

## INFLUENCE OF VAYASTHAPANA MAHA KASAYA (HERBAL DECOCTION) AS AN ANTI-AGING PROPERTY -COMPREHENSIVE REVIEW

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### Review article

#### ABSTRACT

As per the Ayurveda, *Vaya* represents the state of the body depending upon the length of the time that has passed since birth. Whole lifespan is divided into three phases, i.e. *Bala*, *Madhya* and *Jirna*. *Jirnavastha* or *Vriddhavastha* is the final stage of life, occurring between the ages of 60 and 70. This time period is denoted by its name., i.e., the name *Vridhdha* is given to old age and the word *Jirna* represents characteristics of this stage of life with decay or degeneration. This stage is distinguished by a decrease in *Dhatu*, sense organ strength, vitality, manliness, valor, comprehending power, retention, memorization, speech, and analyzing data. As per the modern science, Aging is the time dependent, physiological decline of biological process which are often associated with age related diseases. Those pathologies often associated with aging such as cellular inflammation and atherosclerosis, involves hyperactivity or uncontrolled cellular growth. As per the Modern review there are nine hallmarks of aging, genomic instability, telomere attrition, epigenetic alteration, loss of proteostasis, deregulated nutrient-sensing, mitochondrial dysfunction, cellular senescence, stem cell exhaustion and altered intracellular communication. The objectives of this study were to study literature of aging process as per Ayurveda, to review the relationship of aging process and Three *Dosha* theory. to find out influence of *Vayasthapana Maha kasaya* individual herbs on three *Dosha*. Aging has direct influence of three *Dosha*. Pharmacological property of individual herbs directly influences on anti-aging process and three *Dosha*.

**Key Words:** Ayurveda, Anti-Aging, *Vayasthapana Maha kasaya*, Three *Dosha*

**INTRODUCTION:** The ancient text of Ayurveda, Charka Samhita (1500BC) explains the component of standard formulation used for untimely ageing called *Vayasthapana Mahakashaya* formulation. This formulation consists of plants namely *Guduchi* (*Tinospora cordifolia* Wild), *Haritaki* (*Terminalia chebula* Retz), *Amla* (*Phyllanthus emblica*), *Mukta* (*Pluchea lanceolata*), *Shweta* (*Clitoria ternatea*), *Jivanti* (*Leptadenia reticulata*), *Atirasa* (*Asparagus racemosus*), *Mandookparni*

(*Centella asiatica*), *Sthira* (*Desmodium gangeticum*), *Punarnava* (*Boerhavia diffusa*). Aging is a degrading process that is involved in natural disorders. As per the Ayurveda, *Vaya* represents the state of the body depending upon the length of the time that has passed since birth. Whole lifespan is divided into three phases, i.e., *Bala*, *Madhya* and *Jirna*. *Jirnavastha* or *Vriddhavastha* is the final stage of life, occurring between the ages of 60 and 70. This time period is denoted by its name, i.e. the name *Vridhdha* is given to old age

and the word *Jirna* represents characteristics of decay or degeneration. This stage is characterized by diminution of the *Dhatu*, strength of sense organs, energy, manliness, valor, power of understanding, retention, memorizing, speech and analyzing facts<sup>1</sup>. *Vata*, *Pitta* and *Kapha* are the three *Doshas* which are responsible for the pathological changes in the body when they get vitiated. Despite the fact that aging is a natural pathological condition, *Pitta* plays a significant part in its etiology. The Charaka Samhita clearly states that those with *Pitta* predominance likely to suffer from decaying processes and other age changes earlier. *Rasayana* is a part of the Ayurvedic-based traditional medicine system that focuses on rejuvenation, regeneration, immunomodulation, and good aging. Many fruits, herbs, and spices are combined in specific quantities to make *Rasayanas*, which are traditionally used to boost health. According to Charaka Samhita, the administration of *Rasayana* increases the longevity of life, memory, comprehension, health, youthfulness, brightness and complexion<sup>2</sup>.

#### OBJECTIVES:

The objectives of this study were to study literature of aging process in relation to the *Vayasthapana Mahakashaya* as per Ayurveda, to review the relationship of aging process and Three *Dosha* theory, to find out influence of *Vayasthapana Maha kasaya* individual herbs on three *Dosha* and aging process .

#### METHODOLOGY:

Ayurveda classical texts (Caraka, Susruta and Ashtangahridaya), published research articles in journals, PubMed, Google scholar, related web sites, previous research papers (modern and Ayurveda) related to anti-aging were reviewed.

#### RESULTS AND DISCUSSIONS:

Ayurveda medicines, which date back more than 5000 years, are increasingly sought after around the world for a variety of purposes. Several Ayurvedic medicinal herbs and formulations, for example, traditionally known as *Rasayana*, have been shown to significantly promote health, immunity, vigor, vitality, and longevity while also protecting against stress. These medications claim to promote healthy aging, stop degenerative changes, and have rejuvenating properties at the cell and tissue levels<sup>1</sup>. *Vayasthapana Dashakaya Maha kasaya* (Herbal decoction) is a collection of ten ingredients with anti-aging property found in Charaka Samhita includes<sup>2</sup> and *Vayasthapan gana* drugs were studied in detail from Charaka Samhita Sutrasthana 4 chapter, its commentaries and various books of *Dravyaguna*.

1. *Amruta* (*Tinospora cordifolia* Miers),
2. *Abhaya* (*Terminalia chebula*),
3. *Dhatri* (*Embllica Officinalis* Gaertn.),
4. *Mukta* (Pearl),
5. *Shveta* (white variety of *Clitoria ternatea* Linn.),
6. *Jivanti* (*Leptadenia reticulata*),
7. *Atirasa* (*Asparagus racemosus* Willd.),
8. *Mandukaparni* (*Centella asiatica* Urban.),
9. *Sthira* (*Desmodium gangeticum*), and
10. *Punarnava* (*Boerhavia diffusa* Linn.)






Aacharya Charaka has given unique importance to *Vayasthapana Dashakaya Maha kasaya* - (Herbal decoction) for maintaining vitality and managing ageing and its allied ill effects. Dalhana had explained the word "*Vayasthpana*" by giving its two meanings of "*Vayasthapana*":

- (1) it enables the person to live a full life span of 100 years.

(2) It makes the man to live young for a long period thus prevents the Jara.<sup>3</sup> Aacharya Charaka mentioned Vayasthapana Dashakaya Maha kasaya -

VDMK dravyas in sutrasthana and said the drugs Vayasthapana is a method of preventing the aging process.

**Table-1-Vayasthapna dashakaya ingredients.**

Sanskrit Name	Botanical Name	Description
1.Amruta	<i>Tinospora cordifolia</i> Miers <sup>4</sup>	
2.Abhaya	<i>Terminalia chebula</i> <sup>5</sup>	
3.Dhatri	<i>Emblica Officinalis</i> Gaertn. <sup>6</sup>	
4.Mukta	Pearl <sup>7</sup>	
5.Shveta	white variety of . <i>Clitoria ternatea</i> Linn. <sup>8</sup>	






6. Jivanti	<i>Leptadenia reticulata</i> <sup>9</sup>	
7. Atirasa	<i>Asparagus racemosus</i> Willd. <sup>10</sup>	
8. Mandukaparni	<i>Centella asiatica</i> Urban <sup>11</sup>	
9. Sthira	<i>Desmodium gangeticum</i> , <sup>12</sup>	
10. Punarnava	<i>Boerhavia diffusa</i> Linn. <sup>13</sup>	

Table 2 -Rasa, Virya, Vipaka, effects on Doshas

Rasa	Virya	Vipaka	Effects on Doshas	Qualities/Guna increased
Sweet ( <i>Madhura</i> )	Cooling	Sweet	Increases <i>Kapha</i>	Heavy, oily, soft
Sour ( <i>Amla</i> )	Heating	Sour	Increases <i>Pitta</i>	Light, oily, soft
Salty ( <i>Lavana</i> )	Heating	Sweet	Increases <i>Kapha</i>	Heavy, oily, sharp

Pungent ( <i>Katu</i> )	Heating	Pungent	Increase <i>Vata</i>	Light, dry, sharp
Bitter ( <i>Tikta</i> )	Cooling	Pungent	Increase <i>Vata</i>	Light, dry, sharp
Astringent ( <i>Kashaya</i> )	Cooling	Pungent	Increase <i>Vata</i>	Heavy, dry, sharp

The stem of *T. cordifolia* contains a variety of phytochemicals. Methanolic extract of *T. cordifolia* stem exhibited better antioxidant potential.<sup>14</sup> Preliminary phytochemical screening of *T. cordifolia* showed the presence of carbohydrates, glycosides, flavonoids, phenols, tannins and amino acids in the crude drug.<sup>15</sup> Literature analysis of plant phytochemical assessments indicates the existence of a wide variety of phytoconstituents. This plant has isolated a wide range of chemical constituents and their structures have been developed. Phytochemistry of *T. cordifolia* plant S.N. Alkaloids, diterpenoid lactones, glycosides, hormones, sesquiterpenoids, phenolics, aliphatic compounds and polysaccharides are active ingredients<sup>16,17</sup>. Phytochemicals present in the different extracts of roots of *Terminalia chebula* was identified as prominent source for anti-oxidant property<sup>18</sup>. Phytochemical examination of *Terminalia chebula* reveals the presence of gallic acid, ellagic acid, tannic acid, ethyl gallate, chebulic acid, chebulagic acid, corilagin, mannitol, ascorbic acid (Vitamin C), and other chemicals. The fruit extracts of *Terminalia chebula* contain glycosides, alkaloids, flavonoids, phenolic compounds, saponin, steroids, quinine, and tannin<sup>18</sup>. The seed extracts of *terminalia chebula* contain alkaloids flavonoids, phenol, carbohydrates, glycosides, terpenoids, saponins, proteins and tannins.<sup>19</sup> The extracts from various parts of *E. officinalis*, especially fruit, contain numerous phytoconstituents viz. higher number of polyphenols like gallic acid, ellagic acid, different tannins, minerals, vitamins, amino acids, fixed oils, and flavonoids like rutin and quercetin<sup>20</sup>. The

chemical composition of pearl is 82-86% calcium Carbonate, 10-14% conchiolin and 2-4% of water (CaCo<sub>3</sub> and H<sub>2</sub>O)<sup>21</sup>. The preliminary phytochemical screening showed that the plant contained tannins, phlobatannin, carbohydrates, saponins, triterpenoids, phenols, flavonoids, flavanol glycosides, proteins, alkaloids, anthraquinone, anthocyanins, cardiac glycosides, Stigmast-4-ene-3,6-dione, volatile oils and steroids<sup>21</sup>. *Clitoria ternatea* seeds contain palmitic, stearic, oleic, linoleic, and linolenic acids as fatty acids. Seeds also contained cinnamic acid, anthoxanthin glucoside, a highly basic small protein named finotin, water soluble mucilage, delphinidin 3, 3', 5'-triglucoside and beta-sitosterol<sup>22</sup>. Leaves, Roots, Stem, Chemical Composition includes Ferulic acid, luteolin, diosmetin, rutin,  $\beta$ -sitosterol, stigmasterol, hentricontanol, a triterpene alcohol simiarenol, apigenin, reticulon, deniculatin, and leptaculatin<sup>23</sup>. Steroid saponins are the primary active ingredients of *Asparagus racemosus*. Isoflavones, asparagamine, racemosol, polysaccharides, mucilage, vitamins A, B1, B2, C, E, Mg, P, Ca, Fe, and folic acid present in roots<sup>24</sup>. The chemical constituents of *Centella* include polyacetylenes, triterpenoids, asiaticosides<sup>25</sup>. Phytochemical research revealed the plant *Desmodium gangeticum* is rich in alkaloids, pterocarpan, phospholipids, sterols and flavonoids<sup>26</sup>. Phytochemical investigation of ethanolic extract of *Boerhavia diffusa* leaves afforded uridine characterized as uridine triacetate quercetin 3-O- $\alpha$ -D-rhamnoside, eupalitin 3-O- $\beta$ -D-galactopyranoside, 3-O- $\square$ -D-glucopyranosyl sitosterol, boeravinone-amyrin, amyrin acetate and sitosterol<sup>27</sup>

**Table -3– Pharmacodynamics property and *dosha* effects of *Vayasthapana Dashakaya*** <sup>28</sup>

Name	Taste ( <i>Rasa</i> )	Qualities ( <i>Guna</i> )	Potency ( <i>Veerya</i> )	Taste conversion after digestion ( <i>Vipaka</i> )	Effects on <i>Dosha</i>
1. <i>Amruta</i> ( <i>Tinospora cordifolia</i> Miers),	<i>Kashaya</i> (Astringent) <i>Tiktha</i> (Bitter)	<i>Laghu</i> (Light) <i>Snighdha</i> (Unctuous)	<i>Ushna</i> (Hot potency)	<i>Madhura</i> (Sweet)	Balance <i>Vata, Pitta, Kapha</i>
2. <i>Abhaya</i> ( <i>Terminalia chebula</i> ),	Five tastes except salt, Astringent dominant	<i>Laghu</i> (Light) <i>Ruksha</i> (Dryness)	<i>Ushna</i> (Hot potency)	<i>Madhura</i> (Sweet)	Balance <i>Vata, Pitta, Kapha</i>
3. <i>Dhatri</i> ( <i>Emblica Officinalis</i> Gaertn.),	Sour <i>Madhura</i> (Sweet) <i>Tiktha</i> -Bitter <i>Kashaya</i> - Astringent <i>Katu</i> -Pungent	<i>Laghu</i> (Light)	Cold potency	<i>Madhura</i> (Sweet)	<i>Vata</i> , <i>Pitta</i> balancing and <i>kapha</i> nourishing
4. <i>Mukta</i> (Pearl),	<i>Madhura</i> (Sweet)	<i>Laghu</i> (Light) <i>Shushira</i> (Cavities)	Cold potency	<i>Madhura</i> (Sweet)	<i>Kapha</i> . <i>Pitta</i>
5. <i>Shveta</i> (white variety of <i>Clitoria ternatea</i> Linn.),	<i>Katu</i> -Pungent <i>Tiktha</i> -Bitter <i>Kashaya</i> (Astringent)	<i>Laghu</i> (Light) <i>Ruksha</i> (Dryness)	Cold potency	<i>Katu</i> -pungent	Balance <i>tri Dosha</i>
6. <i>Jivanti</i> ( <i>Leptadenia reticulata</i> ),	<i>Madhura</i> (Sweet)	<i>Laghu</i> (Light) <i>Snighdha</i> (Unctuous)	Cold potency	<i>Madhura</i> (Sweet)	Balance <i>Tri Dosha</i>
7. <i>Atirasa</i> ( <i>Asparagus racemosus</i> Willd.),	<i>Madhura</i> (Sweet)	<i>Snighdha</i> (Unctuous) <i>Guru</i> -heaviness	Cold potency	<i>Madhura</i> (Sweet)	<i>Vata, Pitta</i>
8. <i>Manduka parni</i> ( <i>Centella asiatica</i> Urban.),	<i>Tiktha</i> -Bitter	<i>Laghu</i> (Light)	Cold potency	<i>Madhura</i> (Sweet)	<i>Kapha</i> <i>Pitta</i>
9. <i>Sthira</i> ( <i>Desmodium gangeticum</i> )	<i>Tiktha</i> -Bitter <i>Madhura</i> (Sweet)	<i>Guru</i> -heaviness <i>Snighdha</i> (Unctuous)	Hot potency	<i>Madhura</i> (Sweet)	Balance <i>Tri-Dosha</i>

m), and					
10.Punarnava (Boerhavia diffusa Linn.)	Tiktha -Bitter Madhura (Sweet) Kashaya (Astringent)	Guru-heaviness Laghu (Light) Ruksha (Dryness)	Hot potency	Katu-(pungent)	Kapha Vata

According to chemical analysis of Vayasthapana dashakaya most of the herbs having anti-oxidative property except pearl. According to the free radical theory of aging, oxygen-derived free radicals are to blame for age-related damage at the cellular and tissue levels. In a normal situation, a balanced-equilibrium exists among oxidants, antioxidants and biomolecules<sup>29</sup>. Excessive free radical production may exceed natural cellular antioxidant defenses, resulting in oxidation and further impairing cellular function. Because free radical reactions have been identified as promoters of the aging process, treatments aiming at restricting or inhibiting them should be able to minimize the rate of generation of age alterations, resulting in a reduction in the aging rate and disease pathogenesis<sup>30</sup>.

According to Ayurveda pharmacodynamics analysis Amruta (*Tinospora cordifolia* Miers), Abhaya (*Terminalia chebula*), Dhatri (*Embolica Officinalis Gaertn.*), Mukta (Pearl), Jivanti (*Leptadenia reticulata*), Atirasa (*Asparagus racemosus* Willd.), Mandukaparni (*Centella asiatica Urban.*) and Sthira (*Desmodium gangeticum*) all have adhura Vipaka (Table 2 and Table 3) and Dhatri (*Embolica Officinalis Gaertn.*), Mukta (Pearl), Shveta (white variety of *Clitoria ternatea* Linn.), Jivanti (*Leptadenia reticulata*), Atirasa (*Asparagus racemosus* Willd.), Mandukaparni (*Centella asiatica Urban.*) all contained cold potency and drugs possess Shita Virya, Madhura Rasa,

Snigdha and Madhura Vipaka promotes intellect restoration thus prevent dysfunctions associated with ageing. Ayurveda described that drug having Madhura rasa, Madhura Vipaka and Snigdha Guna help to prevent clinical manifestation of early ageing<sup>31,32</sup>. These drugs help to maintain normal physiological functioning of body, increases saumya dhatu and prevent dhatu kshaya. Similarly, medications that boost Agni and Oja potentiate dhatus and hence aid in the restoration process. Ayurveda suggests use of Rasayana as rejuvenator for the prevention of early ageing. Rasayana boosts Agni, Rasa and nourishes all Dhatus<sup>33,34,35</sup>.

#### CONCLUSION:

It is concluded aging process totally depend on Dosha unbalancing and Vayasthapana dashakya ingredients may be used to balance the Vata Dosha and nourishing the Kpha Dosha which is mainly responsible for delaying the aging process. The condition of ageing involving degenerative manifestation termed as geriatric syndrome. Ayurveda considered ageing as a cycle of time (Kala) and it is believed that Vata Dosha mainly contributes towards the early manifestation of ageing.

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