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GERIATRIC CARE – AN INTEGRAL APPROACH

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ABSRACT
'*Jaraa Vyadhi*' in *Ayurveda* is a natural phenomenon (*Swabhavika*). *Acharya Susrutha* has categorized *Jara* as *Swabhava Pravrittha Vyaadhi*. *Rasayana* therapy is specifically advocated for the management of *Jaraa Vyadhi*, and it is defined as a *Jaraa Vyadhi Vidhwamsaka* (medicine/procedure that overwhelms /destroys *Jaraa Vyadhi*). With the raise of geriatric population and increase in metabolic diseases Geriatric management is emerging as a challenging problem of 21st century, which is not only medical but is also a sociological problem. Both physiological as well as morphological changes occurring in an elderly individual. The metabolic and catabolic activities of different cell/tissue/genes encompasses the physiological changes whereas the reaction or ensuing of metabolic and catabolic activities are the morphological changes. The significant raise in diseases in Geriatrics population is the motive for emerging of geriatrics as a major medical specialty worldwide. There is a great need for development of geriatric care system. Conventional system offers the medical management of the diseases of old age under geriatric system. On the contrary, *Ayurveda* is fundamentally the science of life, and presents a comprehensive theory of aging, its prevention and management. *Rasayana Tantra* is exclusively dedicated for nutrition, immunology and geriatrics care. This paper intends to review the present and classical literature on geriatric care with recent developments.

KEYWORDS: *Jaraa Vyadhi*, geriatric care, Aging, *Rasayana*, *vayahsthambhana.*

INTRODUCTION
The word Geriatrics is derived from a Greek word; *geron* (means old man) and *iatros* (means healer). Geriatrics means healing of old age related diseases. *Ayurveda* gives prodigious importance for Geriatric diseases and its management. *Jaraa Chikitsa* among *Astanga Ayurveda* Deals wholly with geriatric care. *Ayurveda Shastra* allocates Life span into *Balya Avatha* (0-30), *Madhyama Avastha* (31-60) and *Jeerna Avastha* (60-100).[1] Geriatric care addresses two-fold problems, primarily the basic anti-aging care to retard the rate of physiological aging & secondly the medical management of diseases and disorders specifically occurring in old age such as Hypertension, Ischemic Heart disease, Diabetes, Senile Dementia, Alzheimer‟s disease, Parkinsonism, Degenerative Arthritis, Osteoporosis, opportunistic infections, Prostatic enlargement, Degenerative Eye diseases, Cataract, a range of Angiopathies, Neurodegenerative diseases & Senile Psychosis which cause major morbidity in old-age. Elderly are a vulnerable group for non-communicable diseases, which are a risk factors for increased mortality rate.

Ayurveda, being fundamentally the science of life & longevity, deals with the management of *Jaraa Avastha* and *Jaraa Vyadhi* in a holistic and multi-dimensional approach. *Jaraa Chikitsa* is not merely a biological ageing management, rather bestows psych-somatic and spiritual wellness. *Ayurveda* contributes an adequate information for the management of *Jaraa Avastha*. A safe and cost-effective package can be developed for geriatric care on the basis of *Ayurvedic* life-style management. *Rasayana* therapy and practice of *Yoga* helps in better geriatric care through *Ayurveda*.

COMMON HEALTH GLITCHES OF ELDERLY
In present era metabolic disorders has also been prevailing in addition to physiological age related degenerative disorder in old age. *Ayurveda* in a holistic way primarily aims at management of healthy status of healthy individual and bestowing health for individuals suffering from disease.[2] (*swasthasya swasthya rakshanam, athurasya vikara prashamanam).* Following are the status and details of common health hazards in elderly population.

Cardiovascular diseases (CVD): In India, the cardiovascular diseases accounted for an estimated 1.4 million deaths in 2004 and it is likely to be 2.1 million in 2021. An estimated 6.7 million people were hospitalized for cardiovascular diseases in 2004, and projected to be 10.9 million by 2021.[3] The risk factors of CVD are Hypertension, Diabetes Mellitus, Dyslipidemia, Smoking, Premature Atherosclerosis and Genetic factor or Family history. Adaptation of *Ayurvedic* lifestyle, Regular *Rtukta Shodhana* and *Rasayana chikitsa* helps in metabolic correction and maintains cardiac health.

Hypertension: High blood pressure is ranked as the third most important risk factor for attributable burden of disease in south Asia (2010).[4] In an analysis of worldwide data for the global burden of HTN, 20.6% of Indian men and 20.9% of Indian women were suffering from HTN in 2005. The rates for HTN in percentage are projected to go up to 22.9 and 23.6 for Indian men and women, respectively by 2025.[5] According to the Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure (JNC-7), hypertension affects more than two-thirds of individuals aged 65 years and above.[6] Hypertension is a variable risk factor for major diseases like cardiovascular disease, cerebro vascular diseases etc. thus early management of hypertension can be a contribution in managing later complications.

Diabetes: In 2011 census, 5.3% of the Indian population was > 65 years of age. This number has steadily grown over past few years and is steeply growing. Healthcare burden of elderly diabetics is immense and proper diagnosis and treatment alone can prevent further complications.[7] DM today affects over 50 million people in the world and about one half of them are living in the developing world. The prevalence of diabetes mellitus (DM) increases with age. In India, 20% of the elderly population has DM.[8] The prevalence rate of diabetes among the elderly is higher in urban area compared to rural elderly. Older adults with diabetes have the highest rates of major lower-extremity amputation, myocardial infarction (MI), visual impairment, and end-stage renal disease of any age-group.[9] The high prevalence of elderly diabetics, i.e., 30.42%, in our set up is probably due to higher rates of detection, ethnicity, lifestyle, and obesity.[10] Accordingly it can be considered that proper care of food and lifestyle has a major contribution in avoiding diabetes mellitus in old age.

Gastro Intestinal diseases: With the advancement of age gastro intestinal disorders such as lack of appetite, indigestion sluggish bowel activities, or disturbed bowel activities, reflux esophagitis, etc are common. This are due to reduced motor activities and motor functions. Lack of nutrition is also a common problem due to deficiency of essential nutrients like folic acid and vitamin B2. Smoking, alcohol consumption emotional and mental disturbances adds as a precipitating factor for gastro intestinal disorders.

Mental Health: Alzheimer's disease (AD) and other forms of dementia are a growing public health problem among the elderly in developing countries, whose aging population is increasing rapidly.[11] Depression, dementia, schizophrenia and anxiety are some of the commonly found mental morbidity in elderly population. This can also be managed adequately with herbal and herbo-mineral medications.

Nutrition: Elderly population, belonging to low socio economic cluster are at a higher risk of poor dietary intake. Vital nutrients such as calcium and iron, vitamin A, B and B2 when insufficiently supplied lead to cause for many diseases, thus Energizers and restoratives can be beneficial. *Rasayana Chikitsa* helps in fulfilling the nutritional requirement and also increasing the bio availability.

Adaptation of *Ayurvedic* food habit, *Dinacharya*, *Rtucharya*, *Rtukta Shodhana* and *Rasayana chikitsa* aids in metabolic correction and maintains well-being.

Ayurveda and Geriatrics

Ayurveda explains *Jaraa Chikitsa* among *Astanga Ayurveda*, which deals with health promoting measures of geriatric population. *Ayurveda* gives significance to geriatrics and is called "*Vridopacharyaneeyam*". During *Vriddha Avastha* the *Sapta Dhatus* get deteriorated and can be protected and rejuvenated with *Rasayana* and *Jaraa Chikitsa*.

The Modern Concept of Geriatric

Aging is a progressive production of homeostatic reserve of organ system. This decline often referred Homeostenosis, is apparent by third decade and is gradually progressive. The descent of each organ system leads to further change of other organ system with the influence of diet, environment, and individual conducts in addition to hereditary factors.

The Phenomenon of Aging

The process of Aging is an inevitable physiological process, the root cause of which is anonymous. Aging according to *Ayurveda* is a natural phenomenon (*Swabhava*). It is also elucidated in *Ayurveda* that *Jaraa* and *Mruthyu* can distress the *shareera* and not the *Atma* (consciousness/Soul). Present Scientist have presented several theories and observations on ageing such as free radical theory, immunological theory, genetic theory, stress theory, hormonal involution theory etc. Thus indicated that ageing is a multifactorial phenomenon with immune and genomic mechanism.

Ayurveda Shastra explains the association of *Tridoshas* with Ageing. According to which *Kapha Dosha* is predominant during childhood (*Balavastha*), whereas *pitta* and *vata* are predominant in Middle age (*Madyavastha*) and oldage (*vridhhavasha*) respectively.

Vata dosha (*Gunatah*) by nature possesses *Laghu*, *Ruksha*, *Khara*, *Sukshma* and *Chala* properties[12] and aids in senile changes during *Vriddha Avastha*. Hence understanding the phenomenon of aging with the *tridoshika* physiology, and management of ageing with the *Tridosa* theory by adopting *yukti* with respect to *Samanya* and *Vishesha Siddhartha* (homology versus heterology) will be fruitful. In addition to *tridoshik* management specific rejuvenative therapies (*Rasayana Chikitsa*) will help in furtherance. Other important challenges of aging process (*Jaraa Avastha*) are *Agni Mandhya* (low metabolic rate), low *Ojas* and *Rogi Bala*. Geriatric care through endorses management of *Agni*, *Ama dosha* and *Oja bala* at biological level.

RASAYANA THERAPY

Rasayana comprises of two words *Rasa* and *Ayana*, *Rasa* means that which get transferred every day and *Ayana* means circulation. *Acharya Chakrapani* explains *Rasayana* as a therapy that cures *Vyadhi* (diseases) and *Jaraa* (ageing).[13] *Acharya Sushrutha* defined *Rasayana* as the one which does the *vayasthambhana* (stops aging), *medhya* (tunes brain functions) & *Balakara* (provides strength), also it helps in curing of diseases. Commentators further explained that one who consumes the *Rasayana* he will stay healthy for hundred years i.e person indulging in *Rasayana* is bestowed with good health and longitivity.[14] *Rasayana* specially deals with the science of rejuvenation and geriatric care. *Rasayana* is not merely a medication with single drug or formulation, rather refers to a rejuvenative regimen which encompasses dietetics, lifestyle, mental wellbeing, social conduct, *Panchakarma* and medications. "*Rasayana Chikitsa*" is a specialization among *Astanga Ayurveda* which aims towards promotion and preservation of wellness by enhancing immunity and refining metabolism. Many *Acharya's* explained *Rasayana* in their own way ultimately represented rejuvenation of body in terms of stopping the aging and treating the deep rooted disease.[15]

Effect of *Rasayana* can be observed at different levels such as: 1) **At the level of *Rasa*** (Helps in promoting *Rasadi Saptha Dhatus*), 2) **At the level of *Agni*** (helps Maintain and precise digestion and metabolism), 3) **At the level of *Srotas***(enhances the circulation and absorption of nutrients and also increases the bioavailability).

Classification of *Rasayana*:[16] *Rasayana* can be variously classified on the bases of use, method of administration and mode of action.

A. <u>As per scope of use:</u>

1. *Kamya Rasayana*- Promotor of normal health
   a. *Pranakamya*- Promotor of vitality and longevity of life.
   b. *Medhakamya*- Promotor of intelligence.
   c. *Srikamya*- Promotor of complexion
2. *Naimittika Rasayana*- Promotes the vitality in specific disease eg. *Shilajith* in Diabetes &*Tuvaraka* in skin diseases.

B. As per method of Use

1. *Vatatapika Rasayana*- Out door regimen
2. *Kutipraveshika Rasayana*- Indoor Regimen, including bio-purification by *Panchakarma* and consumption of selected *Rasayana*

C. As part of life-style

1. *Ajasrika Rasayana* (Dietary *Rasayana*) as content of daily diet.
2. *Acara Rasayana* (good conduct of *Rasayana*) ie; Rejuvenative healthy life-style.
3. *Ousadha Rasayana* - Drug *Rasayana* ie; *Shilajith Rasayana*, *Brahma Rasayana* etc.

Administration of *Rasayana*: *Rasayana Chikitsa* is advocated only after proper analysis of following factors:

- *Prakruthi*: Both *Shareera* and *Manasa Prakruthi* should be examined.
- *Vayah*: Age is an important factor as considerate importance much be laid for the ten sequential loss at different decades in life span.
- *Satva*: *Manasa Bala* also plays important role during *Rasayana Chikitsa*.
- *Satmya*: Adaptability with respect to *Desha Kala* also play key role in *Rasayana*.
- *Ojas*: Though *Rasayana* is *oujaskara Chikitsa* it is important to examine the status of *Bala*, of the person prior to the Chikitsa.
- *Agni*: *Agni* refers to the complete metabolic activity and for proper channelizing of treatment process adequate action of *Agni* is vital.
- *Dosha Avastha*/*Vyadhi Avastha*: Understanding the current status of *dosha* and *Vyadhi* helps in precisely channelizing *Rasayana Chikitsa*.

Rasayana effect can be achieved by Single drug or formulation, therapies, lifestyle modification etc. here as some examples of *Aushadha dravya* and their *Rasayana effect*:

- ✓ *Bala(Sida cordifolia), Varahi (Withania somnifera)* and *Kashmari (Gmelina arborea)* are *Balya Rasayana* (helps in increasing tissue).
- ✓ *Lashuna(Allium sativum*) is a nectar with respect to its *Rasayana karma*.
- ✓ *Pippali(Piper longum)* as a *Rasayana* is also quoted in *Charaka Samhitha* as *vardhamana Prayoga* and acts as "*Pranavaha Srotas Rasayana*".
- ✓ Some *Dravya* has its action in enhancing *Medha* and *Smriti* and stated as *Medya Rasayana*. *Brahmi(Bacopa monnieri), Sankhpuspi (Convolvulus pluricaulis, Vacha (Acorus calamus), Mandukaparni (Centella asciatica)* are some of the examples of "*Medya Rasayana*".
- ✓ *Guduchi(Tinospora cordifolia*) *and Amalaki (Embelica officinalis) are* "*Vayasthapaka Rasayana*" (Adaptogenictonic), *they impact for*

decrease of catabolic process hence delays aging.
- ✓ *Bhallataka (Semecarpus anacardium*) helps in promoting immune mechanism.
- ✓ Similarly *Guggulu(Commiphora mukul) Punarnava (Boerhaavia diffusa)* helps in *Rasayana Karma* by properly Channelizing Metabolism.
- ✓ *Shatavari(Asparagus racemosus*) *Kapikachhu(Mucuna pruriens) Aswagandha (Withania somnifera)* promotes regenerative activities and restore senile sexual dysfunction.

Rasayana recommended with special reference to different decades of life span

S.No.	Stage of life	Age group	Sequential loss in Activity Effect of Aging	Desired *Rasayana* Effect	Drugs Recommended
1.	First decade of life span	0-10	*Balya*(childhood)	Growth	*Vacha, Kashmari*
2.	Second decade of life span	11-20	*Vriddhi*(growth)	Growth	*Bala, Ashwagandha, Kashmari*
3.	Third decade of life span	21-30	*Chavi* (beauty)	Lusture	*Amalaki*
4.	Fourth decade of life span	31-40	*Medha* (intellect)	Intellect	*Brahmi, Sankhapushpi, Jyotismathi*
5.	Fifth decade of life span	41-50	*Twak* (health of skin)	Skin glow	*Bhringaraja, Jyothishmathi, Somaraji,*
6.	Sixth decade of life span	51-60	*Drishti* (vision)	Vision	*Triphala, Jyotishmathi*
7.	Seventh decade of life span	61-70	*Shukra*(sex)	Virility	*Kapikachu, Atmagupta, Shatavari*
8.	Eighth decade of life span	71-80	*Vikram*(Physical strength)	Strength	*Rasayana* therapy is not much effective
9.	Nineth decade of life span	81-90	*Budhhi* (wisdom)	Memory	*Rasayana* therapy is not much effective
10.	Tenth decade of life span	91-100	*Karmendriya* (Locomotor activity)	Locomotion	*Rasayana* therapy is not much effective

The Effective Package of Geriatric Care: *Rasayana* are micro-molecular nutrients and their action is through nutrition dynamics and not certainly pharmacodynamics like *Aushadha dravya*. The *Rasayana Dravyas* are anti-oxidants, immune-modulators, adoptogens, and nutrient tonics, which totally attributes to the anti-aging effect.

- An effective package for geriatric care properly planned geriatric care is necessary, examination of *Prakruthi*, *Vayah*, *Agni*, prior to *Rasayana* therapy is vital.
- Proper dietary care in addition to *Swasthavritta* and *Sadvritta* (personal and social codes) should be taken during *Rasayana Chikitsa* for optimal benefit.
- Following of *Dinacharya* and *Rtucharya* with *Vyayama*, *Yoga* etc will act as add on benefit.
- The optimal benefit of *Rasayana Chikitsa* is obtained when it is followed by proper *Shodhana* procedure.[17]

CONCLUSION

"Geriatrics" is emerging as a specialty. With the growth of geriatric population and irregular lifestyle there is a tremendous raise in geriatric related disorders. *Ayurveda*, the science of life and longevity, very well deals with geriatric care. A proper analysis of lifespan and nutritional requirement is elucidated in *Ayurvedic* Classics. *Ayurveda Shastra* deliberates on the science and philosophy of life with the goal of healthy aging and long life. *Ayurveda* aims the achievement of "*Purushartha Chathushtaya" – Dharma, Artha, Kama, and Moksha* and *Shareera* is the tool for the attainment of *purusharthas.* Therefore an ideal care of the *Shareera* in necessary for the fulfilment of *Ayurveda uddesha. A*ging is considered as *Swabhava* of life and *Ayurveda Shastra* describes the pattern of sequential losses of biological strength with advancement of age in relation with the doctrine of *Tridosha*. Management of aging and diseases of aging based on the principles of *Samanya and Vishesha* (Homology versus Heterology) is expounded in *Ayurvedic* classics. Geriatric care of *Ayurveda* is more about *Rasayana Chikitsa*, which compensates age related biological problems of mind and body and a notable rejuvenative effect. A properly planned package of Dietetics, *Rasayana*, *Sadvrutta*, and *Yoga* will result in accurate Geriatric care.

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