ABSTRACT

Introduction: Jarachikitsa is the branch of Ayurveda that deals with the problem of elderly persons. Ayurveda has explained about longevity and vitality in terms of Jarachikitsa and Rasayana. The aspects of ageing in pharmacological as well as non-pharmacological approaches have been explained meticulously in Ayurveda classics. Geriatrics is emerged as a main challenging speciality because of over growing population of aged people all over the world including India. Aims and Objectives: To review the concept of Jara and to explore the prevention and treatment of ageing in Ayurvedic literature. Materials and Methods: Brihattrayi, Laghutrayi and materials pertaining to Jara available in the internet were thoroughly screened, compiled, analyzed and presented in a systematic manner. Discussion: According to Ayurveda, ageing is the outcome of Swabhavabalapravrittvadhi i.e. the diseases which are produced by the diminished strength of natural factors such as Kshudha (hunger), Pipasa (thirst), Jara (ageing), Mrityu (death), Nidra (sleep) etc. Charaka states that the means of obtaining maximum nourishment to body tissues are called as Rasayanas. Sushruta defines Rasayan as a measure which prolongs and provides positive health, improves mental state as well as immunity against diseases. Jara is caused by onset of deterioration of cell structure in the body. In the current era, the entire world is focusing light on the ageing process to improve the average life span of individual and measures are being planned accordingly. In first half of 21st century, old age dependency ratio is expected to double in more developed region and triple in less developed. Thus the aged people are going to be big problem for the society. Conclusion: Ayurveda emphasizes the promotion of health and prevention of diseases with different measures like wholesome diet in proper quantity, Dincharya, Ratricharya, Rtucharya, Sadvrittapalana, Achara Rasayana, Dharaneeya and Adharaneeya vega, Practice of yoga, Rasayana, panchakarma and regular use of some herbal drugs like Ashwagandha, Guduchi, and Amalaki etc. An individual has to adopt these measures to prevent from Akalaja Jara (early aging).

Key words: Ageing, Jara, Panchakarma, Rasayana, Swabhavabalapravrittvadhi.

INTRODUCTION
The word "Ayu" is derived from “Etigacchati iti ayuh”; "Unn gamanaseela" means continuation. Charaka and Vagbhata named the very first chapters of their treatise viz. Deerghamjvitiyam and Ayuskamiyam respectively which indicates the measures for a healthy life and longevity. It clearly shows that the concept of geriatrics was embedded in Ayurveda since beginning.

'Ayu' is the integral combination of Sattwa (psyche), Atma (soul), Sarira (body) and Indriyas (senses). Leaving Atma, which is immune to the cycle of birth, death and disease, the other three components have to be considered for understanding the aging process. Ayurveda incorporates various techniques for promotion of health and prevention of diseases in old age. ‘Maharsi Cyavana’ was rejuvenated to youth putting the clock back, by a course of Rasayana treatment which is also called ‘Kaya Kalpacikitsa’, performed by the well-known Aswinidevas. Though this could well be a pigment of imagination or exaggeration, at least it proves that the rejuvenation of the human body was within the sphere of specialization and experimentation of scholars even in the Vedic Period.

‘Jarachikitsa’ of Ayurveda is the process of delay in ageing of human beings during the later stages of life when degeneration of body tissues and senses occurs at quick rate. Ayurveda advocates healthy ageing through Rasayanachikitsa (Jarachikitsa), Panchakarma, principles of daily regimen, seasonal regimen and Sadvritta (code of conduct). For a better understanding of Jarachikitsa, the concept of ageing (Jara) should be first acknowledged. Ageing is a universal, intrinsic, progressive and deleterious process.

### Concept of ageing (Jara) in Ayurveda

Ayurveda has described the concept of ageing as ‘Jara’. The word Jara itself has been derived from root i.e. ‘Jru’ which means decline stage or old age. ‘Jara’ is defined as the phenomenon of becoming old by the act of wearing out. It is synonymic as “Vardhakya” means increasing of age. The last stage of human life-Vridhhaawastha corresponds to the old age of modern ideology. According to Charakacharya, Vridhhaawastha is between 60 -100 years. Swabhava and Kala play a pivotal role in the process of ageing. Jara is considered as natural phenomenon like hunger, thirst and sleep. Modified improper dietary patterns, sedentary life style, excessive stress and anxiety enhance the process of ageing.

‘Vaya’ (age) can be defined as the duration of time since birth to the present for a living individual. According to Charakacharya, age has been divided into three parts viz. Balyavastha (young age), Madhyamavastha (middle age) and Jirnavastha (old age). After sixty years of age one is called ‘old’. In old age there is a progressive diminution of Dhatu, strength of sense organs, vigor, masculinity, bravery, power of understanding, retaining and memorizing, speech and analyzing facts. There is gradual diminution in the qualities of Dhatu also.

Thus, the Vridhhaawastha or Jirnavastha is the last phase of life and is represented by the decay or degeneration of the body. Sushrutacharya has mentioned ‘Jara’ (ageing) under ‘Swabhavabalapravritta vyadhi’ which is of two types Viz. Kalaja (Parirakshanakrita), appearing at proper time even after proper protection and Akalaja (Aparirakshanakrita), appearing before proper time due to improper care and prevention.

### Classification of ‘Vaya’

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of the texts</th>
<th>Balya</th>
<th>Madhya</th>
<th>Vriddha</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Candogyopanisad</td>
<td>Birth to 24 yrs</td>
<td>24 to 68 yrs</td>
<td>68 to 116 yrs</td>
</tr>
<tr>
<td>2.</td>
<td>Caraka Samhita</td>
<td>Birth to 30 yrs 1. Aparipakvadhatu-Birth to 16 yrs</td>
<td>30 - 60 yrs</td>
<td>60- 100 yrs</td>
</tr>
</tbody>
</table>
Sequential loss in ageing: From birth to death the moment of conception, right into the extreme old age, the human body undergoes considerable changes in shape, size and composition. Sharangadhara Samhita and Ashtanga Sangraha describe the sequential bio-loss 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.

Jara and various factors: To substantiate it some of the factors are described as follows:

(A) Swabhavoparamavada (Theory of natural destruction)
Charaka has explained Swabhavoparamavada as “there is a causative factor for the manifestation of beings but no causative factor as such exists for their deterioration". It indicates that the process of deterioration will occur naturally. Thus ‘Swabhava’ can be considered as a responsible factor for the causation of Jara (ageing) which is invisible and it is a nature’s unique process.

(B) Kala (Time factor)
All the living and non-living things will change along with time. In Ayurveda, this sequence of change is known as “Parinama” which take place under the influence of ‘Kala’. Ayurvedic seers mentioned that the phase of life will occur by the effect of time “Kalasyaparinamena Jaramrityunimittajaha”. Thus, it can be stated that ‘Parinama’ brings Jara which is the last sequential event of life.

(C) Shareera Vriddhikarabhava – abhava (Depletion of growth factor)
Shareera Vriddhikarabhavas are Kalayoga (time bounded phenomenon), Swabhavasamsiddhi (Natural phenomenon as a result of invisible process which is responsible for growth), Aharasaushthava (dietary factor which is according to Ashtahaaravidhivisheshayatan, Aharavidhidhana, Dwadashasanaprabhvcharana) and Avighata (absence of devastating causes). The lack of above mentioned factors may decrease the growth of an individual. So absence of these factors cause ageing process.

(D) Tridosha and ageing
Tridoshas (Vata, Pitta and Kapha) play an important role in maintenance of good health as well as in production of diseases. These Doshas exists in body all the time but their individual dominancy will vary as per age, day or night time and after taking meals. During childhood Kapha dosha predominates, 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 Vishada. So Vata dosha by its nature, decreases luster of skin, reduces body strength, dries and decays the body and hastens ageing proves that the process of ageing can be evaluated in terms of Tridoshas.

(E) Agni and ageing
Apart from doshas, Agni too plays a pivotal role in ageing process. In old age, the aggravated Vata dosha is responsible for Vishamagni which affects the process of digestion thereby leads to under nourishment of tissues and also causes low status of Dhatwagni which manifests various diseases in elder people.

(F) Dhatus and ageing
The literature of Ayurvedic classics suggests that the strength of Dhatu is decreased during old age.
Ojas (the essence of all the Dhatus) which is responsible for resistance against diseases or Vyadhikshamatva (Immunity) is also decreased and causes different kinds of diseases thereby leads to ageing. So the Dhatukshaya and Ojakshaya are also responsible for process of ageing.

(G) Srotasa and ageing

According to Charaka various pathological conditions arise in the body due to Srotodusti of different Srotases. The main function of Srotas (channels of body) is to transfer the body fluids. There are four kinds of ‘Shrotodushti’ that takes place i.e. Atipravritti, Sanga, Siragranthi and Vimargagamana. Vitiation of Vayu and Mandagni causes Srotodusti in the form of Srotosanga which leads to improper nourishment of body tissues in aged.

Causes of Akalaja-jara (Premature ageing)

The causes of early ageing process according to Ayurveda are clearly described by Charaka and Vagbhata. All the etiological factors for ageing can be differentiated in three categories.[14],[15]

<table>
<thead>
<tr>
<th>Decade of life</th>
<th>Sharangadhara Samhita</th>
<th>Ashtanga Samgraha</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>Balyam (Childhood)</td>
<td>Balyam (Childhood)</td>
</tr>
<tr>
<td>2nd</td>
<td>Vriddhi (Growth)</td>
<td>Vriddhi (Growth)</td>
</tr>
<tr>
<td>3rd</td>
<td>Chavi (Complexion)</td>
<td>Prabha (lusture)</td>
</tr>
<tr>
<td>4th</td>
<td>Medha (intellect)</td>
<td>Medha (intellect)</td>
</tr>
<tr>
<td>5th</td>
<td>Twaka (Skin)</td>
<td>Twak (Skin)</td>
</tr>
<tr>
<td>6th</td>
<td>Drishti (Vision)</td>
<td>Shukra (Virility)</td>
</tr>
<tr>
<td>7th</td>
<td>Shukra (Virility)</td>
<td>Drishti (Vision)</td>
</tr>
<tr>
<td>8th</td>
<td>Vikram (Strength)</td>
<td>Shrotendriya (Hearing)</td>
</tr>
<tr>
<td>9th</td>
<td>Buddhi (intellect)</td>
<td>Mana (Sprituality)</td>
</tr>
<tr>
<td>10th</td>
<td>Karma (Function of all the Indriya)</td>
<td>Sarvendriya (all the indriyas)</td>
</tr>
</tbody>
</table>

Aharatmaka Hetu

- Amla, Katu, Lavana rasa, Kshara, Guru, Ruksha, Klinna (softened), Abhisyandi (those which obstruct the channels of circulation) accelerates the process of ageing.
- Navashukadhanya (newly harvested class of corns), Navashamidhanya (newly harvested class of pulses), Shuskamansa (dried meat), Tila (sesamum), etc. produces Ama by decreasing Agni and leads to ageing process.
- Different type of viruddhaahara (incompatible diet) i.e. Rasa viruddha, Guna viruddha, Virya viruddha etc. are also responsible for initiation of ageing process.
- Asatmya ahara (unwholesome diet), Vishamashana, Adhyasana etc. leads to Agnidushti and senility.

Viharatmaka hetu: Divaswapna (day sleep), Ativayavyaya (excessive indulgence in sexual act), and Vishama-atimatra vyayama etc. are the Viharatmaka hetus of Jara

Manasika hetu: Bhaya, Krodha, Shoka, Lobha, Moha etc. are the causes for the senility. Madhava Nidana[16] and Rasa Ratna Sammucchaya[17] have mentioned that excessive walking, Kada Anna (food articles which are devoid of Jeevaniya properties), sexual indulgence and mental worries cause Jara.

Samprapti of Jara There is increase of Vata in old age which causes improper nourishment of Rasa Dhatu and all the Dhatus also undergo improper nourishment. This gradual malnourishment leads to
irreversible process of Kaalaj Jara (aging). The Samprapti of Aakaalaj Jara (etiology of premature aging) is as follows: Nidanas (causative factors) such as Ati AharaVihara (excess food intake and improper lifestyle), Manasika Vega Adhaarana (non-suppression of unpleasant emotions) leading Srotolepa (blocks the body channels) which in turn causes Agnimandya and then forms Ama. When the function of Agni is vitiated, there is improper nourishment of Rasa and successive Dhatus causing Shareera Apachaya (improper nourishment of body) and Ojo Hrasa (depletion of the Ojas) resulting in Aakaalaj Jara (premature aging).

**DISCUSSION**

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 Ayurveda principles of management of Jara.

**Ideal lifestyle Regimen:** Ideal lifestyle regimen, Dinacharya (daily regimen) and Rtucharya (seasonal regimen) are concerned with the personal aspect of individual. Physical and mental ageing of one’s life can be prolonged by adopting these principles.

**Panchakarma:** Panchakarma therapy 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 delay the ageing.  

**Vamana therapy in Kapha aggravating season i.e. Vasant Rtu, Virechana therapy in Pitta aggravating Rtu i.e. Sharad Rtu and Vasti therapy in Vata aggravating season i.e. Varsha Rtu is recommended for the prevention and maintenance of health. Some intermediary palliative measures like Abhyanga (massage), Swedana (oleation) including Pinda Sveda and Kaya Seka are very suitable in providing relief to patients having complaints related to musculo-skeletal system in old age. Vamana (medical emesis) and Virechana (therapeutic purgation) especially of Mridu type and Matra basti (therapeutic oil enema) are best suited for old aged individuals. Palliative measures like Shirodhara and Shirobasti are useful in anxiety, tension headache, insomnia, psychiatric and neurodegenerative conditions.

**Rejuvenation therapy:** Ageing cannot be cured but can be delayed with the help of Rejuvenation therapy. Concept of anti-ageing is embodied in Jarachikitsa (Rasayana) in Ayurveda. This is the unique modality of Ayurveda which can be extensively utilized for the preservation of health and longevity of the aged. Sushruta has described Rasayana as one, which delays ageing, increases the life-span, promotes intellect, memory, and increases resistance to diseases. Rejuvenation therapy offers a comprehensive physiological as well as metabolic restoration.

**Vayasthapana Drugs (Age stabilizing drugs):** Charaka has explained Vayasthapana mahakashaya as a group of drugs having Rasayana properties which promotes overall nourishment of body tissues. Ten Vayasthapana drugs which can be used for anti-ageing purpose viz. Amrita (Tinospora cordifolia), Abhaya (Terminalia chebula), Dhaatri (Embilica officinalis), Rasna (Pluchea lanceolata), Shveta (Alpenia galanga), Jeevanti (Leptadenia reticulata), Atirasa (Asparagus racemosus), Mandookaparni (Centella asiatica), Sthira (Desmodium gangeticum) and Punarnava (Boerhavia diffusa).

**Sadvritta:** The path of ethical, social, mental, moral and physical conduct induces a positive influence on the mind and body. The person who behaves as per the principles of code of conduct (Sadvritta) becomes more divine and lives a good quality of life and it may help to prevent early ageing.

**Medicinal plants for diseases of old age:** Numerous single drugs and compound formulations are prescribed by ancient seers which will help in prevention and treatment of diseases in old age. Single drugs like Arjuna (Terminalia arjuna), Jatamansi (Nordostachys jatamansi) and compound drugs like Prabhakar Vati, Arjunarishta are used in the disorders of Cardio-vascular System, single drugs like Tulsi (Ocimum sanctum), Shunthi (Zingiber officinalis) and Virechana (therapeutic purgation) especially of Mridu type and Matra basti (therapeutic oil enema) are best suited for old aged individuals. Palliative measures like Shirodhara and Shirobasti are useful in anxiety, tension headache, insomnia, psychiatric and neurodegenerative conditions.
officinale) and compound drugs like Sitopaladi Churna, Talisadi Churna are used in the disorders of Respiratory system, single drugs like Ashwagandha (Withania somnifera), Satavari (Asparagus racemosus) and compound drugs like Yograv Guggulu, Tryodashang Guggulu, Maharasnaadi Kwath and Maha Narayana Tail are used in the disorders of Musculoskeletal System, single drugs like Brahmi (Bacopa monnieri), Shankhpushpi (Convolvulus pluricaulis) and compound drugs like Brahmi Vati and Sarasvatarishta are used as memory enhancer and anxiolytic etc.

**CONCLUSION**

Jara is the stage of an individual when one feels decline in the physical, physiological as well as mental activity. Ayurvedic literature has clearly distinguished the two types of Jara viz. Kalaja (fixed) and Akalaja (early ageing). Kalaja Jara is mentioned as Swabhavika vyadhi, which cannot be prevented by drugs or any other things whereas Akalaja jara i.e. premature ageing process can be prevented by adopting regular Panchakarma procedures for body purification and intake of Rasayana drugs. Acharyas mentioned a branch called Rasayana tantra as one amongst ashtangas of Ayurveda to maintain the normal life span of aged people. The present paper brings a clear picture about the process of ageing in ayurvedic perspective and also suggests the importance of Panchakarma, Rasayana therapy, Ideal life-style regimen, and Sadvratta are the main tools to maintain physical, Physiological and psychological restoration.

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