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Rasayana: A public health tool in communicable diseases

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Abstract

In India, a variety of endemic communicable illnesses represent a significant threat to public health. Both the epidemiology and the demographic landscape of India are changing. Life expectancy has grown, which has led to an increase in aging-related degenerative diseases and unhealthy lifestyles. However, communicable diseases continue to be prevalent and create serious problems for public health. Communicable diseases have turned into a severe threat to the society in our developing country because of the low socioeconomic standard, inadequate hygienic circumstances, and population explosion. When managing such a disorder where immunity and infections are key factors, *Rasayana* treatment is especially beneficial. According to Ayurved principles, a person's immunity can be increased by using a proper diet, lifestyle, and use of *Rasayana*. In reality, *Rasayana* is what intensifies each *Dhatu's* essence beginning with *Rasa*. Taking *Rasayana* can help a person's immunity grow, protecting him from contagious infections. They come in two varieties: *Urjaskara* (which boosts general immunity) and *Roganuta* (used in specific disease conditions). Numerous *Rasayanas*, such as *Shilajatu Rasayana* for *Prameha*, *Lauha* in *Pandu*, *Amalaki*, *Haridra*, *Chyavanprash*, etc., are used to boost immunity and treat illnesses.

Keywords: Rasayana; Communicable diseases; Immunity; Revitalization; Rejuvenation; Vyadhikshamatv

1. Introduction

Communicable diseases continue to be a major public health problem in India. Many communicable diseases like tuberculosis, leprosy, vector borne diseases (malaria, kala-azar, dengue fever, chikunguniya, filaria, japanese encephalitis), water-borne diseases (cholera, diarrheal diseases, viral hepatitis A & E, typhoid fever etc.), zoonotic diseases (rabies, plague, leptospirosis, anthrax, brucellosis, salmonellosis etc.) and vaccine preventable diseases (measles, diphtheria, tetanus, pertussis, poliomyelitis, viral hepatitis B etc.) are endemic in the country. In addition to these endemic diseases, there is always a threat of new emerging and re-emerging infectious diseases like COVID 19, Avian influenza, SARS, Novel H1N1 influenza, Hanta virus etc. Local or widespread outbreaks of these diseases result in high morbidity, mortality and adverse socio-economic impact. Community surveys have revealed that about one-quarter of all deaths in the country are due to diarrheal diseases, respiratory infections, tuberculosis and malaria. Many Expert Committees, dating back to the Bhore Committee in 1946, reviewed the existing health infrastructure/situation in the country and made recommendations needed to control diseases including communicable, non-communicable and emerging diseases.^[1] '*Rasayanachikitsa*' is a specialized section of *Ayurveda*, which mainly deals with the preservation and promotion of health by revitalizing the metabolism and enhancing immunity.

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2. Material and methods

This article is based on a review of *Ayurvedic* texts. Materials related to *Rasayana* concept, and other relevant topics have been collected from the main *Ayurvedic* texts like *Charaka Samhita*, *Sushruta Samhita*, and available commentaries on these. We have also referred to the modern texts and searched various websites & reports to collect information on the relevant topics.

2.1. 'Rasayana' concept of 'Ayurveda'

In *Ayurveda*, on the basis of their therapeutic effects *Bheshaja* (medicine) is described to be of two types^[2]:-

2.1.1. Svathasyorjaskara

That *Bheshaja* which promotes strength and immunity in the healthy individuals.

2.1.2. Roganuta or Rogaghna

That *Bheshaja* which alleviates various disorders.

That *Bheshaja* which promotes strength and immunity, mostly in the healthy individuals, is usually included in *Vrishya* (Aphrodisiac) and *Rasayana* therapy (rejuvenative and promotive treatment).^[3] *Rasayana* therapy is one of the branches of *Ashtanga Ayurveda*. The word *Rasayana* means the way for attaining excellent *Rasadidhatus*.^[4] Such a phenomenon is conducive to promotion of the qualities of the *Dhatus*. The improved nutritional status and the better qualities of the *Dhatus* lead to a series of secondary attributes of *Rasayana* which bestow longevity, impart strength & *Ojabala* etc. *Oja* is the factor responsible for *Vyadhikshamatva* (immunity) of an individual.^[5] *Rasayana* therapy has been classified by *Charaka* into two groups:^[6]

- Kutipravesika (Indoor) *Rasayana* Vidhi and
- Vatatapika (Outdoor) *Rasayana* Vidhi.

According to the requirement of an individual the *Rasayana* drugs are divided into three groups:^[7]

- **Kamya Rasayana (promotor of normal health)**:- e.g. Triphala *Rasayana*, Chavanprasha, Brahma *Rasayana*, Amalaki *Rasayana*, Louha *Rasayana* etc.
- **Naimittika Rasayana (promotors of specific vitality in specific disease)**:- e.g. Tugaraka and Shilajatu for Kustha and Prameha respectively.
- **Ajasrika Rasayana (Dietary Rasayana)**:- e.g. milk, ghee etc.

Achara Rasayana is just like a code of good conduct and habit. This is a non-drug approach to *Rasayana*. In this, without using a pharmacological recipe, one can gain all the benefits of *Rasayana*.

The term '*Rasayana*' consists of two words viz. *Rasa* (the essence of food i.e. *Ahara Rasa*) and '*Ayana*' (the sense of attainment). *Acharya Charaka* has described *Rasayana* as the means of obtaining the best qualities of *Rasadi Dhatus*. It is believed, in *Ayurveda* that the qualities of the '*Rasadhatu*' influence the health of other *Dhatus* (tissues) of the body. Hence any medicine that improves the quality of '*Rasa*' ('*Rasayana*') should strengthen or promote the health of all tissues of the body. '*Rasayana*' drugs act inside the human body by modulating the neuro-endocrino-immune systems and have been found to be a rich source of antioxidants.^[8] These *Rasayana* drugs are said to possess the following properties: they prevent ageing, re-establish youth, strengthen life, brain power and prevent diseases. *Rasayana* therapy is done for a particular period of time with strict regimen on diet. '*Rasayana*' drugs are very rich in powerful antioxidants and are good hepatoprotective and immunomodulating agents. '*Rasayana*' is not a drug therapy, but is a specialized procedure practiced in the form of rejuvenation recipes, dietary regimen and special health promoting right conduct and behavior, i.e. '*Achara Rasayana*'. *Sushruta* while defining '*Rasayana*' therapy says that it arrests ageing ('*Vayasthapam*'), increase life span ('*Ayushkaram*'), intelligence ('*Medha*') and strength ('*Bala*') and thereby enable one to prevent disease.^[9] *Rasayana* drugs enhances the functions of the whole body system. '*Rasayana*' treatment for rejuvenation is done after the body system is thoroughly cleansed by '*Panchakarma*' therapy.^[10] '*Panchakarma*' is essentially a pretreatment equipping the body tissues for '*Rasayana*' therapy. *Sushruta* observed that a person, whose system is not been previously cleansed by proper purification remedies, cannot expect good results with '*Rasayana*' treatment.

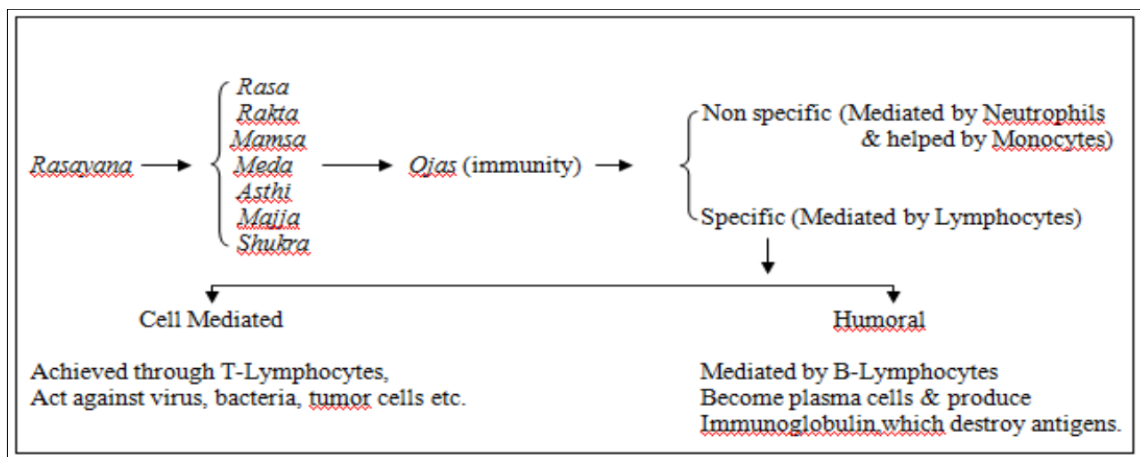
2.2. Mode of Action of Rasayana Drugs

The word ‘Rasayana’ addresses the “optimization of circulating the nourishing foods through tissues & cells.” so getting adequate quantity & quality of *Ahara Rasa* with its proper circulation through channels is the main concept of *Rasayana* therapy. The concept of *Rasayana* therapy is not a single drug treatment but 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*.^[11]

2.3. Rasayana-Vyadhikshamatva

Ayurveda has an unique concept of *Ojas*, which is the essence of all the *Dhatus* and is responsible for vital strength of the body and resistance against the disease.^[12] *Rasayana* is believed to promote the process of *Dhatuposhana* and enrich *Ojas* leading to *Vyadhikshamatva*. The defense mechanism present in the body allows us to survive in the potentially hostile world of infectious agents. The relation of *Rasayana* and *Ojas* is mentioned in following table no.1:

Table 1 Hypothesis depicting relation of rasayana and ojas: [13]



2.4. Biological Effects of Rasayana Drugs

Various studies are done on different aspects of *Rasayana* drugs can some contemporary terminologies are found which have actions similar to *Rasayana* like-

- Immunomodulator
- Adaptogenic
- Antioxidant
- Nootropic
- Antistress

These terms can be understood as follows-

2.4.1. Immunomodulator

A substance that alters the immune response by augmenting or reducing the ability of the immune system to produce antibodies or sensitized cells that recognize and react with the antigen that initiated their production.^[14]

eg. *Tulsi*, *Guduchi*, *Shatavari* etc.

2.4.2. Adaptogen

An adaptogen is a metabolic regulator which increases the ability of an organism to adapt to environmental factors, and to avoid damage from such factors. Environmental factors can be either physiological (external), such as injury or aging, or psychological (internal), such as anxiety. ^[15] Some adaptogenic herbs are *Ashvagandha*, *Tulsi*, *Haridra*, *Pippali*, *Amalaki*, *Guduchi*, *Shatavari* etc.

2.4.3. Antioxidant

Antioxidants are defined as 'substances whose presence in relatively low concentrations significantly inhibits the rate of oxidation of targets' being present in serum, these antioxidants circumvent the damage caused by oxygen free radical. [16] e.g. *Triphala*, *Guggula*, *Haridra* etc.

2.4.4. Nootropic

These are substances which promote intelligence and functions of brain. These drugs can be categorized as *Medhya Rasayana* drugs. *Acharya Charaka* has described four important *Medhya Rasayana* drugs namely-*Mandukparni*, *Guduchi*, *Yashtimadhu* and *Shankhapushpi*. [17]

2.5. Mode of action of some Rasayana drugs

Majority of *Rasayana* drugs works on multiple areas and helps in achievement of *Vyadhikshamatva* through its *Dipana*, *Pachana*, *Medhya*, and nonspecific immune buster properties. Pharmacology of some *Rasayana* drugs has been given in the below table no.2:

Table 2 Pharmacological action of some Rasayana drugs

Rasayana Drugs	Proved Pharmacological Actions
Yashtimadhu (<i>Glycyrrhiza glabra</i> Linn.)	Enhance the macrophage membrane function ^[18]
Guduchi (<i>Tinospora cordifolia</i> Willd.)	Inhibit the lipid per oxidation and superoxide and hydroxyl radicals in vitro ^[19]
Amalaki (<i>Emblca officinalis</i> Gaertn.)	Strengthen the defence mechanism against free radical damage induced during stress ^[20]
Haritaki (<i>Terminalia chebula</i> Retz.)	In immune-modulation studies, humoral immunity was enhanced where T-cell counts remained unaffected in the animals, but cell-mediated immune response was stimulated. ^[21]
Ashvagandha (<i>Withania somnifera</i> Dunal.)	Possesses free radical scavenging activity ^[22]
Brahmi (<i>Bacopa monnieri</i> Linn.)	Exhibit anti-stress activity. ^[23]
Neem (<i>Azadiracta indica</i> A. Juss)	Shows immunomodulatory effect. ^[24]
Tulsi (<i>Ocimum sanctum</i> Linn.)	Strengthens the immune response by enhancing both cellular and humoral immunity, shows anti-inflammatory action. ^[25]
Vacha (<i>Acorus calamus</i> Linn.)	Potent antioxidant by inhibition of 1, 1- diphenyl-2-picrylhydrazyl (DPPH) free radical. ^[26]

3. Discussion

When the etiology of communicable diseases is discussed carefully, it is observed that, these diseases are caused due to the *Agantuka Karana* and coming under the *Adhibhautika* or *Sanghatabalapravruttha Vyadhi*, which is an *Aupasargika Roga*. *Sushruta* has clearly mentioned regarding *Aupasargika roga*.^[27] Hence Communicable diseases is *Sanghatabalapravruttha* in origin, implying *Bhutas* or living creatures or viruses etc are the causative agents and the disease can be transmitted from one person to another person. *Vyadhikshamatva* is interpreted as *Vyadhi Balavirodhitva* (antagonistic to strength and virulence of disease) and *Vyadhi Utpadaprativandhakatva* (the capacity to inhibit or neutralize or resist or overcome disease causing agents). This *Vyadhikshamatva* depends on the presence of *Bala* or *Oja* in the body. *Oja* represents vitality, vigour and capacity to resist decay and disease. *Ojas* is the *Sara* or essence of the *Dhatus*. *Ojas (Bala)* is responsible for promoting the stability and strength of the organs of the body. The loss or deficiency of *Ojas* leads to wasting, decay and degeneration.

Communicable diseases are as mentioned, produced due to infections, which manifests its symptoms prior to loss of immunity or *Vyadhikshamatva*. *Medhya Rasayana* drugs possess potent antianxiety effects. *Kamya Rasayana*, *Naimittika Rasayana* and *Ajasrika Rasayana Dravyas* can be helpful for the promotion of the *Rasadidhatus* and responsible for increase of *Oja*. For the preventive aspect of the disease *Achara Rasayana Sevana* can be done, which can decrease the spread of the disease. *Ayurvedic* concept of '*Rasayana*' seems not only to embody the principal aspects of new hypothesis centered on an immuno-endocrine psychoneuro axis but also to go beyond it by encompassing the entire human system with its diverse and complicated immune endocrine pathway.^[28]

4. Conclusion

Procedures of revitalization and rejuvenation (*Rasayana* therapy) can be adopted to increase the power of resistance to disease, these procedures retarded advancement of aging also. *Rasayana Dravyas* are considered to improve *Vyadhikshamatva* of the body; it may be helpful to promote the health of the person suffering from communicable diseases. From above, it can be concluded that *Rasayana* can be used for prevention of communicable diseases. Vast research studies are needed so that can be used as preventive tool in future.

Compliance with ethical standards

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Disclosure of conflict of interest

The authors declare that there was no conflict of interest regarding the publication of manuscript.

References

- [1] Report of the Working Group on Disease Burden for the 12th Five Year Plan WG3 (1): Communicable Diseases page 22.
- [2] Ravi Dutt Tripathi, *Charaka Samhita* of Agnivesha, *Chikitsa Sthana*. 1st ed, Varanasi: Chowkhambha Sanskrit Series, 2005. p.4.
- [3] Ravi Dutt Tripathi, *Charaka Samhita* of Agnivesha, *Chikitsa Sthana*. 1st ed, Varanasi: Chowkhambha Sanskrit Series, 2005. p.5.
- [4] Yadavji Trikamji Acharya, Commentary Ayurveda Dipika of Chakrapanidatta on *Charaka Samhita* of Agnivesha, *Chikitsa Sthana*. 8th ed, Varanasi: Chowkhambha Sanskrit Series, 2005. p.376.
- [5] Trikamji Acharya, Commentary Nibandhasangraha of Sri Dalhanacharya on *Sushruta Samhita* of Sushruta, *Sutra Sthana*; 8th ed, Varanasi: Chowkhambha Sanskrit Series, 2005. p.71.
- [6] Ravi Dutt Tripathi, *Charaka Samhita* of Agnivesha, *Chikitsa Sthana*. 1st ed, Varanasi: Chowkhambha Sanskrit Series, 2005. p.7.
- [7] Trikamji Acharya, Commentary Nibandhasangraha of Sri Dalhanacharya on *Sushruta Samhita* of Sushruta, *Chikitsa Sthana*; 8th ed, Varanasi: Chowkhambha Sanskrit Series, 2005. p.498.
- [8] *Brahma*, S.K., Debnath, P.K. Therapeutic importance of *Rasayana* drugs with special reference to their multi-dimensional actions. *Aryavaidyan*. 2003; 16; 160–163.
- [9] Kaviraj Dr. Ambikadutt Shastri, *Sushruta Samhita* of Sushruta, *Sutrasthana*; 1st ed, Varanasi: Chowkhambha Sanskrit Series, 2011.p.6.
- [10] Joshi, S. *Ayurveda* and '*Panchkarma*'. Motilal Banarasidas Publishers, Delhi, 1998.
- [11] Prof. Ajay Kumar Sharma, *Elements of Rasayana Therapy in Ayurveda*.

- [12] Trikamji Acharya, editor, (8th ed.). Commentary Nibandhasangraha of Sri
- [13] Dalhanacharya on *Sushruta Samhita* of Sushruta, 8th ed, Varanasi: Chowkhambha Sanskrit Series, 2005.p.71.
- [14] Banamali Das et.al. Concept of *Rasayana* therapy with special reference to AIDS. AYU. 2009;30 (3); 238-42.
- [15] <http://medical-dictionary.thefreedictionary.com/immunomodulator>
- [16] <http://en.wikipedia.org/wiki/Adaptogen>
- [17] <http://medical-dictionary.thefreedictionary.com/immunomodulator>
- [18] Ravi Dutt Tripathi, *Charaka Samhita* of Agnivesha, *Chikitsa Sthana*. 1st ed, Varanasi: Chowkhambha Sanskrit Series, 2005. p.43.
- [19] Korhalkar Anagha et al, “Pharmacological Studies of *Yashtimadhu* in various Animal Models- A review” GJRMI. 2013; 2(3); 152-164.
- [20] Mathew S et al, “Antioxidant activity of *tinospora cordifolia* and its usefulness in the amelioration of cyclophosphamide induced toxicity” - Amala cancer research centre, trissur, Kerala, India 1997.
- [21] Rege, N.N., Thatte, U.M., Dahanukar, S.A. Adaptogenic properties of six *Rasayana* herbs used in *Ayurvedic* medicine. *Phytotherapy Research*. 1999; 13, 275–291.
- [22] Prakash Chandra Gupta. “Biological and pharmacological properties of *Terminalia chebula* retz. (haritaki)- an overview”. *International Journal of Pharmacy and Pharmaceutical Sciences*. 2012; 4(3).
- [23] Panda, S., Kar, A. Evidence for free radical scavenging activity of *Ashwagandha* root powder in mice. *Indian Journal of Physiology and Pharmacology*. 1997;41;424–426.
- [24] Chowdhari DK, Parmar D, Kakkar P, Shukla R, Seth PK, Srimal RC. Antistress effects of bacosides of *Bacopa Monnieri*: modulation of Hsp 70 expression, superoxide dismutase and cytochrome P450 activity in rat brain. *Phytother Res*.2002;16:639-45 [Pubmed]
- [25] Upadhyay et al, *Int J Immunopharmacol*.oct.1992; 14(7):1187-93.
- [26] Santum induces apoptosis in A549 lung cancer cells and suppresses the in vivo growth of lewis carcinoma cells. *Physiotherapy Research*, 2009,23(10), 1385-1391.
- [27] Acuna, U.M., Atha, D.E., Ma, J., Nee, M.H., Kennelly, E.J. Antioxidant capacities of ten edible North American plants. *Phytotherapy Research* 2002; 16; 63–65.
- [28] Trikamji Acharya, editor, (8th ed.). Commentary Nibandhasangraha of Sri Dalhanacharya on *Sushruta Samhita* of Sushruta, *Sutra Sthana*; 8th ed, Varanasi: Chowkhambha Sanskrit Series, 2005; 198.
- [29] Handa, S.S. '*Rasayana*' drugs. Part I. *Pharma Times*. 1993;25;9–15.

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