

**CRITICAL REVIEW ON ROLE OF AYURVEDA FOR PREVENTIVE
AND CURATIVE MEASURES IN GERIATRICS****Vd. Supriya Ashok Shelke^{1*} and Vd. Shital O. Chavan²**

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ABSTRACT

Ayurveda, a rational system of medicine has gained global acceptance on virtue of its fundamental doctrine of holistic approach. In India 3.8% of the population are older than 65 years of age. According to an estimate the likely number of elderly people in India by 2016 will be around 113 million. Maintaining the vitality of youth and preserving quality of life has long been a quest of civilized man. Ayurveda is the science of life and longevity. Jara (geriatrics) is one of the part of ashtanga Ayurveda. According to Ayurveda ageing is outcome of kala and is described under swabhav balapravritta vyadhi, which is caused by the time naturally. Vatadosha the most important factor in the patho-physiology of ageing obviously because of its natural dominance at that stage of life. Ayurveda has a power to prolonging life with promotion of health and prevention of disease occur due to ageing with

a number of measures like proper diet, rasayana, sevan, achara rasayana, yoga practice, proper pancharma and some herbal drugs. Practice of all these measures increase the quality of life in old age.

KEYWORDS: Jara, Geriatrics, proper diet, rasayana, yoga practice, panchakarma, herbal Drugs.

INTRODUCTION

Ageing is a process of physical, psychological and social change in multi-dimension aspects. The world's elderly population is increasing. By 2050, one-fifth of the world will be older

than 65 years. In India, they will be about 113 million elderlies by 2016.^[1,2] Ageing is a general response that produces observable changes in structure and function leading to increased vulnerability and decreased viability to environmental stress and disease.^[3] Ayurveda, the Indian traditional holistic health science has got the potential for prevention of disease by promotion of health and management of disease occurring in old age. In present due to improper dietary habits, defective life style, excessive stress and lack of exercise, the process of ageing starts very earlier. These factors produce various degenerative change as well as metabolic disorder in our body. Some disease and condition that are common in old age are osteoarthritis, hypertension, urinary incontinence, diabetes mellitus, arthritis, atherosclerosis, cardiovascular accidents, respiratory disease, senile dementia, delirium, confusion etc. In Ayurveda, the science of life has jara chikitsa (geriatrics) being an integral part of ashtanga Ayurveda incorporates various technique for promotion of health and prevention of disease in old age. So, there is need to generate awareness among the mass about the increase in the number and proportion of older people in society and about the potential of Ayurveda in geriatrics.

Preventive and Curative Measures for Geriatrics

Acharya Charaka says “He, who treats the disease before its commencement or at an early stage, experiences long-lasting happiness”. Geriatric problems are best confronted by preventive measures than curative ones. Therefore, geriatrics has to be treated much before the commencement of old age. The ideal time for treating the old age problems is youth. Discipline in young age prevents geriatric problems. By adopting a healthier lifestyle, the risk of a whole range of diseases can be reduced. These factors are diet and nutrition, exercise, weight, smoking and alcohol, social activities.

Diet and nutrition

With increasing age, people become more prone to malnutrition for many reasons^[4] including - Arochaka (Anorexia), Smritinash (Dementia), Manoavasada (Depression), Stroke, Kampavata (Parkinson disease) and other neurological disorders, delayed gastric emptying. The diet should be regulated taking into account the habitat, season, age, and according to one's digestive capacity.^[5]

Following points may be considered while planning/advising dietary and other life style regimen.

- The food should be tasty, nutritious, fresh and good in appearance.

- Too spicy, salty and pungent food should be avoided.
- It should neither be very hot nor very cold.
- Liquid intake should be more frequent and in small amount.
- Heavy food can be prescribed in a limited quantity.
- Heavy food should not be given at night. The proper time for night meals is two to three hours before going to bed. After dinner, it is better to advice for a short walk.
- Heavy physical work should be avoided after meals.
- Mind should be peaceful while eating.
- Eating only whenever hungry and avoidance of over eating.
- Inclusion of sufficient amount of vegetables and fruits in diet.
- Daily intake of vegetable soup and fruit juices.

Characteristics of ageing

Ageing is a process of gradual, progressive and generalised impairment of functions resulting in the loss of adaptive response to stress and in increasing the risk of age-related disease.

According to Acharya Charaka age (vaya) is divided in three parts. Bala (young age), Madhya (middle age) and jirna (old age). Person above sixty years of age considered as “old”. In old age there is progressive diminution of dhatu (body constituents), indriya (sense organ), bala (strength), virya (semen), paurush (masculinity), parakrama (bravery), grahan (power of understanding), dharana (power of retention), smarana (memorizing), vachana (speech), vidnyan (analyzing facts) and also dhatuguna (qualities of dhatu). In old age there is prominence of Vayu dosha and dhatu which has a property to undergo gradual degeneration.^[6]

Acharya Sushruta has described that after seventy years of age one is called as old in whom the dhatus, sensory and motor organs, strength vigour and enthusiasm decline gradually, he gets wrinkles in the skin, grey hairs and baldness and other complaints, is incapable of doing anything and is like a worn-out house in the rain.^[7]

Acharya vagbhata follows sushruta in describing age of old one and explains the features of old age as diminution of all dhatus, indriyas (sensory organs) and oja i.e. bala (immunity).

Since birth to death the moment of conception Right into extreme old age, the human body undergoes considerable change in shape, size and composition. Acharya Sharangdhara

describes the sequential bio-loss occurring during different decades of life due to process of ageing. Declining of these bio losses at various decades of life areas are mentioned in table 1.

Table 1: Bio-losses at various Decades.

Decade of life	Loss mentioned
1	Balyam (childhood)
2	Vridhhi (growth)
3	Chhavi (complexion)
4	Medha (intellect)
5	Twaka (skin)
6	Drishti (vision)
7	Shukra (virility)
8	Vikram (strength)
9	Buddhi (memory)
10	Karmendriya (functions of all the indriyas)

Factors Responsible for Ageing

Jara, the old age is an unavoidable phase of life which ultimately ends into death. The factors responsible for ageing is mentioned as follows:

Kala (time factor)

All the things in the universe undergo various changes before it is destroyed completely. In Ayurveda, this sequence of change is known as “parinama”. Which take place under the influence of “kala”. Thus, it can be concluded that parinama bring the Jara, is the sequential events of balyavastha, yuvavastha, jaravastha etc. Are all the consequences of kala. Jara is the phase of life that occurs by the effect of time.^[8]

“kalasyaparinamena jaramrutyunimittajah|”

Swabhav-bala (strength of nature)

Acharya Sushruta mentioned Jara (ageing) as one of the swabhavabalapravitta vyadhi. It means strength of nature is responsible for ageing also Charaka has explained in his theory of swabhavoparamvada that “there is a causative factor for the manifestation of being but no causative factors as such exists for their deterioration.”^[9] That means the process of deterioration occurs naturally. Thus, swabhava can be considered as a responsible factor in the causation of Jara.

Tridosha

Tridosha (Vata, pitta and kapha) plays an important role in ageing. Tridosha maintain good health when they are with their quality and quantity and also produce diseases when their qualities and quantity will be disturbed. These doshas exists in the body all the time but it varies as per age, day or night period and after taking meals. During childhood kapha dosha predominant, in the middle age pitta dosha and in the older age vata dosha is said to be dominant. The properties of vata dosha are described as ruksha, laghu, sheeta, khara, and vashada. So vata dosha by nature decreases lustre of skin, lessens body strength, dries and decay the body and accelerate ageing process.

Agni

Agni is a medium responsible for the conversion of dietary substance into tissue elements. In old age, predominance of vata dosha occurs which is responsible for vishamagni which affects the digestion and creating under nourishment of the tissue enhance the process of ageing.

Geriatric health Care

A healthy and successful ageing is what everyone desires. Successful aging refers to the ability to age well. This encompasses good physical and mental functioning, life satisfaction, social functioning and social support. Successful aging has been associated with a positive psychological stance in later years, as well as general well-being and happiness.^[10] Geriatric health care approach has two aspects: measures for the promotion of health and longevity and management of disease of old age. Modern medicine has evolved a separate branch for geriatric care called geriatric medicine. The medical field has been able to manage the geriatric disorder, but they failed in the point of promotion of a healthy and successful ageing. Ayurveda is notably strong in this aspect and it has rich potential to promote health of the elderly, besides the scope of rejuvenation and promotion of longevity.

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.

Protein: Due to decreased appetite and poor digestive capacity, old people are likely to consume less proteins 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 50 gm fat. Half 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 20 gm. Since even, mild anaemia affects the health of older people due to less efficient circulation of blood, iron intake should be adequate to prevent anaemia.

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 400 IU 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 litres is not generally recognised. 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 carbohydrates in the form of tender vegetables and fruits should be ensured to avoid constipation. The senile intestinal mucosa does not tolerate fibre from mature vegetables and bran of cereals.^[11]

Modification of diet during old age^[12]

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 fibre 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	To compensate the bone loss and reduce the incidence of osteoporosis.
Green leafy vegetables can be given liberally	Source of Nutrients like carotene, calcium, iron, riboflavin, folic acid and vitamin C besides supplying fibre, 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.
Clear soup at the beginning of the meal	Aids digestion
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

Ayurvedic managements of old age

Ayurveda gives primary importance to prevention and promotion of health care and the maintenance of positive health. The major preventive approaches for maintaining and improving the quality of life include individualised specific measures like dinacharya, ratricharya, ritucharya, hitakara and matravata ahara, sadvritta-palana etc. And also, yoga practices, panchakarma, rasayana sevana. These measures can retard the process of ageing.

Exercise

Exercise helps to control weight, improve emotional well-being and relieves stress, improve blood circulation, flexibility. Regular yogic exercise from youth limits the effects of old age.^[13]

Benefits of the geriatric yoga

- Yoga provides a good balance, blood stream and tissue liveliness thanks to the enhanced flexibility and core stabilization. If the person attends the Geriatric Yoga programme regularly, many problems, which are caused by age, can be prevented.^[14]
- It is possible to reload the most essential brain functions with the relaxing characteristic of Yoga.
- The person gains experience with his own existence, body and mental performance during the sessions in Yoga practices. He learns to control his body. He analyses his emotional status about his problem. He gains ability to cope with the symptoms faced.
- It reduces sympathetic activity with relaxing techniques. Pain, fatigue, depression and stress decrease with relaxing response. Memory becomes retentive.^[15]

Yoga has found a place as an alternative medicine approach within geriatric and rehabilitation programmes in developed countries in Europe and in the US owing to its countless beneficial effects and it has started to be practiced to improve physical health, to

inform, to cope with and to support in various supportive programmes; to help people on issues such as pain, fatigue, stress, nutrition, exercise, sleep and patient caring.^[16]

The following longevity promoting yogic practices should be performed only under the guidance of qualified Yoga therapist.

Asanas: Surya Namaskar, Pawanmuktasana, Ardha Matsyendrasana, Bhujangasana and Shavasana.

Pranayama: Nadisodhana, Kapalabhati, Bhramari, Neti, Bhastrika and Tratak.

Mudras: Khechari mudra removes diseases and old age problems.

Dharana, Dhyana, Swadhyaya and Iswara Pranidhana.

Rasayana therapy

Ayurvedic system of medicines specially incorporates rasayana tantra as one of the eight disciplines of ashtanga ayurveda, which is exclusively devoted to geriatrics health care. Rasayana is specialized procedure practiced in the form of rejuvenation measure, dietary regimen and health promoting methods. Rasayana therapy aims ultimately at the attainment of most excellent rasadi dhatu. Acharya Charaka describes that a person undergoing rasayana therapy attains longevity, improved memory, intelligence, freedom from diseases, youth, excellence of lustre, complexion and voice, optimum strength of physique and senses, command over language, respectability and brilliance.

Types of Rasayana

On the basis of the utility

1. **kamya rasayana:** Which is used in healthy person for further promotion of health. It is again of three subtypes.
 - a. **pranakamya** to promote longevity.
 - b. **srikamya** to promote body lustre.
 - c. **medhakamya** to promote mental competence.
2. **naimittika rasayana:** Which is used specially in the treatment of specific diseases ex. Shilajatu (asphaltum punjabinum) in prameha, arjuna (*terminalia arjuna*) in hridroga.

3. ajasrika rasayana: Which is used as a part of diet as milk, ghrita (ghee), madhu (honey) etc.

On the basis of method of use

- a. **vatatapika rasayana** i.e. outdoor regimen.
- b. **kutipravesika rasayana** i.e. intensive indoor regimen.

Concept of Rasayana (rejuvenation)

Rasayana has broad meaning indicating qualitative and quantitative improvement of dhatu (tissues). Vayasthapana are specialized rasayana drugs that reverse degenerative changes, increase life span with quality health.^[17] The main utility of Rasayana therapy is in functional and degenerative disorders that have a chronic or long-standing nature. In such cases, in fact, rasayana is the only solution from the point of view of effective management in any system of medicine. Rasayana becomes more fruitful and effective, if it is preceded with suitable Panchakarma (purificatory therapy). The reason we see mixed results in many cases where Rasayana is employed is because of the fact that, either this purification is not done or improperly done. Some evidence-based research

- ***Butea monosperma* root distillate in the management of age related immature cataract:** The root distillate drops of *Butea monosperma* developed as per I.P Standards has shown significant improvement in visual acuity and quality of vision (disturbance in vision viz haziness and diplopia) in the subjects of age related immature cataract (n=52).^[18]
- **Guduchi (*Tinospora cordifolia*) as immunomodulatory agent:** Clinical studies of Guduchi (*Tinospora cordifolia*) have shown significant efficacy in the cases of obstructive jaundice.
- **Sallaki (*Boswellia serrata*) in Rheumatoid Arthritis (RA):** Sallaki 600 mg trice daily and 50 mg of diclofenac sodium 3 times in a day were given in treated and control groups respectively for 4 weeks. The efficacy of sallaki was found to be comparable to that of diclofenac sodium in the patients of Rheumatoid Arthritis (RA), who demonstrated predisposition for gastric intolerance with anti-inflammatory medication.^[19]
- **Guggulu (*Commiphora wightii*) in hyperlipidemia:** Cardinal clinical manifestations of disease like precordial pain and dyspnoea were relieved in most of the cases in a clinical study tried with guggulu in the dose of 8 gm/day. Substantial fall in lipid fractions like

cholesterol 27%, triglycerides 36%, phospholipids 20% and free fatty acids 37% indicated the possibility of regression of atherosclerosis. The reversal of ECG changes substantiated the anti-ischaemic effect of the drug in the treatment of ischemic heart diseases.^[20]

- **Ashwagandha** (*Withania somnifera*) on the process of aging: Root powder of Ashwagandha (*Withania somnifera*) was administered in the dosage of two tablets three times daily with milk for one year showed statistically significant increase in haemoglobin, RBC count, hair melanin and seated stature and decrease in serum cholesterol and ESR.^[21]
- Management of hemiplegia by panchakarma: Comparative study of 744 hemiplegics revealed that 552 subjects who received Panchakarma therapy showed significant recovery from illness, with improvement in motor functions and quality of life in comparison to subjects who received Shamana therapy (palliative therapy) alone.^[22]
- **Multi-faceted protective role of Chyawanprasa:** Chyawanprasa showed significant immunomodulatory activity (decrease in Ig G, C3 and C4 levels in patients of recurrent cough and cold), cytoprotective action (cancer patients receiving radiation therapy showed a protective role against radiation induced tissue damage) and Geno protective action (significant reduction in Mitotic Index (MI) and Chromosomal Aberrations (CA)).^[23]
- **Anti-anxiety** effect Mandukaparni (*Centella asiatica*), Yastimadhu (*Glycyrrhiza glabra*) and Jatamansi (*Nardostachys jatamansi*): A double blind sequential cross over clinical trial with an Ayurvedic compound containing Mandukaparni (*Centella asiatica*), Yastimadhu (*Glycyrrhiza glabra*) and Jatamansi (*Nardostachys jatamansi*) as trial drug, diazepam as control and placebo was carried out on 12 patients of anxiety neurosis. The compound formulation is more effective in enhancing the perceptual discrimination and psychomotor performance over placebo and control drug.^[24]

Panchakarma in old age

Panchakarma is a purification method comprising of five main procedure that facilitates better bioavailability of the pharmacological therapies, helps to bring about homeostasis of body humours, cleansing of channels, eliminates the doshas from the body and stop the recurrence and progression of diseases. The five-fold measures comprehended in this therapy are vamana (emesis), virechana (purgation), asthapana basti (decoction enema), anuvasana basti (oil enema), nasya karma (nasal administration of medicaments). Prepurification

therapies i.e. snehana and swedana are the first ones applied to loosen the toxins, open up the circulation channels and get the body ready for discarding these wastes. These methods are highly relaxing for the body and mind. Vamana is also known as therapeutic vomiting. It is a treatment that eliminates the vitiated doshas (waste products) through the upper gastro-intestinal track. It expels and cleanses undigested food, kapha and pitta. Virechana-is intake of safe herbal medicines which eliminate the poisonous wastes through the anal route. This cleansing of the mid zone benefits the entire body system. Nasya is instillation of medicated oil through the nose. The excess humours accumulated in the human body are eliminated through nasya. It improves blood circulation and reduces nerve stretching and inflammatory pains in the head. In old age there is dominancy of vata dosha and main treatment of vata dosha is basti which is ace amongst all panchakarma treatment. In simple terms, basti means medicated enema. It washes out all toxins of body through the digestive track. As a rejuvenating health treatment, basti imparts high immunity and longevity, reduces degeneration of tissues and prevents ageing also the yapana basti, bruhana basti, shirobasti, shirodhara, pindasweda have effects in many neurodegenerative conditions which is common in old age.

Herbal drugs for diseases of old age

Some of the most common diseases of old age include arthritis, cataract, diabetes, dementia, depression, asthma, hypertension, cardiovascular disease, liver and kidney disease etc. more over impaired body function, delayed wound healing and susceptibility to infection are frequently observed in old age. Common medicinal plants used for these ailments are as follows-

1. Arjuna (*terminalia arjuna*), karveera (*nerium indicum*) as cardio protective in cases of ischemic heart disease.
2. Methika (*trigonella foenum-graecum*), haridra (*curcuma longa*) and karvellaka (*momordia charantia*) in diabetes.
3. Guduchi (*tinospora cordifolia*), shunthi (*zingiber officinale*) and lashun (*allium sativum*) in arthritis.
4. Brahmi (*bacopa monnieri*), shankhapushpi (*convolvulus pluricaulis*) and madhuyashti (*glycyrrhiza glabra*) in the treatment of senile dementias.
5. Varun (*crataeva nurvala*), gokshura (*tribulus terrestris*) in treatment of senile enlargement of prostate. Triphala (*emblica officinalis*, *terminalia bellirica* and *terminalia chebula*) in senile visual disorder.

6. Kapikachchu (*mucuna prurita*) in Parkinson's disease.

CONCLUSION

Due to increased elderly population, the prevalence of Geriatric specific disease conditions is also increasing. This is creating a big burden to the health care providers and the government. Hence development of new geriatric health care management strategies is the need of the hour. The cause of all *jarā janya vyādhi* is *dhātu kṣaya* which ultimately leads to the degenerative changes in the body. So, the principle line of management should be to reduce the *dhātu kṣaya* and to cope up with the degenerative changes. Ayurveda offers a wide range of therapies i.e. *rasāyana*, *panchakarma*, lifestyle changes, diet modification etc for the promotion of health of elderly. The rejuvenates and rehabilitative effects of *rasāyana* and *panchakarma* can be utilised in the field of geriatric health care. It is the duty of the young health care professionals to explore the Ayurveda classics and to create awareness about the strength of Ayurveda in geriatric care.

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