



## Review Article

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**CONCEPT OF AGEING AND CERTAIN SINGLE DRUG INTERVENTION IN AYURVEDA: A REVIEW**Swati Sharma <sup>1\*</sup>, Ankur Tripathi <sup>2</sup><sup>1</sup>Research officer, M.S Regional Ayurveda Research institute for endocrine disorders, Jaipur, India<sup>2</sup>Medical officer, National Institute of Ayurveda, Jaipur, India

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**ABSTRACT**

Ageing is known as accumulation of changes in a person over the period of time. Ageing in humans refers to process of physical, psychological, and social changes. Nowadays increasing number of the aged persons ( $\geq 60$  years) give a new viewpoint for our attitude towards ageing. Ayurveda is basically the science of life and longevity. Ayurveda science has good concept of ageing and its management. Not only the drug formulations but also the single drugs in appropriate doses are very helpful in management of age related changes and diseases. This review will provide rich scientific knowledge pertaining to Ageing and its management by means of single drug for the prevention and management of Age related disorders and also can be navigator for researchers and clinicians for the prevention and better understanding the role of Age related changes and diseases management.

**Keywords:** Vriddha, Rasayana, Ageing**INTRODUCTION**

In humans, ageing represents the accumulation of changes in a human being over time<sup>1</sup>. Vriddhavastha (Ageing) is a natural progressive, irreversible, biological process. Ageing is linked with declination of physical and mental functions. Many systemic illnesses and disabilities are common in old age due to structural and functional changes of body<sup>2</sup>. People over 35 years of age are at risk for developing presbyopia and most people benefit from reading glasses by age 45–50 years. Around age 50, hair turns grey. Pattern hair loss by the age of 50 affects about half of males and a quarter of females. Menopause typically occurs between 49 and 52 years of age. In the 60–64 age cohort, the incidence of osteoarthritis rises to 53%. Only 20% however report disabling osteoarthritis at this age. Almost half of people older than 75 have hearing loss inhibiting spoken communication. Frailty, defined as loss of muscle mass and mobility, affects 25% of those over 85<sup>3</sup>. With advancing age, skin changes, multiple diseases and nutritional problems are the variety of conditions occurred with elderly persons.

**Overview of Ageing – An Ayurvedic Concept**

Ayurveda has adapted holistic approach to maintain healthy and long life. It includes the factors like social, cultural and environmental effect (Achara Rasayana) that influence the ageing in order to maintain the complete longevity. Ayurveda has prescribed specific life style regimen which primarily include balanced diet and observance of health conduct. In Sushruta Samhita, several physical and mental symptoms have been described as consequence of ageing. It includes Dhatu Kshaya (degeneration of tissues), Balakshaya (loss of physical strength and body immunity), Viryakshaya (decreased sexual power), Utsahakshaya (loss of motivation), Vali (wrinkles), Palitya (greying of hairs), Kasa and shwasa (cold, cough and asthma)<sup>4</sup>. Acharya Vagbhata has also mentioned the gradual decline of the dhatus and the function of the sense and motor organs in old age. There are descriptions of signs and symptoms of old age e.g. Kasa (cough), Shvasa (dyspnea), Valita (wrinkles), Khalitya (alopecia), Agnisada, Slathasaramansandhyasthita (looseness of muscles, joints and bone), Twakapaurushya (Rough skin), Avaname (body bends forward), Vepathu (tremors) etc. Sharangdhara has described characteristic features of decade wise changes, both regarding psychic and somatic changes brought about by ageing process<sup>5</sup>.

**Table 1: Decade wise Signs and Symptoms (According to Sharangdhara Samhita)**

Sl.no	Decades	Signs and Symptoms
1	0- 10 years	Balya awastha kshaya (loss of childishness)
2	11 – 20 years	Vriddhi kshaya (loss of growth)
3	21 – 30 years	Chhavi kshaya (loss of beauty)
4	31 – 40 years	Medha kshaya (loss of intellect)
5	41 – 50 years	Twaka kshaya (loss of skin health)
6	51 – 60 years	Drishti kshaya (loss of vision)
7	61 – 70 years	Shukra kshaya (loss of sexual power)
8	71 – 80 years	Vikram kshaya (loss of physical strength)
9	81 – 90 years	Buddhi kshaya (loss of wisdom)
10	91 – 100 years	Karmendriya kshaya (loss of locomotive action)

## Concept of Rasayana

In Ayurveda, Rasayana therapy is advocated to slow down the phenomenon of ageing process. Rasayana therapy is one of the eight major clinical disciplines of Ayurveda. The object of this branch is to remove the disease and prevent ageing process. Acharya Charaka states that the mean of obtaining the optimum nourishment to the Dhatus are called Rasayana. It enables to achieve youthfulness, lusture, good complexion, melodious speech, energy to senses, and body etc. Rasayana is a combination of specific procedures practices e.g. rejuvenative recipes, dietary schedule and health improving conduct and behavior.

## Certain Single Drugs and its Uses

Various available Samhitas (treatise), Sangraha grantha (compendia), research articles and pharmacopeias were scrutinized for explaining the ageing concept and its treatment through single drug therapy. Collected data were arranged systematically with brief introduction of drugs and its effect on various systems affected by ageing for easy assessment and understanding.

**Table 2: Single Drugs and Their Effect**

1	Skin improving and wrinkle preventing Rasayana drug	Aloe vera, Olive oil
2	Antihypertensive effect	Arjuna, Tagara, Sarpagandha
3	Memory enhancing and intellect improving drugs	Brahmi, Ashwagandha
4	Immunity enhancing drugs	Yastimadhu, Tulsi
5	Hypolipidemic effect	Guggulu, Amalaki, Arjuna, Pushkaramula
6	Visual acuity improving drugs	Haritaki, Amalaki
7	Antihyperglycemic effect	Guduchi, Haridra
8	Rheumatoid arthritis	Guduchi, Haridra, Shunthi

### Skin improving and wrinkle preventing Rasayana drugs

- Aloe vera<sup>6,7,8</sup> (*Aloe barbadensis*): *Aloe vera* contains 75 potentially active constituents, vitamins, enzymes, minerals, sugar, lignin, saponins, salicylic acid and amino acids. It contains Vitamin A ( $\beta$  carotene), Vitamin C, Vitamin E, which are antioxidant in nature. Antioxidant neutralizes free radicals, thus preventing ageing effect. It contains bradykinin, which is very useful to reduce the inflammation when applied topically. Saponins have cleansing and antiseptic properties. Mucopolysaccharides is supportive in binding moisture into skin. Aloe makes the skin more elastic and less wrinkled due to production of collagen and elastin fibers. It also unified superficial cracking epidermal cells result in softening the skin. It also exhibits anti acne property.
- Olive oil<sup>9,10</sup> (*Olea europace*): Olive oil contains an extensive variety of valuable antioxidants such as hydroxytyrosol, which is thought to be antioxidant. It scavenges free radicals to prevent aging. Use of Olive oil in food reduces the risk of coronary heart disease due to presence of a mono unsaturated fat named oleic acid. Olive oil also act as a natural deep penetration moisturizer producing anti-ageing effect.

### Anti-hypertensive effect

- Arjuna<sup>11</sup> (*Terminalia arjuna*): Chemical constituents are arjunolic acid, masilinic acid, arjunolon. Dose is 3-6 g of drug (bark) in powder form. It has antihypertensive and hypocholesterolemic effect.
- Tagara<sup>12</sup> (*Valeriana wallichii*): Chemical constituents are valepotriates, isovalinic acid, elemol, actinidine. Dose is 1-3 g in powder form. Its blood pressure lowering activities are probably due to potassium ion channel activation.
- Sarpagandha<sup>13</sup> (*Rauwolfia serpentine*): Chemical constituents are reserpine, amalacidine. Dose is 1-2 g powder of dried roots in hypertension.

### Memory enhancing and intellect improving drugs

- Brahmi<sup>14,15</sup> (*Bacopa monnieri*): Chemical constituents are brahmini, herpestine, nicotine, bacoside. Doses are 1-3 g in powder form. Therapeutic uses are in senile dementia.
- Ashwagandha<sup>16</sup> (*Withania somnifera*): Chemical constituent are withaferin A, sitoinside. Dose is 3-6 g of drug in powder form. Therapeutic uses are anxiolytic and to improve cognitive function.

### Immunity enhancing drugs

- Yastimadhu<sup>17</sup> (*Glycyrrhiza glabra*): Chemical constituents are glycyrrhizin, glabaranin. Dose is 2-4 g powder form. It shows Antioxidant effect in peri/post-menopausal women.
- Tulsi<sup>18, 19</sup> (*Ocimum sanctum*): Chemical constituent are eugenol,  $\beta$  caryophyllene,  $\beta$  elemen,  $\beta$  pinen. Dose is 1-3 g of drug in juice form and 1-2 g drug in powder form. Tulsi seed oil appears to effect on humoral and cell mediated immunological parameters in both stressed and non-stressed person. Tulsi also exhibit anti-ageing and anti-stress effect.

### Hypolipidemic effect

- Guggulu<sup>20</sup> (*Commiphora mukul*): Dose is 2- g.
- Amalaki<sup>21</sup> (*Embllica officinalis*): Chemical constituents are Vitamin C, gallic acid, ellagic acid, phyumblic acid, phyllantidin etc. Dose is 3-6 g drug in powder form and 5-10 ml fresh juice. It decreases levels of total cholesterol, LDL and raised HDL.
- Arjuna<sup>22, 23</sup> (*Terminalia arjuna*): Chemical constituents are arjunolic acid, masilinic acid, arjunic acid and arjunolone. Dose is 3-6 g of drug in powder form. Therapeutic uses are Cardiotonic, Antioxidant and hypocholesrolaemic effect.
- Pushkaramula<sup>24</sup> (*Inula racemosa*): Chemical constituents are innuual, isoallaulan, talactom, pyrazolin, isotelecin, lignans, sesquiterkene lactose. Dose is 1-3 g of drug in powder (root) form. It is a known antianginal, hypolipidemic drug.

### Visual acuity improving drugs

- Haritaki<sup>25,26</sup> (*Terminalia chebula*): Chemical constituents are chebulic acid, chebulagic acid. Dose is 3-6 g of drug in powder form
- Amalaki<sup>27</sup> (*Embllica officinalis*): Chemical constituents are Vit.C, gallic acid, ellagic acid, phymblic acid, phyllantidin etc. Dose is 3-6 g drug in powder form and 5-10 ml fresh juice. It Improve visual acuity in patients of diabetic retinopathy.

### Antihyperglycemic effect

- Guduchi<sup>28</sup> (*Tinospora cordifolia*): Chemical constituents are tinosporine, tinosporone, tinosporic acid, Tinosporide. Doses are 3-6 g powder, 20-30 g decoction.
- Haridra<sup>29</sup> (*Curcuma longa*): Chemical constituent is curcumin. Dose is 1-3 g of drug (rhizome) in powder form.

### Rheumatoid arthritis

- Haridra<sup>30</sup> (*Curcuma longa*): Chemical constituent is Curcumin. Dose is 1-3 g of drug (rhizome) in powder form.
- Guduchi<sup>31</sup> (*Tinospora cordifolia*): Chemical constituents are tinosporine, tinosporone, tinosporic acid, tinosporide. Doses are 3 – 6 g powder, 20-30 g decoction.
- Shunthi<sup>32</sup> (*Zingiber officinale*): Chemical constituents are Gingerol, zingiberene.

### CONCLUSION

The need of the hour is to join our hand against ageing related diseases and to help our elders by means of Ayurveda principles of living, diet and medications. A thorough understanding of these fundamentals will help us in reducing morbidity due to age related factors and achieving the noble goal of maintaining the health of elder

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