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Role of Ayurveda in Geriatric Nutritional Diseases

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ABSTRACT

Old age is a biological process that can no one avoid proper care and caution can prevent or delay the natural process by which a person may enjoy long healthy and disease free life. Ayurveda carries the treasure of natural holistic geriatric health case modalities with the goal of "swasthasya swsthya rakshanam aturasya vikaar prashamanam ch" the central focus of strength of ayurveda in geriatric care swings around the concept of Rasayana, Dincharya, Ritucharya, Panchkarma, healthy diatetics, positive life style, Yoga and spirituality which compensates the age related biological losses.

Keyword

Rasayana, Dincharya, Ritucharya, Panchkarma

INTRODUCTION

The concept of aging is widely scattered in various texts in the *Ayurvedic* classics, but has also been focally concerned under a specialty called *Rasayana*. *Acharya Charaka* and *Vaghbhata* named the very first chapters of their treatise as *Dirgham Jivatiyam Adhyayam* and *Ayuskamiyam Adhyayam* respectively, indicating the measures adopted for a healthy longevity. This proves beyond any doubt that the concept of geriatrics was embedded in Ayurveda since time immemorial.

Ayurveda quotes Human body as ***Sharira*** i.e. ***"Shiryate Iti Shariram"*** which means Human body is bound to destroy and it is continuously destroying [1]. Old age "***Jara"*** in Ayurveda is described as Swabhavika Roga (naturally occurring disease). Jara etymologically expands to ***"Jiryati Iti Jara"*** which means 'that which becomes old by the act of wearing

out'. The word Jara is derived from the root 'Jrusha Vayohanou' i.e. growing older. It may be defined in following ways *"Vayah Krute Shlathanam Sadyavastha Visesha"*. Sushruta has categorized the swabhavabala pravrutta vyadhi's into 2 types viz. Kalaja (timely occurring) and Akalaja (untimely occurring) jara. Dalhana opines that Kalaja means "*Ye Samye Prapta Bhavanti*"i.e. the one which occurs timely[2]. Hence appearance of signs and symptoms of aging at a particular scheduled age is considered as Kalaja jara i.e. normal aging. Sushruta further opines that this type of aging is inevitable and there are no causative factors exist. Akalaja Jara (Premature Aging) Dalhana explained that, Akalaja means "*Asamaye Jata*" i.e. one which occurs untimely. Hence appearance of signs and symptoms of aging prior to scheduled age are considered as Akalaja Jara (premature aging). Sushruta further opines that this type of aging is acquired one. Hence he called it as "Apari Rakshana Krita" that means it occurs by following improper health care measures [2]

Madhava Nidana explains the causes of Jara as, [3]

1. Ati padgamana - Excess Walking
2. Ati Sitasevana - Excessive cold intake
3. Khadanna Bhojana – Improper food consumption
4. Manasika Dukha –Mental Stress etc.

Jara Poorva Roopa

Acharya Madhavakara has mentioned followings Purvaroopa of Jara as

Shakti ksheenata – Diminution of strength

Smriti Nash – Diminution of memory

Glani – lethargy

Vali –Wrinkling of skin

Palitya-Grey hair

Dantha shaithilya- Flabbiness of body tissues

Svabhava parivarthana etc – Change in mood

Acharys have explained different classification of age,

Acc.To Acharya Charaka [4]

Balyavastha - birth to 30 years

Madhyavastha -30 to 60 years

Viddhavastha - above 60 years

Acharya Sushrtha and Kashyapa have explained Vriddhavastha after 70 years.

Acharya Sharandhara has very distinctly described the loss of bodily structures and functions decade wise. [5]

Balyam Vruddhi Chavi Medha Tvak Drishti Shukravikramau |

Buddhih Karmendriym Cheto Jeevitam Dashato Hrashet || (Sha.Pu.6/19)

Decades	Year	Loss of Body Structure & Functions
First	1-10	Balya (Childhood)
Second	11-20	Vriddhi (Growth)
Third	21-30	Cabi (Complexion)
Fourth	31-40	Medha (intellect)
Fifth	41-50	Tvaca (Skin)
Sixth	51-60	Drsti (Vision)
Seventh	61-70	Shukra (Virility)
Eight	71-80	Vikrama (Strength)
Ninth	81-90	Buddhi (intellect)
Tenth	91-100	Karmendriva (Function of all the Indriyas)
Eleven	101-110	Chetna (spirituality)
Twelve	111-120	Jivanm (life)

WHO consider the old age after 65 year of age.

As per Census 2011 there are nearly 104 million elderly persons (aged 60 years or above) in India in which 53 Million are females and 51 Million are males. The population over the age of 60 years has tripled in last 50 years in India and will relentlessly increase in the near future. According to census 2001, older people were 7.7% of the total population, which increased to 8.14% in census 2011. The projections for population over 60 years in next four censuses Are: 133.32 million (2021), 178.59 million (2031), 236.01 million (2041) and 300.96 million (2051) [6]. The factors underlying this transition are increased longevity, declining fertility and mortality, this demographic shift compels us to confront the changes associated with aging. Ayurveda has got the potential for prevention of diseases by promotion of health and management of diseases occurring in old age. Rasayana, a unique branch of Ayurveda deals with the health problems of the aged and measures to delay ageing and to minimize the intensity of problems occurring in this degenerative phase of one's life. Panchakarma is a radical approach of Ayurveda designed to cleanse the Srotas of the body. It is beneficial for preventive, promotive and rehabilitative health purposes and management of various systemic diseases.

OBJECTIVES

- To evaluate the current status of geriatrics and the common disorders of the aged
- To discuss the concepts of geriatric nutrition
- To discuss the geriatric health care measures in Ayurveda

MATERIALS AND METHODOLOGY

The basic and conceptual materials are taken from Ayurvedic classics i.e. Laghutrayi and Brihatrayi. In addition, references are taken from various Ayurvedic and nutrition text books. The statistics are taken from census and statistics of India, also from various studies published in renowned journals.

Etiology of Ageing or Jara

Prakrita Kapha is the force behind structure and cohesion at the cellular level as it is at the gross level. Kapha Kshaya leads to Vata Vridhi. Vata causes Shoshana (drying up) of Poshaka Rasa (nourishing sap) leading to Dhatukshaya (degeneration at tissue level) and subsequently all these leads to Dhatu and Ojokshaya[7].

Functions of Kapha	Visible symptom of loss of Kapha	Likely Degenerative Manifestation At old age
Sneha	Dryness Loss of moisture	decreased synovial fluid, onset of osteoarthritis
Bandhah	Weakening of bonding between cells	Infirmity in muscles, disconnection between nerve synapses as senile dementia, falling teeth, falling hair
Sthiratwam	Loss of Stability	Disturbed coordination between muscles and nerves, motor disability
Gauravam	Diminution of tissues Muscle	Muscular dystrophy, onset of osteoporosis
Vrushuta	Infertility	Dysfunction of testes and ovaries
Balam	Weakness	Muscle weakness
Kshama	Loss of stamina	Fatigue
Dhriti	Loss of intellectual ability	Senile dementia, Alzheimer's disease
Alobha	Loss of contentment	Irritability and mood disorders

Problems in Vruddhavastha

Geriatric problems may be mainly classifieds as **Physical, psychological, emotional and social** categories.

Physical Problems

The following are some very common physical disorders of the old Age:

• Cardiovascular - hypertension, MI, CCF

• Respiratory - asthma and bronchitis.

• Musculoskeletal - osteoporosis, spasm, drooping shoulder.

• Gastrointestinal - dyspepsia and flatulence.

• Genitourinary - nocturia, prostate enlargement.

• Locomotor - osteoarthritis, rheumatoid arthritis, gout, Parkinson disease.

• Endocrinological - diabetes is one of the major Endocrinological Problems found in old age.

• Ophthalmic - senile cataract and glaucoma are very common in old People.

• Hearing - loss of hearing and hard hearing are the major hearing Problems of old age.

• Nervous - insomnia is commonly found old age problems.

• Problems of hair - hair loss and baldness.

• Cancer - Cancer incidence and severity increases with age.

• Menopausal - in addition to all these, ladies experience menopausal health disorders.

Psychological Problems

Dementia is often noticed in old people. There are 24.2 million people living with dementia worldwide, with 4.6 million new cases every year. Sense of being neglected in the family is a common complaint of the aged. Depression is the most harmful and widely noticed Psychological complaint of the senior citizens.

Emotional & Social Issues In Elderly

Fighting geriatric problems is not the sole responsibility of the senior citizen alone. The family and the society have their share of responsibility in the fight. Marital status, financial status, work, history, education, responsibilities, living atmosphere and arrangements are the prime issues to be considered while addressing the issues of elderly. Loss of key support like death of spouse/siblings, retirement, relocation and financial deterioration. Due to changing phenomenon in India like nuclear family system and urban migration of the people, the rural elderly people are the most sufferers due to absence of family support. In addition, physical abuse, psychological abuse, financial abuse are common on elderly patients, which Further add to the agony. These changes may cause multiple problems With regard to physical, social, mental wellbeing.

Geriatric Nutrition

As a result of reduced basal metabolism and physical activity, the calorie requirements are about 25% less than those of normal individuals doing light work.[8]

Proteins - due to decreased appetite and poor digestive capacity, old people are likely to consume less protein and suffer from protein deficiency. The daily protein intake should be at least 1.0 to 1.4 g per kg body weight.

Fats - since fat is a concentrated source of energy, the diet shall contain at least about 50gm fat. Half of this quantity is in the form of vegetable oils rich in essential fatty acids.

Minerals - calcium intake should not be less than 0.5gm and the iron intake 20gm. Since even, mild anemia affects the health of older people due to less efficient circulation of blood, iron intake should be

adequate to prevent anemia.

Vitamins - mild deficiencies of several vitamins occur frequently among older people. It is therefore essential to ensure adequate intakes of all essential vitamins. It is essential to include 400IU of Vitamin D as it will help in the absorption of calcium and to prevent osteoporosis.

Water - the importance of adequate fluid intake so as to maintain the volume of urine excreted at a minimum of 1.5 liters is not generally recognized. Water can be consumed as such or in the form of butter milk, fruit juices, porridge, soup etc during summer season.

Roughage - adequate intake of soft unavailable carob-hydrates in the form of tender vegetables and fruits should be ensured to avoid constipation. The senile intestinal mucosa does not tolerate fiber from mature vegetables and bran of cereals.

Modification of diet during old age[9]

Dietary Modification	Reason
Food must be soft, easily chewable	Problem of dentition, fallen teeth or dentures
Food should be easily digestible	Decreased production of digestive enzymes
Restricted fat in the diet, inclusion of PUFA	Susceptible to heart disease
Food rich in fiber should be given	To prevent constipation and cholesterol level. To prevent colon cancer
Coffee, cola and tea should be restricted	May result in insomnia due to over stimulation
Calcium rich foods like milk should be given Green leafy vegetables can be given liberally	To compensate the bone loss and reduce the incidence of osteoporosis Source of nutrients like carotene, calcium, iron, riboflavin, folic acid and vitamin C besides fiber is rich in anti-oxidants
Food of the elderly should consist of familiar foods. New foods are difficult to accept	Unfamiliar or changes in the food pattern may lead to psychological problems like depression.
Small and frequent meals instead of three heavy ones	Favours more complete digestion and free from distress
A glass of hot milk just before going to bed	May induce sleep
Heavy meal at noon and light evening meal	Sleep is less likely to be disturbed
Too much sweet with lot of fats and sugar should be avoided.	Too much of sugar may cause fermentation, discomfort due to indigestion and cause tooth ache and increase cholesterol level. May lead to obesity
Plenty of fluid	To prevent dehydration and constipation

Geriatric Care

Geriatric Care has two distinct dimensions,

1. Promotion of health and longevity,
2. Management of diseases of old age

For promotion of health and longevity following the, Rasayan, Panchkarm Dincharya, Ritucharya plays the important role in Ayurveda.

Concept of Rasayana

Ayurvedic system of medicine specially incorporates Rasayana Tantra as one of the eight disciplines of Astanga Ayurveda, which is exclusively devoted to Geriatric health care.

"Rasasya Ayanam Rasayanam"

The Therapy, which gives the benefit of good Rasa, is Rasayana. Hence, it is the therapy by which one gets the Rasa, Raktadi Dhatus of optimum quality.

PROBABLE MODE OF ACTION OF RASAYANA

Rasayana basically promotes the nutrition through four modes. They are:

1. By directly enriching the nutritional intake of the body through increasing the consumption of Amalki, Satavarai, Milk, Ghee, etc.

2. On Agni - By improving Agni i.e. digestion and metabolism through Bhallataka, Pippali etc, thereby promoting nutrition.

3. SROTOVISHODHANA - By promoting the capability of Srotas or microcirculatory channels in the body, through herbs like Haritaki, Guggulu, Tulsi, and so on.

4. By Its Vishaghna Property.

Effect of Rasayana [10] –

Deerghamayuh Smriti Medha Arogyam Tarunam Vayah |

Prabhavarn Swarodaryam Dehendriya Balam Param ||

Vaaksiddhim Pranati Kanti Labhate Na Rasayanat |

Labhopayo Hi Shastanam Rasadinam Rasayanm ||

(Ch.Chi 1/7,8)

In short Rasayana -

- Gives Long life
- Increase intelligence, memory
- Promotes good health
- Gives good complexion and speech
- Gives strength to sense organs
- Delays Ageing and death
- Excellences the body tissues

Classification of Rasayana

Ajasrika Rasayana: which is used as a part of diet as Milk, Ghrita (ghee), Madhu (honey) etc.

Kamya Rasayana – which is used for longevity, memory and intellectual power, complexion etc.

A specific class of drugs has been mention in Charaka Samhita as Vaya Sthapak with ten renowned drugs. These drugs should apply according to requirement of patient. These ten drugs are following[11]

I. Amrita (*Tinospora cordifolia*)

ii. Abhaya (*Terminalia chibula*)

iii. Dhatri (*Emblica officinalis*)

iv. Mukta (Pearl)

v. Sveta (White variety of *Clitoriaternatea*)

vi. Jivanti (*Leptadenia reticulata*)

vii. Atirasa (*Asparagus racemosus*)

viii. Mandukparni (*Centella asiatica*)

ix. Sthira (*Desmodium gangeticum*)

x. Punarnava (*Boerhaavia diiffusa*)

Medhya rasayana -Brahmi (*Bacopa monnieri*), Shankhpushpi (*Convolvulus pluricaulis*), Mandukparni (*Centella asiatica*), Guduchi (*Tinospora cordifolia*) and Madhuyasti (*Glycyrrhiza glabra*) in the treatment of senile dementias.

Naimittika Rasayana: which is used specifically in the treatment of specific diseases.

- Arjuna (*Terminalia arjuna*), Guggulu (*Commiphora mukul*) and Karveera (*Nerium indicum*) as cardioprotective in cases of ischemic heart disease,

- Arjun (*Terminalia arjuna*), Sarpgandha (*Rauwolfia serpentina*), Shankhpushpi (*Convolvulus pluricaulis*), Ashwagandha (*Withania somnifera*) and Punarnava (*Boerhavia diffusa*) in hypertension.
- Vijaysar (*Pterocarpus marsupium*), Gudmar (*Gymnema sylvestre*), Jambu (*Syzygium cumini*), Methika (*Trigonella foenum-graecum*), Sadabahar (*Lochnera rosea*), Haridra (*Curcuma longa*) and Karvellaka (*Momordia charantia*) in diabetes.
- Ashwagandha (*Withania somnifera*), Guduchi (*Tinospora cordifolia*), Shunthi (*Zingiber officinale*), Shallaki (*Boswellia serrate*), Rasna (*Pluchea lanceolata*), Lashun (*Allium sativum*), Eranda (*Ricinus communis*), Nirgundi (*Vitex negundo*) and Shuddha Kuchala (*Strychnos nuxvomica*) in arthritis.
- Varuna (*Crataeva nurvala*), Gokshura (*Tribulus terrestris*) and Shigru (*Moringa oleifera*) in treatment of senile enlargement of Prostate.
- Triphala (*Emblica officinalis, Terminalia bellirica* and *Terminalia chebula*), Jyotishmati (*Celastrus panniculatus*) in senile visual disorders.
- Kapikacchu (*Mucuna prurita*) in treatment of Parkinsons disease.
- Amrita (*Tinospora cordifolia*) and Amalaki (*Emblica officinalis*) in immunodeficiency.
- Silajatu (*Asphaltum punjabinum*) in prameha
- Tuvarak (*Hydnocarpus laurifolia*) in kushtha

Achara Rasayana – Rejuvenative conduct and life style.

Panchkarma

Panchakarma therapy is the therapeutic technology of samsodhana karma it possesses numerous preventive, curative and promotive potentials which impart rehabilitative effect and helpful in maintaining physical fitness. These therapies aim at promoting longevity in life by guiding the individual in the prevention of disease and delaying ageing . Certain procedures of classical panchakarma such as vamana are of drastic nature therefore ordinarily they are contraindicated in elderly persons. However, many procedures may be modified to be administered in elderly persons to achieve desired results. Several intermediary palliative measures like Abhyanga, Sweda, Pinda Sweda, Kāya Seka, Sirovasti and Sirodhara are very useful in elderly persons too, for imparting physical fitness and rehabilitative effect.

1. **Poorvakarma -** Dipana, Pachana, Snehana And Swedana can be easily administered

   dose of Snehana should be dicided carefully .

2. **Pradhan karma** –

   A) **Vamana** - Generally Vamana should not be administered after 60 years of age . in extream conditions it should be conducted very carefully. Vamana should not be administered in elderly person if he is suffering from hypertension, ischemic heart disease, peptic ulcer, cirrhosis of liver, pulmonary tuberculosis or any major lung disease, intracranial tumor, glaucoma etc.

   B) **Virechana** - Virechana especially of Mridu variety is best suited to the elderly patients.

   C) **Basti** - . Basti is specially indicated. Matra basti is a harmless standard Sneha Basti which can be used as a routine measure without complications in disease of Vata.

D) **Nasya** - Pratimarsa nasya can be done at any age from birth to death

Besides above mentioned classical Panchakarma procedures, a number of Keraliya traditional practices such as Dhara Karma, Pinda Sweda, Kaya Seka, Anna Lepa, Siro Lepa or Sirovasti are very useful in Geriatric Care. The Keraliya practices are very popular in view of their efficiency and safety because of being noninvasive.

Panchakarma therapy in the elderly has two fold objectives:

1. As a therapy for rejuvenation to retard aging i.e. to ward off the effects of aging for healthy ageing
2. As an adjunct in the treatment of diseases of the elderly

An apparently normal elderly person should undergo periodical Panchakarma therapy followed by Rasayana in order to promote his overall health and to avert the effect of ageing.

The common diseases of the elderly are Benign enlargement of Prostate, Osteoarthritis, Hypertension and IHD, Diabetes, Chronic Bronchitis, Parkinson's Disease, Alzheimer's Disease, Senile Dementia, Motor Neuron Disease, Cancer and Dysfunction of Sensory Organs and Locomotor System. Most of these problems are of degenerative nature and treatment has to be restorative, rejuvenative and rehabilitative.

The elderly patients afflicted with degenerative locomotor disorders like myopathies and osteoarthritis are to be treated with Abhyanga and Sweda in general. In simple cases, Abhyanga and Nadi Sweda with Dashamula Baspa for 2-3 weeks is beneficial. In case of single big joint involvements, one can try local Annalepa therapy or Nadi Sweda following Abhyanga. All such patients must take simultaneous Rasayana therapy with necessary herbomineral supplements

Different Panchkarm Procedure with Related Systems and Problems [12]

Name of Disease or Systems	Conditions in Old Age	Procedure
Nervous system	Neurodegenerative diseases	Vasti, Sirovasti, Sirodhara, Kāyaseka, Pinda Sweda
Locomotor system	Amavata, Cervical and lumbar spondylosis, Gout etc.	Snehana, Swedana, Patra Pinda Sweda, baluka Sweda, Pinda Sweda, Vasti, Rakta visravana
ENT Diseases	Pratisyaya, Headache, Deafness, Sinusitis	Nasya, Karnapurana, Sirodhara, Vasti
Respiratory system	Bronchial asthma, Respiratory allergies	Vamana, Virechana
Cardiovascular system	Hyper lipidemia	Lekhana vasti
Urogenital system	BPH, Atonic bladder, Oligospermia	Vasti - Anuvasana, Asthapana
Gastrointestinal system	Gulma, Plihavikara, Digestive disorders, Constipation etc.	Vamana, Virechana, Vasti

CONCLUSION

Every individual wishes to live a longer and healthy life. Irregular life style, dietary habits and degenerative diseases are the determining factor of Jara Vyadhi. An increase in elder population and their specific disease conditions are the matter of concern. Hence, the need of hour is to develop a powerful strategy for Geriatric health care management. Ayurveda offers multi-dimensional approach for the prevention of early ageing and management of diseases of old age. Modern research trends on healthy ageing also revolve around the Ayurvedic principles of management of Jara. Dhatu Kshaya is responsible for all types of Jara Janya Vyadhi, which are ultimately leads to the degenerative changes in the body. Therefore, the principle line of management should be to reduce the Dhatu Kshaya and to cope up with the degenerative changes. Principles of ideal lifestyle as described in Ayurvedic classics are *Rasayana* (Rejuvenation therapy), D*incharya* (Daily regimen), *Ritucharya* (Seasonal regimen), Panchakarma, are the foremost step in the prevention of early ageing and disorders of old age. Now this is the responsibility of Ayurvedic professionals to promote and propagate the potential of Ayurveda for prevention of geriatric disorders and their management.

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