A Scientific Study of Constitutional Components of the Body in Reference to the *Vayasthapktva* of *Amlaki*

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ABSTRACT:

One of the most difficult specialties nowadays is geriatrics. Old age is an unwanted but unavoidable stage of life. While describing the *SwabhavaBalapravritta Vyadhi* (naturally occurring illnesses), Acharya *Sushrut* recognised *Jara* (Ageing) as a natural phenomenon. The many degenerative changes and the decaying process within the body are caused by the interaction of the dominating condition of *Vata Dosha* with the degeneration of *RasadiDhatu*, *Srotas*, and *Agni*. *Rasayana* is an *Ayurvedic* remedy that embodies the idea of anti-aging. Ageing and its negative consequences are prevented by *Rasayana* treatment. In addition to increasing mental and intellectual capacity, it promotes lifespan and disease immunity.

Vayasthapan, which means "restore the young age" or "stabilise ageing" or "stabiliser of body tissue/vital organs," *Vayasthapana* was stated by *Acharya Charak*. It is a term for medications that diminish or cease the ageing process. *Amlaki* is the medication of preference for *Vayasthapana karma* (to slow down ageing), according to *Charak* and *Vagbhatt*. *Ayushya*, *Deepaniya* (appetiser), and *Pachniya* (digestive) are further names given to it by *Charak*. *Amlaki* is a powerful *Rasayana* that lowers the risk of premature ageing and helps in avoiding sickness. It influences *Rakta Dhatu*. Carotene, vitamin C, and riboflavin are the three primary components of *Amlaki*. It reduces oxidation within the cell.

This work was designed to assess the efficacy of the *Vayasthapkatva* of *Amlaki* in various constitutional components of body. The healthy volunteers of mature age (*Prodhavastha* or *Madhyama Ayu*) and old age (*Vriddhavastha*) attending the O. P. D of Shriganganagar *Ayurveda* College Hospital, Rajasthan were enrolled and subjected to the therapy schedule. The patients were divided into two groups A and B. The group A was given *Amlaki Rasayana* and the group B was given *Amlaki Swaras*. Total duration of therapy was for three months. The ultimate effects of these two *Yoga* namely, *Amlaki Rasayana* and *Amlaki Swaras* were on age management, strength enhancing, immunity boosting and longevity.

The trial of three months proved that the *Amlaki* was efficacious in reducing the geriatric side effects by direct acting on the constitutional components of the body.

Keywords: *Amlaki Rasayana*, *Amlaki Swaras*, *Prodhavastha*, *Vriddhavastha*, *Yuvavastha*.

Introduction:

Jara, also known as *Vardhakya* (ageing), is described as something that has aged as a result of wearing out. *Ayurveda* views ageing as a normal phenomenon similar to hunger, thirst, and sleep rather than an illness. According to *Charaka's* theory of natural destructions (*Swabhavoparamavada*), while there is a reason for a being's manifestation, there is no cause for that being's cessation because birth and death are both states of natural flow. Every type of tissue in the body starts to show the impacts of ageing. *Jara* is characterised by a decaying process that shows up as numerous degenerative characteristics. Although these changes are natural (*Kalaja Vriddhavastha*-natural aging), they are not pleasant[i].

Everyone understands that after birth, a person must develop into an adult and eventually pass away, yet nobody wants to get old or pass away. Even if our choices and behaviours are to blame for the rapid biological ageing, most people view ageing and age-related disorders as abnormal. Making poor decisions that encourage unhealthy transformations(*Parinama*) of the body and mind, abusing the five senses, introducing discordant impressions through the five sense organs (*Pancha Jnanendriyas*), and abusing the five senses (*Pancha Tanmatras*) themselves all start the disease process, which causes both mental and physical suffering.[ii]

Dhatusamya (homeostasis) is weakened by mental and physical illness, which causes *Akalaja Vriddhavastha* (pathological ageing).[iii] The preservation of *Dhatusamya*, a condition of equilibrium of typical anatomical, biological, physiological, mental, and spiritual well-being, is approached holistically by *Ayurveda*. Therefore, homeostasis in *Ayurveda* refers to a condition of equilibrium (*Sama*) of tissue (*Dhatu*), energy systems (*Dosha*), heat of transformation (*Agni*), and metabolic wastes (*Mala*) that promotes healthy ageing (*Sukhayu/Kalaja Vriddhavastha*).[iv]

Rasayana is the study of nutrition with the goal of obtaining the greatest attributes of the body's tissues (*Dhatu*s), which will then promote lifespan, immunity, resistance to sickness, and enhanced mental capacities. One of the eight branches of *Ayurveda*, *Rasayana* includes a rejuvenated way of life, a healthy food, and rejuvenated herbal-mineral supplements.[v]

"*Amla*ki" is foremost amongst the Anti- ageing drugs. It is the best Rejuvenating herb. It is a potent Anti-oxidant, rich in Vitamin-c, Tannin and Gallic acid. It has properties like: - *Rasayana* (Adaptogenic), A*jara* (Anti-ageing), *Ayushprada* (prolonged cell life), *Sandhaniya* (Improves cell migration and cell binding). It promotes, protects and extends youthful state and thus, curtailing Ageing process.[vi]

Here the attempt was to assess the efficacy of *Amlaki* when given as *Amlaki Rasayana* and *Amlaki Swaras* in reducing the signs and symptoms of geriatric side effects.

Materials and Methods

The study is randomized controlled clinical trial. Total 40 patients were registered in the study.

Population: The population comprises of patients of mature age (*Prodhavastha*) and old age (*Vriddhavastha*) coming under the inclusion criteria.

Patients: The healthy volunteers were selected from the O. P. D of Shriganganagar *Ayurveda* College Hospital, Rajasthan. The subjective parametres of their selection was *Ashtvidh* and *Dashvidh Pareeksha* and the objective parameters were blood examination, spirometery etc. The case sheet was prepared for the *Dhi, Dhriti* and *Smriti* examination. *Anuman Pramana* was also used to know more about patients.

Inclusion criteria

- Age   : Between 40 to 60 yrs
- Sex   : Both sexes
- Signs and Symptoms: healthy volunteers only without any degenerative change in the body.

Exclusion criteria

- Age   : Below 40 and above 60 yrs
- Sex   : No discrimination

The below conditions were also excluded from the study.

1. Patient suffering from any disease with any Degenerative changes in the body.

2. Patients who were not ready to sign consent form (Unwilling patients).

Duration of the study:

Course of therapy: 90 days and 1-month follow-up.

Therapy schedule:

Patients both in A and B group were subjected to *Rasayana* therapy mentioned above.

Initially all the patients were subjected to *Snehan* and *Svedan* for 3 days. After *Snehan* and *Svedan* Mridu Virechan with Trifala Churna was done for 3 days. After this, in the group A *Amlaki Rasayana* was given and in the group B *Amlaki Swaras* was given. The dose for *Amlaki Rasayana* was 3 gram with the *Anupana* of *Madhu* (Honey) and at the other side the *Amlaki Swaras* was given in the dose of 15 ml along with *Madhu* and *Sharkara*.

Both *Amlaki Rasayana* and *Amlaki Swaras* were given twice daily (empty stomach) respectively in the both groups A and B.

Rasayana therapy Preparatory measures:

- *Snehan* and *Svedan* were performed.
- *Mridu Virechan* with *Trifala Churna* was done for 3 days

Major procedure:

Vatatpik Rasayana Sevan (*Amlaki Rasayana* and *Amlaki Swaras*) for 3 months two times a day (morning and evening).

Dose fixation:

The Average doses were taken for the *Amlaki Rasayana* (average *Churna* matra-3 gm) and *Amlaki Swaras* (average *Swaras* Matra-20ml) both.

Post-operative measures:

The patients were also advised to *Ahar* and *Achar Vidhi Palan*. But most of the healthy volunteers were married so they couldn't follow the *Brahmcharya Palan* which is mandatory in *Achar Vidhi Palan*.

Assessment criteria

Both subjective and objective parameters were considered for assessing the response. The physical examination was done by blood examination, spirometry for measuring vital capacity. The *Ayurvedic* examinations *Ashtvidh* and *Dashvidh Pareeksha* was also used for Volunteers response.

Collection of data:

The patients were examined thoroughly and both subjective and objective parameters were recorded. Routine blood and lung examinations were done before and after *Rasayana* therapy. The collected data were segregated under the following headings.

1. Data related to constitutional components of the body, the *Rasayana Amlaki* and its clinical findings.

2. Data related to response to *Rasayana* therapy.

Assessments were done before *Rasayana* therapy, after *Rasayana* therapy and after 1month follow-up. Total thirteen constitutional components of the body were measured before and after therapy.

- The vital capacity was assessed by spirometery.

- The body weight was measured by weighing machine.

- The *Dhi, Dhriti* and *Smriti* (mind power) were measured by *Prashn* and Anuman *Pareeksha*.

- The hemoglobin and other blood cells were measured by complete blood count (CBC) examination.

- The appetite (*Ahar Shakti*) was assessed by *Dashvidh Pareeksha* of the volunteer.

- The stool frequency was assessed by *Mal Pareeksha* (*Ashtvidh Pareeksha*).

- The Urine frequency was assessed by *Mutra Pareeksha* (*Ashtvidh Pareeksha*).

- The immunity was assessed by the history taking of volunteers on the basis of their frequent sickness.

- The *Agni Bala* was assessed by *Abhyavharan Shakti* which comes under *Dashvidh Pareeksha*.

- The *Nidra* (Sleep) was assessed by *Prashn Pareeksha* of the volunteers.

- The Vrishyata (aphrodeity) was assessed by *Prashn Pareeksha* of the volunteers and also by the semen analysis.

- The *Nadigati* (Pulse Rate) was assessed by checking the *Nadi* (Pulse Rate).

Data analysis:

Data collected was rendered to Master sheet and tables were constructed. Statistical constants like Arithmetic mean, Standard deviation and percentage were computed. Necessary diagrams and charts were prepared, student's 't' test was done to assess the effectiveness of therapy and to compare the means of the two group.

Results:

1. **Vital Capacity:**

In group A, after *Rasayana* therepy, the mean difference in vital capacity was found 16.25. Statistically the t- value for group A was 7.70($P<0.001$). In group B the mean difference of vital capacity was found 8.75. Statistically the t- value for group B was 5.41 ($P<0.001$). The therapy was statistically highly significant in the both groups.

2. **Body weight:**

In group A, after *Rasayana* therepy, the mean difference in body weight was found 0.1. Statistically the t- value for group A was 0.44($P<0.05$). In group B the mean difference was found 0.38. Statistically the t- value for group B was 2.09 ($P<0.05$). The therapy was statistically significant in the both groups.

3. **The *Dhi, Dhriti* and *Smriti* (mind power):**

In group A, after *Rasayana* therepy, the mean difference was found 0.4. Statistically the t- value for group A was 5.34 ($P<0.001$). In group B the mean difference was found 0.45. Statistically the t- value for group B was 3.94 ($P<0.001$). The therapy was statistically highly significant in the both groups.

4. **Hemoglobin:**

In group A, after *Rasayana* therepy, the mean difference was found 0.1. Statistically the t- value for group A was 3.45 (P<0.01). In group B the mean difference was found 0.27. Statistically the t- value for group B was 4.64 (P<0.001). The therapy was statistically very significant in the group A and highly significant in the group B.

5. **Blood Volume:**

In group A, after *Rasayana* therepy, the mean difference was found 1.9. Statistically the t- value for group A was 3.11 (P<0.01). In group B the mean difference was found 1.15. Statistically the t- value for group B was 2.47 (P<0.01). The therapy was statistically very significant in the both groups.

6. *Ahar Shakti* **(Appetite):**

In group A, after *Rasayana* therepy, the mean difference was found 0.00. Statistically the t- value for group A was 4.36 (P<0.001). In group B the mean difference was found 0.00. Statistically the t- value for group B was 2.85 (P<0.01). The therapy was statistically highly significant in the group A and very significant in the group B.

7. *Mal Pravritti* **(Stool frequency):**

In group A, after *Rasayana* therepy, the mean difference was found 0.2. Statistically the t- value for group A was 2.18 (P<0.01). In group B the mean difference was found 0.2. Statistically the t- value for group B was 2.85 (P<0.01). The therapy was statistically very significant in the both groups.

8. *Mutra Pravritti* **(Urine frequency):**

In group A, after *Rasayana* therepy, the mean difference was found 0.10. Statistically the t- value for group A was 1.45 (P<0.05). In group B the mean difference was found 0.10. Statistically the t- value for group B was 0.81 (P<0.05). The therapy was statistically significant in the both groups.

9. *Vyadhikshamatva* **(immunity):**

In group A, after *Rasayana* therepy, the mean difference was found 0.25. Statistically the t- value for group A was 3.20 (P<0.01). In group B the mean difference was found 0.10. Statistically the t- value for group B was 2.85 (P<0.01). The therapy was statistically very significant in the both groups.

10. *Agni Bala***:**

In group A, after *Rasayana* therepy, the mean difference was found 0.30. Statistically the t- value for group A was 2.85 (P<0.01). In group B the mean difference was found 0.20. Statistically the t- value for group B was 2.18 (P<0.01). The therapy was statistically very significant in the both groups.

11. *Nidra* **(Sleep):**

In group A, after *Rasayana* therepy, the mean difference was found 0.05. Statistically the t- value for group A was 0.57 (P<0.05). In group B the mean difference of was found 0.15. Statistically the t- value for group B was 1.37 (P<0.05). The therapy was statistically significant in the both groups.

12. *Vrishyata* **(aphrodeity):**

In group A, after *Rasayana* therepy, the mean difference was found 0.15. Statistically the t- value for group A was 2.52 (P<0.01). In group B the mean difference was found 0.00. Statistically the t- value for group B was 2.99 (P<0.01). The therapy was statistically very significant in the both groups.

13. *Nadigati* **(Pulse Rate):**

In group A, after *Rasayana* therepy, the mean difference was found 0.6. Statistically the t- value for group A was 1.67 (P<0.05). In group B the mean difference was found 0.95. Statistically the t- value for group B was 3.57 (P<0.001). The therapy was statistically significant in the group A and highly significant in the group B.

Discussion:

Ageing is a lifetime activity rather than just a characteristic of later life. We begin to age at birth and continue to age through childhood, adolescence, adulthood, and on to maturity.[vii]

The preliminary process that establishes a person's lifespan is ageing. It is a natural phenomenon that may be made worse by the one biggest variable, disease. Few people are fully disease-free when they reach old age.

Balyam, Madhyam, and *Jeernam* are the three basic stages of a man's life span. *Dhatu*s, senses, *Ojus*, vigour, virility, retention, remembrance, speech, and comprehension all deteriorate with age, which is known as *Jeerna vayah*. Old age is a time when *Vata Dosha* predominates and the body gradually degenerates, which affects the quality of *Dhatu*s. *Agantavah, Sareerah, Manasah*, and *Swabhavikah* are the four varieties of *Vyadhis* included in the *Chaturvidha* (4 sorts) of *Vyadhis*, which makes it evident that ageing is prone to poor health as we age.

Jara and *Mrityu* are both a part of the *Swabhavika Vyadhis* in this instance. For example, *Ayurveda* considers hunger, thirst, sleep deprivation, and death to be natural diseases. The *Ayurvedic* concepts of *Dosha*samya, *Dhatu*samya, *Agni*deepti, *Bala*, and others can be used to describe the condition of homeostasis. The most important of these elements are *Agni* & *Bala*, which mature interdependently with one another. *Bala*'s condition and the subject's

life depend on *Agni*, which is determined by *Agni*'s strength or normalcy. *Ojus*, the essence of the sapta*Dhatu*s, is another name for *Bala*. *Ojus* is present in every human organ, even at the molecular level. Senescence is brought on by its decrease and eventual disappearance.

Kapha predominates in the body from the early stage of life up to the age of 15 years. *Dhatu*s gradually evolve during the course of the following fifteen years, but *Satva* is not fully developed. Pitta predominates from 30 to 60 years of age. Existence of *Dhatu*s and *Satwa* are characteristics of middle age. The time of declining *Indriya*, memory, and other functions of the body begins around the age of 60. *Vata* predominates and both the quality and quantity of *Dhatu*s are impacted. The body slowly becomes emaciated and passes away.

Everyone's body ages naturally as they get older, however premature ageing is when the consequences of ageing appear earlier than it normally occur. It happens when a person's body seems to be older than they are. Premature ageing is typically caused by causes that are under our control and may be avoided. Extrinsic ageing is the term for this.

Prevention via good living is essential to avoiding premature ageing. *Ayurvedic* anti-aging (*Vayasthapana*) concepts are becoming increasingly significant.[viii]

Amla has outstanding antioxidant qualities and is a fantastic source of vitamin C. In addition, it slows down the ageing process of the skin by reducing free radical damage and enhancing skin texture and radiance. The best way to reap the advantages of *Amla* is through oral consumption rather than topical application.

According to *Ayurveda*, *Dhatu*kshaya, which is based on *Poshana* level, *Agni* level, and *Srotas* level, is the primary cause of ageing. Therefore, the anti-aging medications *Jivaniya*, *Brimhaniya*, *Balya*, *Rasayana*, and *Vajikarana* may be the most effective. Drugs with anti-oxidant and free radical capabilities are helpful in slowing down the effects of ageing. *Amlaki* is naturally rich in Tannins and Vitamin C, both of which are powerful antioxidants that provide protection from free radical damage and help support healthy aging.

Rather than vitamin C it contains many minerals, vitamins and micronutrients like calcium, phosphorus, iron. It is also a powerful antioxidant agent. Vitamin C is a good antioxidant agent, which makes *Amlaki* a powerful tool against a variety of conditions related to early ageing. The free radicals play the important role in skin aging via upregulation of matrix metalloproteinases (MMPs), thereby resulting in the degradation of connective tissue, tissue remodeling, and processes that orchestrate many of the degenerative processes associated with aging.[ix]

Conclusion:

The aforementioned explanation leads us to the conclusion that the *Vayahsthapana* drug *Amlaki* (*Rasayana*)'s mode of action is influenced by the levels of *Poshana*, *Agni*, and *Srotas*. It has been shown that *Vata* naturally grows as people age. The main causes of *Vata Vriddhi* are *Dhatu*kshaya and *Srotorodha*. The *Ayurvedic* remedies and medications like *Amlaki Rasayana* and *Amlaki Swaras*, which are discussed in the above description, may be used to treat *Dhatu*kshaya. *Vata*shamaka and *Kapahavardhaka* are often the medications with *Madhu*r *Vipaka*. Medications with the *Kapahavardhaka* property nourish all *Dhatu*s.

The *Ayurvedic Rasayana* therapy is the best therapy for the early ageing. It decreases the early rate of degeneration in the growing age. Analysis of various parameters before and after *Rasayana* therapy proved the specific efficacy in the improvisation of vital capacity, body weight, Manas *Bala*, Hemoglobin and blood volume, Appetite, stool frequency, urine frequency,immunity, *Agni Bala*, *Nidra*, Aphrodicity and *Nadi* Gati (pulse rate).

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