THE CONTEMPORARY STRENGTH OF AYURVEDIC GERIATRICS

Ram Harsh Singh
Dept. of Kayachikitsa, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi.
E-mail : rh_singh2001@yahoo.com

Abstract

Aging is an inevitable Swabhāva of living being which is hallmarked with involution of the organism manifesting with a set of biological features and incapacities. The old age is also frequently associated with preponderance of a set of illnesses specific to old age. As the incidence of elderly people is rising in the population world over including India, it is now felt necessary to develop newer strategies for Geriatric health care. Ayurveda has discussed the issues related to Geriatric care and has projected a special branch of medicine called ‘Rasāyana Tantra’ to promote longevity and good health through a range of life style measures, dietary care and use of rejuvenative remedies called Rasāyana. Ayurveda has a potential to contribute substantially to this newly emerging branch of Medicine.

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Key Words: Geriatrics, Rasayana, Pancha Karma, Ayurveda

INTRODUCTION

During last few decades there has been a noticeable rise in the average life expectancy of the people in India and now there is an obvious shift in the age distribution denoting population-aging. This has been overtly obvious in developed countries for several decades. Most demographers believe that a direct consequence of the ongoing global fertility decline and decline of mortality at elder ages is one of the most prominent global demographic trend of the 21st century which would influence the health status and socioeconomic pattern world-over. Population aging has been progressing rapidly in most of the industrialized countries of the world but certain developing countries like China and India where fertility decline started late are now experiencing significant increase in the proportion of their elderly people. This trend is expected to continue over the next few decades. Population aging has many important socioeconomic and health related consequences including the increase in the old-age dependency ratio presenting challenges for public health concerns as well as for economic development due to shrinking and aging of work and labor forces risking social security systems. The following table provides a reflection of the rate of population aging in terms of the percentage of elderly (>65 years) in the population of some major areas of the world (4-8).

<table>
<thead>
<tr>
<th>Countries / Regions</th>
<th>Year 1950</th>
<th>Year 2000</th>
<th>Year 2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>5.0</td>
<td>6.9</td>
<td>19.3</td>
</tr>
<tr>
<td>Africa</td>
<td>3.2</td>
<td>3.3</td>
<td>6.9</td>
</tr>
<tr>
<td>Latin America</td>
<td>3.7</td>
<td>5.4</td>
<td>16.9</td>
</tr>
<tr>
<td>China</td>
<td>4.5</td>
<td>6.9</td>
<td>22.7</td>
</tr>
<tr>
<td>India</td>
<td>3.3</td>
<td>5.0</td>
<td>14.8</td>
</tr>
<tr>
<td>Japan</td>
<td>4.9</td>
<td>17.2</td>
<td>36.4</td>
</tr>
<tr>
<td>Europe</td>
<td>8.2</td>
<td>14.7</td>
<td>29.2</td>
</tr>
<tr>
<td>USA</td>
<td>8.3</td>
<td>14.7</td>
<td>29.2</td>
</tr>
</tbody>
</table>

With the growing number of elderly individuals in today’s society the health problems of old age are becoming more and more overt. Accordingly Geriatrics is emerging as a major medical specialty world over. In India too the last decade has projected significantly rising rate of population-aging and hence a great need is now felt to strengthen the geriatric care system in this fast developing most populous country of the World. Conventional system of medicine has nothing much to offer in the core area of geriatric care except the medical management of the diseases of old age.

On the contrary, Ayurveda is essentially the science of life and longevity. It presents a sound concept of aging, its prevention and management. Ayurveda specially
incorporates Rasāyana Tantra as one of its Asāṅga specialties, which is exclusively devoted to nutrition, immunology and geriatrics. The present review intends to evaluate the ancient concepts and recent developments in the field of geriatric care in Ayurveda.

THE DIMENSIONS OF GERIATRIC CARE

Geriatric Care has two distinct dimensions, No. 1. Promotion of health and longevity, No. 2. Management of diseases of old age. The conventional modern medicine is apparently strong in terms of the second dimension, although the final outcome may not be significant because most of the diseases of old age are incurable. Ayurveda is notably strong in terms of the first dimension of the problem as it has rich potential to promote health of the elderly, besides the scope of rejuvenation and promotion of longevity. As stated earlier Ayurveda is essentially the Science of life and longevity. The foremost classic of Ayurveda, the Caraka Samhitā begins its deliberations in its very first chapter with Deerghanjīvitiya Adhyāya.

THE PHENOMENON OF AGING

Aging is essentially a physiological phenomenon which results because of overwhelming of inherent evolutionary processes by the involutionary changes occurring in the mind-body system. Such changes begin right in the beginning of life and get more and more overt with advancing chronological age. The progressing involution ultimately precipitates into extreme senescence and finally death. Thus life-span is a time-bound entity and everybody is mortal. The main issue in geriatric care is not merely the concern about the physiological phenomenon which is inevitable, rather it is more the medical health problems and diseases specifically afflicting an individual in old age warranting medical management in order to sustain a comfortable and healthy aging. Thus geriatric care has to address to two-fold problems, firstly the basic anti-aging care to retard the rate of physiological aging and secondly the medical management of diseases and disorders specifically occurring in old age such as hypertension, ischaemic heart disease, diabetes, senile dementia, Alzheimer’s disease, parkinsonism, degenerative arthritides, osteoporosis, opportunistic infections, prostatic enlargement, degenerative eye diseases like cataract, a range of angiopathies, neurodegenerative diseases and senile psychoses which cause major morbidity in old age.

Ayurveda, being fundamentally the science of life and longevity, seems to have addressed these issues in an unique holistic manner involving not merely the biological care, rather also encompassing the psychosocial and spiritual dimensions. There are strong possibilities to develop a safe and cost-effective package for geriatric care on the basis of Ayurvedic life-style management, Rasayana therapy and practice of yoga.

As stated above, aging is an inevitable physiological process. Why senile changes occur in the mind-body system, is not yet clearly known. Ayurveda considers aging as the Swabhāva of life. In other words senescence is the Swabhāva or inherent nature of the living being, because the life is time-bound and it is inherently mortal. Ayurveda believes that aging occurs only in the body and mind, not in the real essence of the life, i.e. its conscious component which is eternal and it only changes the body which is created by the Nature for one life-span and ends there after through aging and death. Ayurveda considers Aging as the Jaivika Swabhāwa i.e. biological nature of the living being and believes in the natural cycle of birth-senescence-death-rebirth as the very destiny of life. Hence what all is needed is to retard the rate of aging to a limited extent and to promote healthy aging. The Vedas too pray for a healthy long life of hundred years – ‘Jīvem saradaḥ śatam, Paśyem saradaḥ śatam’ and so on.

Western biosciences have been trying hard to identify the causes of aging. A number of theories and observations have been projected such as genetic theory of aging, immunological theory, stress theory, free radical injury, hormonal involution theory etc but none of these have yet been proved. However, these researches obviously indicate that aging is a multifactorial phenomenon. The genomic and immune mechanisms seem to be the sheet anchors. The following table enlists various modern theories of Aging.

Table 2: Various Contemporary Theories of Aging

| 1. The Wear and Tear Theory |
| 2. The Neuroendocrine Theory |
3. The Genetic Control Theory  
4. The Free Radical Theory  
5. Waste Accumulation Theory  
6. Limited number of Cell Division Theory  
7. Hayflick Limit Theory  
8. Death Hormone Theory (DECO)  
9. Thymic –Stimulating Theory  
10. Mitochondrial Theory  
11. Errors and Repairs Theory  
12. Redundant DNA Theory  
13. Cross Linkage Theory  
14. Autoimmune Theory  
15. Caloric Restriction Theory  
16. Gene Mutation Theory  
17. The Rate of Living Theory  
18. The Telomerase Theory  

Thus till date there is no fundamental contradiction between east and the west except the philosophy of time-bound life and rebirth and the splendid speculations about life beyond death in oriental traditions.

According to Ayurveda aging and death are the Swabhāva of life. However, a long healthy life has been the cherished wish of all beings, in all cultures and traditions. Hence tremendous attempts have been made to prolong life and to sustain healthy aging. Ayurveda links the phenomenon of biological aging with the doctrine of Tridoṣa. In principles the childhood is embedded with Kapha in the body, adulthood with Pitta and old age with Vāta Doṣa. Vāta Doṣa, by nature, dries and decays the body and produces senile changes. Thus the phenomenon of aging can be evaluated in terms of the tridosika physiology, and aging can be managed in tune with the Tridoṣa theory with Yukti of Samanya and Visesa i.e. homology versus heterology besides specific rejuvenative Rasāyana measures (2,19-21).

The important medieval Laghuttrayī text of Ayurveda, namely Śarangadhara Samhitā describes the process of aging depicting the involutionary features of specific bio-losses occurring during different decades of life due to aging (9,16,21). These descriptions are relevant even today if the chronology is corrected with present life-span of man (1). This is specially significant because it can provide a guideline for selection of age-specific organ-protective Rasāyanas to restore the age-related biolosses during different decades of the life span as a measure to retard aging. Few examples are cited in the following table.

Table 3: Sequential bio-losses during aging & restorative Rasāyanas

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Decades</th>
<th>Age related bio-losses</th>
<th>Restorative Rasayanas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0-10</td>
<td>Loss of Corpulence</td>
<td>Vaca, Gambhari</td>
</tr>
<tr>
<td>2</td>
<td>11-20</td>
<td>Loss of Growth</td>
<td>Amalaki, Balā</td>
</tr>
<tr>
<td>3</td>
<td>21-30</td>
<td>Loss of Lusture</td>
<td>Haridrā, Kumāri, Louha</td>
</tr>
<tr>
<td>4</td>
<td>31-40</td>
<td>Loss of Intellect</td>
<td>Śankhapuspi, Brāhmī</td>
</tr>
<tr>
<td>5</td>
<td>41-50</td>
<td>Loss of Skin glow</td>
<td>Kumāri, Somarājī</td>
</tr>
<tr>
<td>6</td>
<td>51-60</td>
<td>Loss of Vision</td>
<td>Triphalā, Jyotiṣmatī</td>
</tr>
<tr>
<td>7</td>
<td>61-70</td>
<td>Loss of Virility</td>
<td>Kapikacchu, Aśwagandhā</td>
</tr>
<tr>
<td>8</td>
<td>71-80</td>
<td>Loss of Strength</td>
<td>Amalaki, Balā, Pravala</td>
</tr>
<tr>
<td>9</td>
<td>81-90</td>
<td>Loss of Cognitive power</td>
<td>Brāhmī, Maṇḍukaparṇi</td>
</tr>
<tr>
<td>10</td>
<td>91-100</td>
<td>Loss of Locomotive ability</td>
<td>Amalaki, Balā, Aśwagandhā</td>
</tr>
</tbody>
</table>

Other important features of aging process are weakening of Agni, loss of integrity of Srotāmsi and ojabala. Hence geriatric care warrants management of Agni, Āma and Oja doṣa2 at biological level. Ayurvedic classics propound an unique concept of Ojas which is the essence of all Dhatus.3 It is of two types namely 1. Para-ojas which is in minute quantity located in the heart and is vital for life; if Para-ojas is hurt, instantaneous death follows. 2. Apara-ojas which is relatively gross, is spread all over the body and is generally responsible for immune strength or Ojabala. Ojabala is considered to be of three categories,4 viz. 1. Sahajabala or primary natural immunity, 2. Kālajabala or acquired natural immunity, 3. Yuktikṛta or artificially induced immunity.

In Ayurveda Ojabala forms an important consideration in the process of aging. Besides many other life-style related factors the generic remedy prescribed for promoting Ojas...
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status is Rasāyana therapy. All Rasāyanas are beloved to promote ojas.

BRAIN AGING AND MEDHYA RASĀYANA:

In the context of aging the brain happens to be an important consideration. Besides general features of biological aging which occurs all over the body in all organs, tissues and cells, the brain seems to be the major focus of such changes. This is why the mental and neurological manifestations often form the hallmark of senility. Accordingly the care of neurodegenerative manifestations warrants the first attention in geriatric health care. Ayurveda seems to have understood this fact and has categorically described the psyche-brain deficit occurring in the fourth and ninth decades of the hundred years life-span in terms of loss of Medhā and Buddhi.

In terms of the science of today human brain is a highly sophisticated structure, its basic functioning units – the neurons are known to be energetically most powerful units but have extremely poor repair and regeneration potential and hence are prone to rapid senescence and degenerative changes.

The Ayurvedic classics and yogic texts describe a set of rejuvenative measures to impart biological sustenance of the bodily tissues, i.e. the Dhātuś. These remedies are called Rasayana and are claimed to act as micronutrients. Though, the Rasāyanas are generic rejuvenative remedies, some of them are specific to Brain and nervous system and are called Medhya Rasāyana. Certain recent scientific studies have revealed that Medhya remedies of Ayurveda could prove to be a potential source for developing a new class of neuronutrients with cognition and memory enhancing, antiaging and neuro-regenerative effect. Studies on Brāhmī (B. monniera), Maṇḍukaparnī (C. asiatica) and Aśwagandhā (W. somnifera) are interesting.

Ayurveda considers aging as an inbuilt natural disorder. Śārangadhāra (1300 AD) while describing the sequence of aging suggests that Medhā, i.e. intellect stops growing by Fourth decade of life and Buddhi, i.e. thinking is lost by Ninth decade reading to senile dementia in a person of stipulated 100 years life span.

Brāhmī (B.monniera) is now established as a memory enhancer and has therapeutic role in the management of aging brain and senile dementia. Maṇḍukaparnī (C. asiatica) is now used in the care of mental retardation and probably helps mentally retarded children as a neuronutraceutical and as a remedy presumably acting through Srotopromoting effect and enhance cerebral blood flow. Aśwagandhā (W. somnifera) is an established antistress and adaptogen besides its efficacy in augmenting neuro-regeneration. Tomoharn Kuboyama et. al. (2005) reported neuritic regeneration and synoptic reconstruction induced by withanolide-A isolated from Aśwagandhā. All these studies open newer vistas of investigation in Neuroscience of today particularly in the area of Neuronutrition.

THE RASĀYANA THERAPY AND ITS MODE OF ACTION:

Rasāyana (Rasa = nutrition + Ayana = circulation and promotion) specially deals with the science of nutrition, geriatric care and rejuvenation. Rasāyana signifies not a single drug or medication, rather refers to a rejuvenative regimen which of course uses rejuvenative remedies or drugs, dietetics and overall healthy life-style and positive psychosocial conduct. The use of Rasāyana measures and remedies produces best qualities of Dhātuś, i.e. body-tissues by acting through one or all of the following three principal levels of biological system with net result of improved nutritional status leading, in turn, to better qualities of tissues, longevity, immunity, resistance against disease and improved mental faculties. The primary levels/modes of Rasāyana effect are (3,11,16-18):

1. At the level of Rasa (Promoting directly the nutrient value of plasma),
2. At the level of Agni (Promoting biofire system responsible for digestion and metabolism)
3. At the level of Srotas (Promoting microcirculation and tissue perfusion)
CLASSIFICATION OF RASAYANA:

1. As per scope of use:
   (A) Kāmya Rasāyana - which is used in healthy persons for further promotion of health. It is again of three subtypes:
      (i) Prāṇa kāmya to promote longevity.
      (ii) Srikāmya to promote body luster.
      (iii) Medhā kāmya to promote mental competence
   (B) Naimittika Rasāyana which is used specifically in the treatment of specific diseases viz Śilājatu in diabetes mellitus.

2. As per method of use:
   (i) Vātātapika Rasāyana i.e. outdoor regimen.
   (ii) Kuṭiprāveśika Rasāyana i.e. intensive indoor regimen including biopurification by Pancakarma and consumption of selected Rasāyana in well controlled conditions.

3. As part of life-style:
   (i) Ājasrka Rasāyana as content of daily diet.
   (ii) Ācāra Rasāyana i.e. rejuvenative healthy life style and conduct.
   (iii) Divya Rasāyana i.e. divine Rasāyana

TISSUE AND ORGAN SPECIFIC RASAYANA:

Besides the above mentioned three generic modes of action of Rasāyana, some Rasāyanas are organ and tissue specific and are used for specific indications like Medhya Rasāyana as brain tonics, Hydya Rasāyana as cardiotonics, Vṛṣya Rasāyana as sex tonics, Twacya Rasāyana as skin tonics, Stānya Rasāyana as lactogenic tonics, Keśya Rasāyana as hair tonics, Caksuṣya Rasāyana as eye tonics, Kanṭhya Rasāyana as tonics for throat and speech and so on.

DISEASE SPECIFIC RASAYANA:

Some Rasāyanas are also disease-specific and are used in specific disease states as they induce specific immune and bio-strength to combat a particular disease. Such Rasāyanas are called Naimittika Rasāyana. The classical Naimittika Rasāyanas are Śilājatu for diabetes mellitus and Tubaraka for skin diseases and leprosy. There can be many other Naimittika Rasāyanas identifiable by proper yukti.

AGE SPECIFIC RASAYANA:

Some Rasāyanas are also age-specific and can be prescribed for particular age groups. As stated earlier Ayurveda describes the qualities of each decade of the 100 years of estimated life-span. During the process of aging an individual goes on loosing these age-related bio-qualities and if this loss is compensated by age-specific Rasāyana in specific age groups the rate of aging can be retarded to some extent and one can promote longevity. The decade-wise bio-losses described by Śārangdhara and Vāgbhaṭṭa are as mentioned earlier in table-3 with suggested Rasāyana remedies to compensate the losses.

METHOD OF ADMINISTRATION OF RASAYANA

The Rasāyana therapy is administered in two broad forms with two main objectives. Firstly as outdoor regimen (Vātātapika Rasāyana) for ordinary routine Rasāyana benefits as a tonic or food supplement. Secondly as an intensive indoor regimen (Kuṭiprāveśika Rasāyana) for Rejuvenation or Kāyākalpa, where the patient is confined in a specially designed Trigarbhā Rasāyana Kuṭi i.e. a well protected therapy chamber.
equipped with all therapeutic amenities. In the latter case the patient first undergoes a biopurification therapy by Panca Karma (15). After Panca Karma he consumes the suitably chosen Rasāyana for him in a prescribed dose and duration along with the prescribed dietetics (Ājasrika Rasāyana) and the appropriate life-style and conduct (Ācāra Rasāyana). Rasāyana administered without proper biopurification and without the Ājasrika and Ācāra requirements, may not yield adequate results.

The main Rasāyana drug/remedy is prescribed for a client/patient in consideration of a range of factors viz.

1. Age and rate of aging in consideration of the ten sequential bio-losses related to different decades of 100 years life span as mentioned earlier in table 3.
2. Prakṛti or constitution i.e. Doṣa Prakṛti, Mānas Prakṛti
3. Sāmya or Adaptability in relation of the Deśa and Kāla i.e. climate, season and weather.
4. Disease state - The Tridosika nature of the accompanying disease, if any, in consideration of a suitable Naimittika Rasāyana.

5. Physiological considerations, particularly the state of Dhātuṣ, Ojas, Agni and Agni Bala.

The Rasāyana Effect and Rejuvenation

The Rasāyana remedies described in Ayurveda are claimed to possess special nutritional supplement effect. Generally most of the Rasāyanas are micromolecular nutrients and they act through nutrition dynamics and not really on pharmacodynamics like other drugs. The Rasāyana drugs are likely to be nutrient tonics, anti-oxidants, anti-stress, adaptogen and immuno-modulators. The net effect of all these attributes is the anti-aging effect. Certain recent studies on popular Rasāyana remedies like Āmalaki, Aśwagandhā, Gudūci, Brāhmi and classical compound Rasāyana Cyavanaprāśa have shown evidence to suggest their efficacy as anti-aging remedies. The following tables are being reproduced from earlier studies to give a glimpse of such an evidence about some popular Rasāyana drugs like Aśwagandhā, Tulasi and Ginsen (1,3,10).

Table 4. Anti-stress activity of some Rasāyanas in terms of Ed 50 in stressed rats, Singh N 1987

<table>
<thead>
<tr>
<th>Drugs Tested</th>
<th>Swimming performance Adrenal wt.</th>
<th>Prevention of Ascorbic acid rise</th>
<th>Prevention of Adrenal cortisol rise</th>
<th>Prevention of stress ulcers</th>
<th>Antistress unit mg/g</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aśwagandhā</td>
<td>15.0±1.3</td>
<td>13.0±1.4</td>
<td>14.5±1.5</td>
<td>16.0±1.8</td>
<td>14.9±1.5</td>
</tr>
<tr>
<td>Tulasi</td>
<td>13.3±1.2</td>
<td>12.0±1.6</td>
<td>13.0±1.5</td>
<td>13.4±2.0</td>
<td>13.7±1.3</td>
</tr>
<tr>
<td>P. ginsen</td>
<td>44.0±3.8</td>
<td>15.0±1.8</td>
<td>24.1±2.1</td>
<td>24.07±2.2</td>
<td>25.2±2.3</td>
</tr>
</tbody>
</table>

Table 5. Effect of Aśwagandhā on plasma corticosterone, phagocytic Index and swimming endurance under normal and stress conditions (Archana 1999)

<table>
<thead>
<tr>
<th>Observations Mean ± SE</th>
<th>Control</th>
<th>Aśwagandhā treated</th>
<th>Stress (Swimming)</th>
<th>Swimming Stress + Aśwagandhā</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plasma Corticosterone µg/dl</td>
<td>98.95±0.51</td>
<td>98.95±0.27</td>
<td>107.2±0.38</td>
<td>99.77±0.14 p&lt;0.05</td>
</tr>
<tr>
<td>Phagocytic Index</td>
<td>68.50±0.56</td>
<td>69.60±0.70</td>
<td>78.0±0.58</td>
<td>68.83±1.20 p&lt;0.05</td>
</tr>
<tr>
<td>Total Swim Time</td>
<td>-</td>
<td>-</td>
<td>5.30±0.2</td>
<td>48.90±0.50 p&lt;0.05</td>
</tr>
</tbody>
</table>
Table 6. Biological Age Scale (BAS) and Brief Psychiatric Rating Scale (BPRS) Scores before and after treatment with Aśwagandhā (Dwivedi and Singh, 1997)

<table>
<thead>
<tr>
<th>Observations</th>
<th>Before Treatment</th>
<th>After Treatment</th>
<th>t</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total BAS Scores</td>
<td>18.77± 4.55</td>
<td>14.20± 4.37</td>
<td>2.92</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Total PBRS Scores</td>
<td>32.40± 5.22</td>
<td>22.93± 2.86</td>
<td>6.12</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>

The above cited observations indicate that the Rasāyana drug Aśwagandhā has significant anti-stress effect on notably lower effective dose (Ed50) as compared to popular Chinese herbal tonic Ginsen. Aśwagandhā also shows relevant humoral basis for its anti-stress and anti-inflammatory effect. The clinical trial of Aśwagandhā in elderly volunteers shows significant reduction in the rate of Biological Aging (BAS) and mental health status as measured by BPRS (Table 4-6). There are several such studies conducted on many Rasāyana drugs.

**Geriatric Panchakarma Therapy**

Ayurveda practices an unique approach of biopurificatory therapy designed to cleanse the Srotamsi i.e. the micro channels of the body enabling the organism to function normally and also to restore the inner transport system resulting in turn to better nutritional status with adequate chances of repair of wear and tear of the body with rejuvenative activity. In geriatric practice an Ayurvedic physician uses selective rehabilitative Panchkarma therapy avoiding the drastic evacuatory practices like Vamana and strong Virechana procedures. The schedule in the elderly should consist of medicated massage, sudation, Kayaseka, Pindasweda, Śirodhārā and Brimhaṇa Basti suitably planned for each individual. Such a package could appropriately considered ‘Geriatric Pancakarma’.

**Ayurvedic Management of Diseases of Old Age**

Besides the rejuvenative approaches Ayurveda has notable potential to afford significant complementary therapeutic care in a range of diseases of the elderly and the same needs to be known to the practicing physicians of all streams. Arjuna, Guggulu and Puṣkarmula as cardioprotectives in cases of Ischaemic heart disease, Brāhmi and similar other Medhya drugs in treatment of senile dementias, Varuṇa and Śīgru in treatment of senile enlargement of Prostate, Triphalā in senile visual disorders, Kapikacchu in treatment of Parkinsons disease, Amritā and Āmalaki in immunodeficiency, Śirodhārā and Śirobasti in tension headaches and different kinds of neurodegenerative conditions are some of the potential areas where Ayurvedic treatment has promise. Similarly the Pindaśweda procedure of Keraliya Panchkarma therapy is known for its rehabilitative effect in many neurodegenerative conditions and myopathies.

**A Suggested Package of Geriatric Care**

The Ayurveda-based package of geriatric care may consist of:

1. Recording of the Prakṛti, Vaya, Agni & Ojas status, Deśa-Kāla, Vyādhi and overall health status to help in planning the geriatric care.
2. Svasthavṛttā & Sadvṛttā i.e. codes of personal and social hygiene.
3. Dietary care avoiding too much of fat and heavy proteins preferring easily digestible nourishing sāttvika diet.
4. Regular exercise according to Vyāyama-śakti.
5. Regulated rest and relaxation
6. Yoga and meditation
7. Geriatric Panca karma Therapy.
8. Rasāyana therapy prescribed in consideration of individual needs considering the findings recorded under item 1 mentioned above.
9. Medical management of associated age-related diseases if any.
10. Supportive therapy and socio-economic support and care of social and spiritual health.

**COMMENTS AND CONCLUSIONS**

Population-Aging and the increasing number of elders in the population is a matter of great significance because of its likely impact on public health and socioeconomic growth of a nation. Ayurveda, being the
science of life and longevity, offers a treasure of geriatric care (12-14). It deliberates on the science and philosophy of life and longevity with the goal of healthy aging and long life to achieve the Purusārtha catuṣṭaya - Dharma, Artha, Kāma, Mokṣa. It considers aging as Swabhāva of life and describes in details the pattern of sequential losses of biological strength with advancing age in relation to the doctrine of Tridoṣa and advocates the management of aging and diseases of aging on principles of Śāmānya and Viśeṣa (Homology versus Heterology). The central focus of strength of Ayurveda in geriatric care swings around the concept of Rasāyana therapy which compensates the age-related biological losses in the mind-body system and affords rejuvenative effect to a notable extent. Combining Ayurvedic Rasāyana, rehabilitative Panchkarma therapy dietetics, Swasthavṛtta, Sadvṛtta, Yoga and spirituality it is possible to develop an effective package for geriatric care today for global use. There is a need to generate awareness among the masses about the consequences of Population-Aging and about the strength of Ayurveda in Geriatric health care. It is a matter of great satisfaction that the Department of AYUSH, Ministry of Health and FW, Govt. of India has launched a national campaign to popularize the strength of Ayurveda, Siddha and Yoga in geriatric health care.

REFERENCES:

9. Śārangadhara (1300 AD), Śārangadhara Samhitā Part II Chapter 6, vs. 20.


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