



ORIGINAL RESEARCH PAPER

Ayurveda

PHARMACOKINETICS OF RASAYANA DRAVYA WSR TO RAKTA DHATU- A REVIEW

KEY WORDS: Rasayana , Rakta, Dhātu, Ayurveda.

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ABSTRACT

Ayurveda is the Science of life which has following two main objectives- To maintain health of healthy individuals and To cure the disease of diseased ones. *Ayurveda* is one of the world's oldest systems of health. A long healthy life has been the cherished desire of man since antiquity. *Rasayana* is best way for this. It means the ways of attaining excellent *Rasa Dhātu* which rejuvenates all body tissues. It is the measure which prolongs longevity, develops positive health and mental faculties and imparts resistance and immunity against disease. There are seven *Dhātu* in person, *Rakta Dhātu* is among them, it plays important role in absorption and distribution of *Rasayana Dravya* on proper places in body. Different mode of action of *Rasayana Dravya*s are tried to be explained in this review article.

INTRODUCTION

Rasayana is one of the most prominent components of *Ayurvedic* medicine. *Ayurveda*, the Science of life, has two objectives, To preserve and promote the health of the healthy and, To alleviate the illness of the sick. Thus it has a dual role encompassing both "The Health" and "The Disease". Two fold aim of *Ayurveda* can be furnished through the special branch *Rasayana*. There has been the desire of mankind to lead a disease free life to its fullest extent. *Rasayana* is the only means to accomplish it.

The term "*Rasayana*" is composed of two words- "*Rasa*" + "*Ayana*"

The word "*Rasa*" is formed from "*Rasa Gatuo*" *Dhātu*, which literally means "one who moves day and night."

The word "*Ayana*" means pathway, movement, road, place, site etc. The term *Rasayana* essentially refers to nutrition and nourishment. More specifically it refers to bioavailability of nutrition. There can be many mechanisms through which a *Rasayana* remedy may accelerate the phenomenon of nourishment. *Rasayana* is a regimen or the substance with the help of which one can attain, metabolize and channelize the better quality of *Rasa*, *Raktadi Dhatus* up to the smallest unit of the body. By doing so, one can live long, healthy life free from ailments, attain physical and mental strength, retards the process of ageing and there will be longer life expectancy. *Raktadhātu* is an entity which is considered as one of the *Saptadhatus*, which is unanimously accepted by all *Ayurveda Acharya's*. The word *Rakta* is derived from *Sanskrit* word *RajaRanjane* which indicates red colour. Synonyms of *Raktadhātu* are *Rudhiram*, *Shonitam*, *Lohitam*. The food after digestion get absorbed into the blood. The transportation of *Ahara Rasa* into *Hridaya*/ heart and circulation of the same into various tissues continuously is the key to further transformation of *Dhatus*. In this article a review made on mode of action of *Rasayana* in terms of *Rakta Dhātu*.

Definition of Rasayana

- The means by which one gets the excellence of *Rasa Dhātu* (the nourishing fluid which is produced immediately after the digestion) and other *Dhatus* is known as *Rasayana*.
- According to *Sharangadhara Samhita*, *Rasayana* is a measure which delays ageing, prevent diseases and thus maintain the positive health.

MATERIAL AND METHODS

References related to proposed manuscript are collected from classical texts of *Ayurveda*. Various publications, internet, books and research papers related to the topic are collected.

Rasayana herbs strengthen the resistance of the body and protect it from infection-causing diseases. Some *Rasayana* medicines which are prescribed in somatic degenerative diseases condition for immuno-modulation and Adaptogenic effects are as follows:

- *Ashvagandha* (*Withania somnifera*)
- *Guduchi* (*Tinospora cordifolia*)
- *Amla* (*Emblica officinalis*)
- *Haritaki* (*Terminalia chebula*)
- *Shilajeet* (*Black bitumen or Mineral pitch*)
- *Suvarn Bhasm* (*herbal excipients*)
- *Shankhapushpi* (*Convolvulus Plenricaulis*)
- *Mulethi* (*Glycirriza glabra*)
- *Guduchi* (*Tinospora cordifolia*)
- *Mandukparni* (*Bacopa Monieri*)

| S.NO. | Rasayana | Indications |
|-------|---|---|
| 1. | Vijaysara (<i>Pterocarpus marsupium</i>) | Diabetes Mellitus, |
| 2. | Katuka (<i>Picrorhiza kurroa</i>) | liver disorders |
| 3. | Vidang (<i>Abies Webiana</i>) | Hoelminthic induced Gastrointestinal problem. |
| 4. | Bakuchi (<i>Psorylia Corylifolia</i>) | Leucoderma |
| 5. | Bhallatak (<i>Semecarpur anacardium</i>) | Piles and autoimmune disorders |
| 6. | Shirees (<i>Albizzia Lebek</i>) | Allergic conditions |
| 7. | Vacha (<i>Acorus clamus</i>) | Speech disorders |
| 8. | Haldi (<i>Curcuma Longa</i>) | Urinary, allergic and septic problems |
| 9. | Neem (<i>Melia Azadiracta</i>) & Khadir (<i>Acacia Catechu</i>) | Skin problems |
| 10. | Chirayata (<i>swertia chirayata</i>) | febrile disorders |

DISCUSSION

Ayurveda is the out come of the knowledge and vast experience of the ancient seers of the Indian scientist and philosophers of many millennia. Health is the fundamental right of human being. It is the supreme foundation of virtue of wealth enjoyment and salvation. Sufferings, disease and death are fundamental attributes of human life condition. The word "*Rasayana*" addresses the "optimisation of circulating the nourishing foods through tissues & cells." So getting adequate quantity & quality of *Ahara Rasa* and *Rakta Dhātu* circulates in the body and supplies nutrients to tissues through channels is the main concept of *Rasayana*. It is a comprehensive and specialized regimen capable of

producing healthful longevity and improved mental faculties by acting at the level of *Rasa* (Nutrition), *Agni* (digestion & metabolism) and the *Srotamsi* (microcirculation), thus enabling the organism to procure the best qualities of different *Dhatus*. The *Rasayana* is supposed to influence the very fundamental mechanisms of the living organism and to have rejuvenating effects on the body as well as the mind. Most of the *Rasayana* drugs (*Yoga/Kalpa*) have all the above fundamental qualities like stimulation of *Agni*, cleansing of *Srotāsa*, pacification of *Vāta Dosa* required for achieving adequate *Ahra Rasa*, along with the special quality of improving nutritional value of *Poaka Rasa* ultimately leading to the achievement of comprehensive effect as stated by *Acarya Caraka* as "*Lābhopayo Hi Sastnma Rasadinma Rasayanama* which produces the *Rasayana* effects mentioned in terms of *Vayasthapan, Ayuskara, Medhekara & Urjaskara* etc.

Thus it is clear that *Rasayana* drugs and measures act at one or all of the following three levels. As a result, rich, good and healthy *Dhatus* are produced in the body. This gives to a person longevity, vitality, lusture, improved intellect, immunity and happiness.

1. Acting at the level of *Rasa* by enriching the nutritional value of the circulating plasma e.g. *Satavari, Drākā, Sālparni* etc.

2. Acting at the level of *Agni* i.e. at the level of digestion & metabolism. This group of drugs improve the digestion, absorption and metabolism and have some anabolic effect e.g. *Pippali, Haritaki, Citraka* etc.

3. Acting at the level of *Srotamsi* i.e. at the micro-circulatory channels carrying nutrition to the tissues. These *Rasayanas* cleanse and activate the microcirculatory channels-i.e. do *Sroto-Sudhi*. Thus tissue nourishment is improved considerably leading to improved tissue health and their quality e.g. *Guggulu, Pippali, Rasona* etc.

Sushruta said that *Rakta Dhatu* is base of living body; it maintains life, Out of ten vital points, *Rakta* is one; hence utmost care should be taken of *Rakta*. The body is always supported by these. *Rakta* is also responsible for the existence, support and maintenance of body. He told that *Rakta* itself is life.

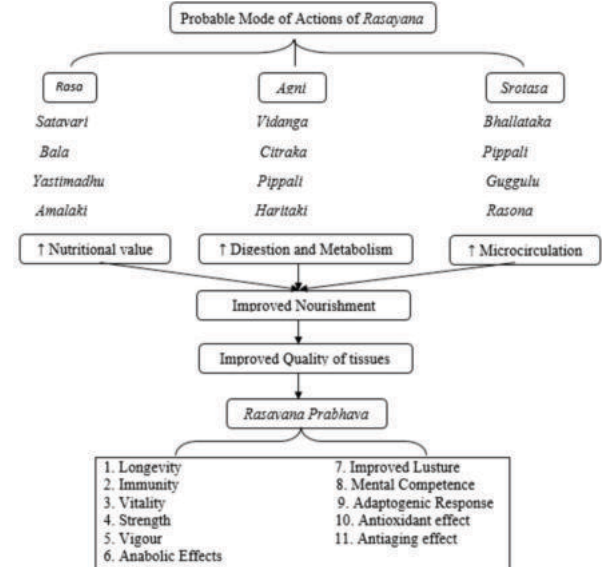
Rakta Dhatu keeps an individual alive. *Kshaya* and *Vridhhi* of other *Dhatu* are dependent on *Rakta Dhatu*. Living creatures are endowed with strength, complexion, happiness and longevity due to pure blood. Blood plays a vital role in the sustenance of *Prana*. *Rakta Dhatu* conducts *Prana* to every *Dhatu*, every cell of body, Like this *Rakta Dhatu* conducts *Rasayana* to every *Dhatu* and maintains the lustre to skin colour, nourishes *Mamsa Dhatu*, Cheerful complexion, rejuvenates all body issues and prevents premature aging and diseases.

The process of digestion converts the ingested food into *Ahara Rasa* (the essence of food). This *Ahara Rasa* gets into circulation (Blood) provide nourishment to various organs, tissues finally to the individual cells-the unit of life The promotion of the qualities of *Dhatus* i.e. Tissue elements The improved nutritional status and the better qualities of *Dhatus* lead to a series of secondary attributes of *Rasayana* as longevity, immunity against diseases, improved mental and intellectual competence etc.

The *Rasayana* is supposed to influence the very fundamental mechanisms of the living organism and to have rejuvenating effects on the body as well as the mind.

The term *Rasayan* means the ways of attaining excellent *Rasa* and *Raktadi Dhatu* which rejuvenates all body issues and prevents premature aging and diseases. Healthful longevity

has ever been cherished desire of man. It essentially refers to nutrition and nourishment. More specifically it refers to bioavailability of nutrition. Many *Rasayana* drugs of *Ayurveda* have been recently demonstrated to possess immuno-enhancer activity when tested on scientific parameters.



Pharmacokinetics

When *Rasayana* are administered orally The bioactive components must undergo the following bio pharmaceuticals /pharmacokinetic processes in the gut; Dissolution, Metabolism Absorption

Only those active components that are absorbable nourishes the cells and gives us desirable effects.

That process which facilitates optimum movement acquisition, assimilation and circulation of the essence of food or medicine to gain the above benefits is attained through *Rasayana* chikitsa. The benefits are focused attaining strength (*Balya*), life giving (*Jivaniya*), bulk promoting (*Brmhaniya*) and stabilising the ageing process which is anti-ageing (*Vayahsthapana*)

This is to keeps away old age (*Jara*); which can annihilate weakness (*Daurbalya*); which can cure incurable diseases and thus it can even overcome death (*Mrtyu*) and helps a person to live long for more than hundred years. Thus the individual gets long life to attain salvation.

| Potential Rasayana Action. | Brief Meaning |
|--|--|
| Aamahara- | Anti oxidants |
| Agni krta- | Provides metabolic functions |
| Balya- | Increase body strength/tonic. |
| Brimhana-promoting. | Increases body weight/bulk |
| Chakshushya-promoting vision. | Beneficial for eyes/ |
| DantyaDaardhyakara-teeth. | Beneficial for hardening of |
| Deepana- | Inducing the appetite |
| GarbhaVriddhikara-Garbhakara | Supporting foetal growth Resulting fertility |
| Garbha-sthaapaka-foetus against abortion | Resulting stabilisation of |
| Hridya- | Beneficial for heart, cordial |
| Jeevana- | Life giving, |
| Kanthya- | Beneficial for throat, sound |
| Kesharanjana - | Beneficial for maintaining hair color |

| | |
|-----------------------------------|--|
| Keshya- | Beneficial for hair growth |
| Medhya-intelligence | Promotes retentive |
| Paachana- | Promotes digestion |
| Pushtikrit- | Nourishing |
| Shonitaasthaapana- | Resulting stabilisation of blood formation and retention against bleeding. |
| Haemostatic | |
| Shrama-hara- | Stress relieving |
| ShukraJanana- | Promotes semen, reproductive tissues |
| SabnnyaPrabodhana- | Induce recovery from sensory malfunction recovery of consciousness |
| SabnnyaSthaapana- | Retention of consciousness |
| Santarpana-brmhana | Bulk promoting similar to |
| StanyaJanana - milk, galactogogue | Promotes formation of breast |
| Tarpana- | Refreshing, |
| Tvachya- | Beneficial for skin |
| Varnya- | Beneficial for skin colour |
| Vayasthaapana-anti ageing | Regulating ageing process, |
| Vyadhiksamatva- | Build immunity |
| Vishaghna- | Antipoisonous. |

The essence of digestion, the *Ahara Rasa* transformed into *Rasa Dhatu*. The transportation of *Ahara Rasa* into *Hrdya*/heart and circulation of the same into various tissues continuously is the key to further transformation of *Dhatu*s. The explanation of this process is given in detail based on 3 three logical reasonings.

1. Ksiradhadhi-Nyaya:

The logic of milk-*Ghee* transformation. Similar to the process of continuous transformation of milk to curd, curd to butter and butter to *Ghee*, the *Rasa Dhatu* (lymph) gets converted into Blood (*Rakta*), Blood (*Rakta*) to muscular tissues (*Mamsa*) and so on until seventh *Dhatu* and *Ojas* is formed.

2. Khalekapota-Nyaya:

The logic of corn and pigeon. The essence of *Ahara Rasa*, when it travels through different channels of *Dhatu*s (*Dhatumarga*), it nourishes the corresponding *Rasa* [24]. The portion of *Rasa Dhatu* responsible for nourishment of *Rasa*, develops the *Rasa Dhatu* (lymph); The component of *Rasa Dhatu* responsible for development of *Rakta* (blood) develop *Rakta-Dhatu* when it travels through *Raktavaha Srotas*. This happens like pigeons (*Kapota*) picks its required food from the heap of corn (*Khala*) and goes back to its nest. *Anna Rasa* is the heap of corn from which *Dhatu*s pick up its required nutrients.

3. Kedaarakula-Nyaya:

The logic of paddy irrigation. Similar to the irrigation of paddy fields, a common path ways get divided into many small channels to different parallel fields, thus water is served to all from a common place. *Ahara Rasa* being the common source of *Rasa Dhatu* which gets supplied to all *Dhatu*s, through *Rasayana* is get transformed into its own components. In the process of transformation of *Dhatu*s the stage of formation of essence (*Prasada* and *Kitta*) macro essence/*Sthula Saara* and micro essence (*Sooksma Saara*) (essence in minute particles) and waste which is *Kitta/ Mala* is formed. The essential waste produced at different stages of *Dhatu Paka* is mentioned and plays a major role in maintaining the equilibrium.

The possible mechanisms by which action of Rasayana can be represented in modern aspects are-

1. Immuno-modulator action
2. Anti-oxidant effect
3. Anti-stress and adaptogenic effect
4. Nootropic effect

5. Cyto-protective effect
6. Anabolic effect

CONCLUSION

Rasayana drugs are those drugs or medicines which are capable of imparting supreme *Rasas* and *Dhatu*s to the body and harmonizing the system of healthy persons. *Rasayana* aid in increasing *Vyadhikshamta*, *Sukha*, *Varna*, *Svara*, *Ayu*, *Bala* etc. and keep the signs of early aging aside. The benefits of *Rasayana* are Long life, excellent memory, brilliance, health and young age, radiating lustre, pleasing colour, commanding voice, great strength of body and sense organs, Influencing speech, reverential attitude and loveliness. How this is achieved and how this can be explained in it. There are many explanations to support various expert views. The concept of *Srotas* and *Dhatu*s play the major role in *Rasayana* effect. Similarly the *Agni* and the metabolic state of body tissues. *Rakta Dhatu* circulates in the body & supply nutrients to all *Dhatu*s & responsible for existence, support& maintenance of the body These organs get nourishment through *Rakta Dhatu* and are responsible for nourishment and maintenance of good health. *Rasayana* is to impede the aging process and to delay the degenerative process in the body. It is require to give information to people and aware them for *Rasayana* and its use and also there are lot of opportunities to work on it.

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