowel habits, which essentially lead to have *krura koshtha* (constipation). The 68.13% patients had *krura koshtha*, 16.48% *mridu kostha*, and 15.38% *madhyama kostha*. *Vata dosha* dominance is suggestive of *krura kostha* and prime causative factor for all neuropsychological disturbances. Sleep disorders are major manifestation in old age and maximum patients (62.63%) indulge in day sleep and night awakening (60.43%) to increase *kapha and vatadosha*, respectively. Both these *doshas* are causative factors in *smritibhramsha*.

Family history wise 76.92% patients had a negative family history followed by 23.07% having positive family history of dementia. Dementia of Alzheimer's type has a genetic predisposition, but as the number of patients was relatively less, hence no definite conclusion could be drawn. 68.13% patients reported no conflicts in their family and 79.12% patients had positive relationship in their family and at working place which means that they did not have any stressor from family and outside. Most of the patients (61.53%) did not report any physical or psychological disturbance in the family. This helps in building rapport with the family members, which is essential in the management of dementia. 85.71% patients reported negative history for alcohol and drug abuse in the family suggesting that cognitive impairment was not due to any side effects of drugs or alcohol. 91.20% patients' family had a positive attitude and insight towards the patient. Both these factors play a major role in the successful management of patients of dementia. 72.52% patients managed their family living moderately as majority of the patients belonged to middle socio-economic class. 75.82% patients had only one earning member in their family followed by 19.78% having two earning members. This suggests that due to disturbance in their routine work, these patients might be suffering from anxiety, stress etc., which may cause disturbed sleep.

All the patients (100%) complained of forgetfulness, followed by 98.90% patients having complaints of numbers forgotten and objects misled each. 95.60% patients had impaired attention followed by 89.01% having irritability and 82.41% having forgotten names. 75.82% patients had decreased efficiency in household tasks followed by 70.32% patients having mistakes in accounts and 61.53% patients having not recognized familiar faces and 58.24% patients having disturbed sleep. 96.70% patients had depression and 97.80% had anxiety and used to lose valuables. Serum cholinesterase was investigated as biomarker in these patients. Its normal value ranges between 4620-11500 U/L in males and 3930-10800 U/L in females.[9] In dementia, this enzyme which establishes dementia is decreased[10] in 94.59% patients. On Hamilton Anxiety Rating Scale, it was observed that 97.80% patients had anxious mood, followed by 96.70% having depressed mood, 96.70% patients having difficulty in concentration and memory and tension. The 58.24% patients had insomnia and 75.82% patients had fear. The 53.84% patients had gastrointestinal symptoms and 86.81% patients had behavioral problem. On Hamilton Depression Rating Scale, it was found that 96.70% patients had depressed mood followed by 97.80% having anxiety psychic symptoms, 27.47% anxiety somatic symptoms, 85.71% difficulty in work and activities and 53.84% with somatic gastrointestinal (GIT) problems followed by 83.51% patients with hypochondriasis, 53.84% with hopelessness, and 40.65% patients with helplessness. On Brief Psychiatric Rating Scale, it was observed that maximum patients were suffering from anxiety (97.80%), depression (96.70%), somatic concern (98.90%), and tension (96.70%). The 71.42% patients had disorientation in activities, 56.02% had conceptual disorganization, and 73.62% patients had blunted affect followed by 59.34% patients and 60.43% patients with unusual thought contents and excitement, respectively. *Manas pariksha bhava* showed that all patients had involvement of *manas bhava* such as *smriti* (memory) (100%), *vijnana* (knowledge) (79.12%), *virya* (energy) (69.23%), *sanjna* (recognition) (94.50%), *moha* (unconsciousness) (3.29%), *krodha* (anger) (93.40%), *bhaya* (fear) (78.02%), *shoka* (grief) (61.53%), *medha* (intelligence) (96.70%), *shraddha* (desire) (47.25%), *priti* (pleasure) (84.61%), *harsha* (joy) (86.81%), *avasthan* (stability of mind) (42.85%), *manasa* (32.96%), *raja* (attachment) (16.48%), *upadhi* (deception) (93.40%), *dhairya* (courage) (91.20%), and *dvesha* (dislike) (9.89%).

Body constitution of an individual is of prime importance in health and disease. All the patients had *dvandaja prakriti* with highest number of patients (72.52%) having *kapha pittaja prakriti* indicating the type of constitution at more risk in developing this disease. 50.54% patients had *tamas* predominance in *manas prakriti*. *Tamas* is one among the causative factors in *smritibhramsha*.[11] *Saratva* is the supreme part of *dhatu* providing strength to that particular *dhatu* and resistance to the disease. Absence of *saratva* (best quality of *dhatu*) especially of *rasa*, *rakta*, and *majja* seems to be a risk factor for *smritibhramsha*. The 81.31% patients had *madhyama sara*, whereas 15.38% had *avara sara*. *Samhanana* means compactness of body and *pramana* is measurement of bodily organs. The 81.31% patients had *madhyama samhanana* and 97.80% patients had *madhyama pramana*. *Satva* determines mental faculty. Most of the patients (94.50%) had *madhyama satva*. *Charaka* has mentioned that a person having *madhyama* and *avara satva* are more vulnerable to diseases, which is supported in this study. *Satmya* stands for factors wholesome to the individual when used continuously. The 91.20%

patients had *madhyama rasa satmya*. However, most of the time, it is difficult to get a proper history from the patient due to their unawareness towards their diet. The capacity for intake of food can be examined in two ways, viz. the power of ingestion as well as the power of digestion. *Charaka* has stated that both the strength and lifespan are determined by the diet of the individual. The maximum (47.25%) patients had *madhyama abhyavarana shakti* followed by 40.65% having *avara abhyavarana shakti*. Similarly, maximum patients (46.15%) reported *madhyama jarana shakti* followed by 41.75% having *avara jarana Shakti*, i.e, their digestive power is disturbed by *vata* and *kapha doshas*. *Madhyama aharashakti* correlates with the findings of *rasavaha* and *annavaha srotodusti lakshanas* like *aruchi*, *arasagyata*, etc. *Vyayama shakti* of a patient is determined by the ability to perform work. Here, 72.52% patients had *madhyama vyayama shakti*. The 84.61% patients belonged to *sadharana desha*. Though *sadharana desha* is good for healthy living, patients are more susceptible to indulge *mithya ahara vihara* that may produce *smritibhramsha*.

Discussion

All symptoms reported in the patients are suggestive of neuropsychological disturbance and impairment in intelligence may be due to the involvement of *rajas* and *tamas*, which are responsible for *smritibhramsha*. Moreover, all symptoms observed are suggestive of decreased level of acetylcholine[12] and acetyl cholinesterase[13] in the brain particularly in dementia of Alzheimer's type, which can be interpreted in terms of disturbance in the function of *Sadhakapitta*. It also signifies deranged condition of *dhi*, *dhriti*, and *smriti*.

Hamilton Anxiety Rating Scale was applied for checking the morbidity of anxiety with senile dementia. On analyzing the scores obtained, it was found that patients had anxious mood, followed by depressed mood, difficulty in concentration and memory and tension. The patients had insomnia, fear, gastrointestinal symptoms and behavioral problem. All these findings support the mind–body relationship affecting each other. Similarly, Hamilton Depression Rating Scale implied that patients had depressed mood followed anxiety psychic symptoms, anxiety somatic symptoms, difficulty in work and activities and somatic GIT problems followed by hypochondriasis, hopelessness and helplessness. The findings of this scale clearly indicate that maximum patients suffering from dementia in old age are prone to depression and anxiety. It may be due to their inability to perform usual household duties and feeling difficulty in adaptation with the surrounding. Brief Psychiatric Rating Scale implied for gross evaluation of all psychiatric disorders. Here, it indicates that maximum patients were suffering from anxiety, depression, somatic concern, tension, disorientation in activities, conceptual disorganization, blunted affect followed by unusual thought contents and excitement. These symptoms are clearly suggestive of neuropsychological disturbances in old person suffering from dementia. Evaluation of the *Manas pariksha bhava* revealed that all patients had involvement of *manas bhava* such as *smriti*, *vijnana*, *virya*, *sanjna*, *moha*, *krodha*, *bhaya*, *shoka*, *medha*, *shraddha*, *priti*, *harsha*, *avasthan*, *manasa*, *raja*, *upadhi*, *dhairya*, and *dvesha*, which shows that these factors play an important role in the pathogenesis of *smritibhramsha*. In anxiety, stress, level of

cortisol and 5-hydroxytryptamine in brain, are found elevated,[14] which alters the function of hypothalamic-pituitary-adrenal axis and may result in the decrease of cholineacetyltransferase, acetylcholine[15] and serum cholinesterase[16] in brain and cause dementia. In depression also, acetylcholine and other cholinesterase enzymes may be altered due to the decrease of dopamine and 5-hydroxytryptamine in brain, which ultimately disturbs the function of hypothalamic-pituitary-adrenal axis and may cause dementia. *Kapha* was increased in 50.54% patients followed by *vata* and *pitta* in 37.36% and 12.08% patients, respectively, suggesting that *kapha* is a prime causative factor in *smritibhramsha*, which supports the statement given by *Charaka* in Sharirsthan[17] where *Charak* has quoted that when mind is afflicted by *moha*, it leads to *Smritibhramsha*. As per *Charak*,[18] excessive *kapha* causes *moha*. *Kapha* in normal condition controls *dhi* (intellect) and *dhriti* (controlling power, which prevents mind from indulging in harmful objects).[19] In vitiated condition, *kapha dosha* can obstruct *srotas* of *dhatus* by hardening of *dhamani* (*dhamani pratichaya*),[20] which ultimately hampers the normal supply of *rasa*, *rakta* to the brain tissue leading to vitiation of *vata*, which ultimately causes derangement of memory and other cognitive impairment establishing dementia. Vitiated *kapha* in this way can vitiate *Udana vayu*, *Prana vayu*, *Vyana vayu*, *Tarpaka kapha*, *Avalambaka kapha* and *Sadhaka pitta*, which are all responsible for proper functioning of *buddhi*, *medha*, *smriti*, etc.

Dhamani pratichaya denotes the atherosclerotic changes of vessels, which occurs due to accumulation of lipid particularly cholesterol and cholesterol esters in the walls of the vessels.[21] These lipid materials are similar in nature with *kapha*, which is increased due to excessive intake of *kaphavriddhikara ahara* (various types of sweets, butter, cheese, curds, etc.) and *vihara* (*divaswapna etc.*) for long time. In this study, it was found that maximum patients were taking fatty and oily foods since five or more years. Moreover, obesity, hyperlipidemia, diabetes, etc. can cause dementia[22-25] Recent studies reveal that the foods containing more fats and oily substances having deficiency in omega-3 fatty acids cause Alzheimer's disease[26-29] In this survey study, patients were found to have taken excessive fatty and oily substances, which might have been deficient of omega-3 fatty acid that caused dementia. Due to vitiation of *rasa*, *rakta*, and other *dhatus*, especially *asthi* and *majja* do not get their proper nutrition causing signs and symptoms of *asthi* and *majja dushti*. In this study too it was found that *asthi*, *majja*, *rasa dhatus*, and their respective *srotas* were vitiated in 91.20%, 90.10%, 76.92% patients, respectively. *Annavaha srotas* was vitiated in 46.15% patient and *purishavaha srotas* was vitiated in 69.23% patients. According to *Dalhana*[30] *purishadhara kala* is *asthidhara kala* and *pittadhara kala* is *majjadhara kala*. When *purishadhara kala* and *majjadhara kala* are vitiated, *asthidhara kala* and *pittadhara kala* will also be vitiated, respectively. The 43.95% of patients had chronicity of three months to one year followed by 19.78% of one-two years and 14.28% for more than six years. The 36.26% patients were in mild stage of dementia followed by 43.95% and 19.78% in moderate and severe stage of dementia, respectively. No inference could be drawn from this data as sample was not sufficient. The 62.63% patients had body weight between 50-70 kg followed by 29.67% and 7.69% between 30-50 kg and 70-90 kg respectively, indicating that maximum patients had moderate body weight. As weight loss is

a common occurrence in Alzheimer's disease[31] and maximum patients had moderate body weight, it can be inferred that body weight is not much affected by dementia in this series of patients. The 76.92% patients had a height of 60-70 inches followed by 21.97% patients having height of 50-60 inches indicating that maximum patients had medium height, i.e., it is not affected due to old age. The 68.13% of patients had Ponderal Index between 11-13 followed by 29.67% patients between 13-15. This data shows that maximum patients had medium health status. Body surface area wise, maximum patients (42.85%) had Body Surface Area (M^2) within range of 1.60-1.80 M^2 indicating that body surface area of maximum patients was within normal range as it depends on height and weight, which were normal in maximum number of patients.

Conclusion

The survey study concludes that unwholesome diet, *kaphavriddhikara ahara* and *vihara*, stressful lifestyle with sedentary habits as well as depressed mood, negative thoughts, and abstinence from *sadvritta*, *swasthavritta* disturb one's psychological health and play an important role in dementia in old age by vitiating *rajas* and *tamas manasika doshas*, *Prana*, *Udana*, *Vyana vayu*, *Rasavahasrotas*, *Majjavaha Srotas*, *Manovaha srotas*, and *Ojas*. However, to reach at a definite conclusion we need to compare the dietary data in inflicted population to that of standard non dementia population to see if there are real differences to note. Similarly, a dietary factor as reason to dementia may require a prolong period of consumption to give rise to its pathological effects. Any such study would therefore require retrospection about any change in dietary pattern among the patients in their recent past to note if it has affected the pathological process. All these factors can be explored in larger sample for longer duration by future researchers interested in this subject, though the diet with deficiency of omega-3 fatty acids has a direct impact on Alzheimer's disease. Patients who reported *manovighatakara bhava* like *bhaya*, *chinta*, *shoka*, *dvesha*, *krodha*, and *moha* and taking *vatakaphaprakopaka ahara vihara* are at a high risk for developing *smritibhramsha*. Dementia is a progressive degenerative disease of brain. There is no definitive treatment for this disease till now. The drug regimen (*Aushadha*) needs to be well integrated with healthy diet (*Ahara*) and healthy life style (*Charya*) to attain the objective of healthy ageing in support of Government of India's national campaign on geriatric health to make senior citizens healthy and happy.

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हिन्दी सारांश

जरावस्थाजन्य स्मृतिभ्रंश पर आहार एवं जीवनशैली का मूल्यांकन

कुन्दन चौधरी, एस. एम. एस. समरकून, एच. एम. चन्दोला, राजेशकुमार, बी. रविशंकर

शरीर एवं मनस जीवनपर्यन्त एक दूसरे को प्रभावित करनेवाले अवयव हैं । मनुष्य के आहार की अनियमितताएं एवं विषमताएं तथा जीवन के प्रति नकारात्मक शैली उसके मनोदैहिक स्वास्थ्य पर प्रतिकूल प्रभाव डालती हैं । जरावस्थाजन्य स्मृतिभ्रंश एक ऐसी व्याधि है, जिसमें रोगी की चेतनता अप्रभावित रहते हुए उसकी बौद्धिक क्षमताओं यथा–धी, धृति, स्मृति आदि में निरन्तर ह्वास होता रहता है । यह व्याधि दो रूप में प्रकट होती है, प्रथम वह जिसमें मस्तिष्क के कॉर्टिकल क्षेत्र में शोष होता है (अलजाईमर रोग), दूसरी वह जो रक्त प्रवाह में अवरोध के कारण होती है (स्ट्रोक) । डी.एस.एम. ५ के अनुसार स्मृतिभ्रंश का प्रमुख लक्षण बहुविध संज्ञानात्मक न्यूनता का उत्पन्न होना है । वर्तमान अध्ययन में यह पाया गया कि जिन रोगियों के आहार, निद्रा एवं जीवनशैली में व्यतिक्रम उपस्थित था, उन रोगियों में हैमिल्टन ऐन्जाइटी रेटिंग स्केल तथा हैमिल्टन डिप्रैशन रेटिंग स्केल जैसे मनोवैज्ञानिक स्केल के आधार पर तनाव, चिंता, एकाग्रता का अभाव आदि लक्षण प्रधान रूप से मिले हैं । ये तथ्य जरावस्थाजन्य स्मृतिभ्रंश की सम्प्राप्ति में मिथ्या आहार–विहार एवं मानसिक भावों की प्रबल भूमिका को दर्शाते हैं ।