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Scope of Rasayana in present era: A review

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Abstract

Every system of medicine emphasizes on treating the disease but in Ayurveda, treating a disease is always secondary rather, maintaining and preserving health is the primary objective of health-care plans. May be for this reason, utmost importance has been given for maintenance and sustenance of health in Ayurveda considering physical, mental, and sexual aspects. To achieve this goal, daily regimen and seasonal regimen, code of conduct of diet and social behaviour are mentioned in Ayurveda along with implication of *Rasayana*. *Rasayana* is one among the eight speciality branches of Ayurveda and is very useful to enhance the immunity of the person to keep him away from disease. In contrast to our intense desire to be always youthful and energetic, the phenomenon of ageing surely happens and is also inevitable. Many factors especially altering food habits, emotional conflicts, stress and environmental pollution accelerates this universal phenomenon. Moreover, towards the middle age, the rate of catabolic events happening in the body increases to a higher extend. This in turn causes digestive and metabolic disturbances which interfere with production of apt quality of *dhatu*s and thus the formation of *ojas*. Subsequently *varna* (complexion), *bala* (strength) and *sneha* which are inherent *gunas* of *ojas* gets depleted. As a consequence, individual suffers from low immunity and is vulnerable to most of the diseases. *Rasayana* have exceptionally significant role in disorders related to sedentary life style, work related stress, improper food habits and non-communicable diseases, in the modern era. Scientific understanding *Rasayana* infers its acceptance as nutraceutical, anti-oxidant and immuno-modulators. As a result of change in life habits, entire population is facing a lot of new emerging diseases. Especially in the current scenario of COVID 19 pandemic, it is the need of the hour to discuss the practical utility of *Rasayana* in our daily life with special reference to preventive aspects.

Keywords: *Rasayana*, *ojas*, anti-oxidant, immuno-modulators, *dhatu*s, preventive

1. Introduction

Ayurveda is the science of life that deals with every aspect of the health of the individual. It has two main goals i.e. to protect the health of the healthy individual and to cure the disease of the diseased^[1]. Today is the age of a busy lifestyle and one is not capable to follow the basic norms of a healthy and happy life, because of carelessness and professional obligations. Therefore, they encounter multiple diseases as there is a gradual decline in immunity in most human beings. The unhealthy food habits that are practiced today such as the combination of diets opposite in property (*viruddhahara*), untimely food and not following the norms of nutrition as explained in classics too invites fastened ageing process and a greater number of pathologies^[2]. In addition to these behavioural factors, the causes such as non-suppression of jealousy, sadness, fright, anger, etc. also to be considered. Because of these components, the *rasa dhatu* of good quality will not be produced and *srothoavarodha* (obstructing the channels) is manifested. Therefore, nutrition of additional *dhatu*s will also be hindered and inequality of *doshas* (body humours) occurs which causes the individual susceptible to conditions from *dhatukshaya* (depletion of tissue) and *ojokshaya*. The *vyadhikshamatwa* (immunity) decreases day by day and due to the low immunity status, society is suffering from unhealthy ageing^[3].

Several novel diseases are disseminating worldwide nowadays. Even though modern medicines are much advanced and have promising results in treating most of the diseases, a list of the adverse effects are observed along with these drugs which is a real problem for the society. *Rasayana* is one of the comprehensive disciplines of Ayurveda, which comprises a specialized use of herbs, herbo-mineral formulations, dietary articles, and lifestyle along with self-discipline with social etiquette to achieve the optimum state of tissues and systems of the body so that there is the least effect of etiological factors on the body^[4]. In other words, it can be stated that *Rasayana* is a way to achieve homeostasis and thus retarding the process of ageing phenomenon and prevention of diseases.

Due to stressful and sedentary lifestyle, environmental pollution, etc., human beings are worsely affected, and they are susceptible to attain premature ageing and various disorders,

where Rasayana is proved as effective against the harmful effects. Most Rasayana medicines have stress relieving as well as adaptogenic properties. According to Ayurveda, *Rasayana* brings about proper nourishment, growth and enhanced function of all the seven *dhatu*s and thus improves *ojas* (excellence of tissues). Rejuvenation therapy affects body and mind, at the same time it checks the effect of early ageing and enhance the body's resistance to disease [5]. Modern scientific observations on *Rasayana* shows that rejuvenating drugs protects the body against detrimental effects of the atmosphere in which we survive, by augmenting the individual's capability to fight against disease-carrying organism by enhancing the immune system.

Ayurveda classifies *Rasayana* into various types that can be used according to their looked-for need. By nourishing the seven *dhatu*s, *Rasayana* provides healthy life, better intellect, and quality in lustre, complexion and voice, optimal improvement of physical strength and sense organs [6]. *Rasayanas* possess antioxidant properties which prevent the damage caused by free radicals. *Rasayana* is a modality which provides proper nourishment to each and every cell or tissue of body. It normalizes cell functions and preserves health at molecular level.

Medhya Rasayana, which sharpens the intellect is specifically indicated in disorders related to neuronal dysfunction. *Acharya Rasayana* deals with behaviour, conducts and social etiquette of an individual [7]. *Kutipraveshika* (by entering in specialized compartment) and *Vatatapika* (with routine activities) are special methods for *Rasayana* therapy with eminent effects. There is wide variety of single herbs and compound formulation that can be used as *Rasayana*. These drugs have wide range of actions on different systems of body according to their indications. *Rasayana* drugs can also be selected according to the *prakriti* (body constitution) of a person and for nourishment of specific *dhatu*s. There are kinds of diseases mentioned in Ayurveda including *Swabhava bala pravritta vyadhi* (natural diseases) such as *kshudha* (hunger), *nidra* (sleep), *pipasa* (thirst), *jara* (ageing), and *mrityu* (death) [8]. These disorders cannot be healed entirely but can be managed as *Rasayana* is proved more effective in delaying the *jara* (ageing).

Acharya Chakrapaniquotes the excellence of *Rasayana* therapy in treating these sufferings by the example of Chyavana rishi who regained his youth by *Rasayana* therapy. Ayurveda classics has made its use mandatory for the establishment of whole life happy and to be free of premature ageing which is caused due to irregular food pattern and isolated lifestyle, especially in the modern era. It also strengthens the mental capacity and facilitates the person to possess psychological wellbeing. Hence, it is the need of hour to adopt the ancient wisdom of *Rasayana* in various aspects for the protection as well as maintenance of health and longevity. Considering the grave circumstances of the COVID-19 pandemic, one must develop a healthy immune system for survival. *Rasayana* drugs provide nutritional supplementation along with enhancing immunity to fight against such infections. *Rasayanas* mentioned in classics can be administered with all its benefits by modifying their form, dose, duration of use, adjuvants etc. based on practical knowledge considering the current scenario, life style changes and health challenges.

2. Materials and methods

Ayurvedic classics, the journals and case studies pertaining to *Rasayana* therapy were analysed to explore the concept as

well as the applicability of *Rasayana* therapy.

2.1 Objectives: To explore the practical utility of *Rasayana* therapy in present era.

2.2 Challenges faced in present era

Long working hours, night shifts, unhealthy dietary habits and work-related stress have turn out to be an identity of this modern era. Such kind of schedule some way or in the other, disturbs physical as well as mental status. Major life style changes in current scenario can be summarized as;

1. Changes in food habits viz untimely food intake (*Akalabhojana*), Incompatible foods, fast foods (*Viruddhahara*), Suppressing hunger due to busy schedule, dieting, skipping foods (*Vegadharana*), intake of foods with distressed mental status (*krodha, soka, bhayapeedi thamana*) etc.
2. Improper sleeping pattern due to work overload, stress, night shifts etc.
3. Inappropriate sex habits resulting from mental stress, busy life and lack of communication, improper nutrition etc.
4. Continuous standing job nature.
5. Emotional stress mainly in IT field, banking staff etc. to meet the targets, job insecurity especially due to COVID 19 pandemic, financial crisis.
6. Lack of sunlight exposure, work at home and long sitting postures.
7. Over use of eyes as in mobile, laptop use especially in students during the pandemic situation as they are forced to attend online classes for long hours.
8. Lack of proper hygiene
9. Change in bowel habits, suppression of natural urges
10. Environmental pollution
11. Addictions such as smoking, alcohol which has coined the label of social status
12. Unhealthy pre-conceptual, gestational and post conceptual care which also affects adversely the mental and physical wellbeing of the progeny.

As part of this changed life style, many new dreadful diseases or health challenges are being faced by the mankind.

2.3 Role of Trayopasthambhas in health: The *trayopasthambhas* (tripod of life) viz *Ahara* (food), *nidra* (sleep) and *brahmacharya* (sexual activity) are very much deranged from the normal pattern. *Asatmya indriyartha samyoga* (nonuse /overuse / improper use of the sense organs, *parinama* (time factors) and *prajnaparadha* (false judgement /mistakes from the individual) are the etiological factors [9]. The health of the individual, *bala, ojas* and thus immunity is dependent on this *trayopasthambhas* as well as mental status. So those unhealthy habits can end up in obesity, diabetes, hypothyroidism, dyslipidemia, and hypertension etc., termed as life style disorders. A large number of women are having PCOD (polycystic ovarian disease), menstrual irregularity, anemia, hypothyroidism etc. mainly due to the unhealthy diet habits along with other factors.

2.4 Role of psychological factors: Irritable bowel syndrome (IBS) is a functional gastrointestinal disorder characterized by abdominal pain and change in bowel pattern mainly related to psychological disturbance of the subject. In *charakasamhitha*, it is opined that the food taken in situations of mental stress/ anger/fear will not digest properly and will contribute

formation of *ama* [10]. This leads to *Grahanidushti* leading to improper *grahana* and *pachana* (abnormal digestion) of the food resulting in manifestation of IBS.

2.5 Role of sedentary life style in diseases: Coronary artery disease (CAD) and cardio vascular disease (CVD) are manifested as complications of obesity and varicose vein and ulcers resulting from continuous standing. Skin manifestations, Vit D deficiency, joint diseases, degenerative changes, cervical spondylosis, hemorrhoids etc. are observed due to continuous sitting, improper hygiene and malnutrition.

2.6 Role of Dinacharya and sadvritta: Myopia (short sight) is reported even in primary school children suggesting the lack of proper nutrition, excess use of the *indriya* and non-understanding of regular bowel pattern. Among the *dinacharya* mentioned in Ayurveda, *souchakriya* (bowel evacuation) is mentioned with prime importance [11] and also while mentioning the diseases as part of suppression of *sakritvega* (urge to defaecate), heart disease and eye diseases (vision abnormalities) are listed which shows the relation [12].

2.7 Role of hygiene, addictions and maternal health: Leucorrhoea, allergic complaints, chronic lung diseases (COPD), liver diseases etc. are also observed. Autism, Attention deficit hyper active disorder (ADHD), congenital anomalies, behavioral disorders etc. are seen in large numbers and maternal life style including mental status (mainly pre-conceptional and gestational care) is having very important role in the causation of the same. In such areas, *Rasayana* contributes an important role in preventive as well as health promotive (curative) aspect.

3. Discussion on the scope of Rasayana

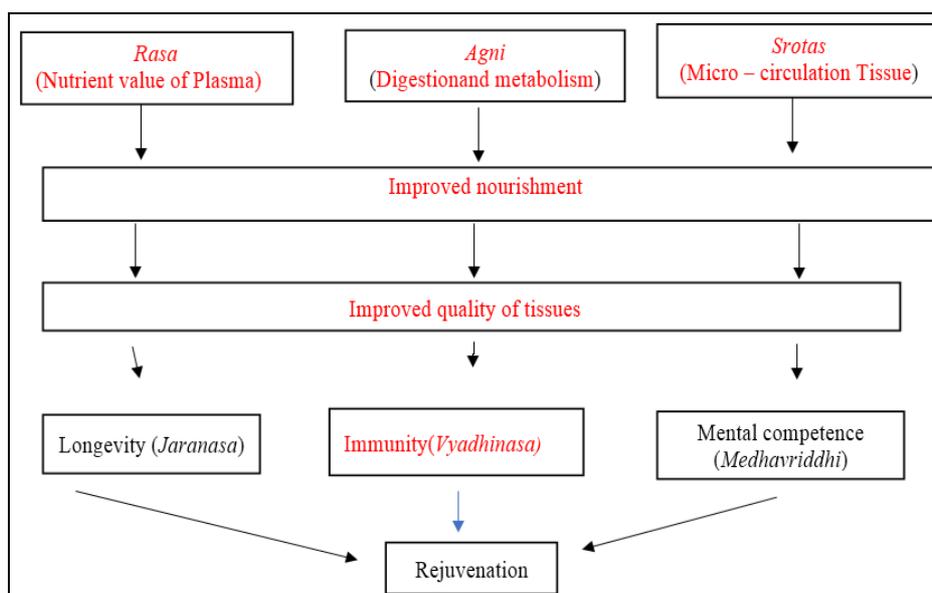
The *Rasayana* is a way to achieve homeostasis, retards the process of ageing phenomenon and aids prevention of diseases. In healthy condition, *Rasayana* can be understood as nutritional dynamics for rejuvenation of body and psyche. Ageing in Ayurveda is considered as condition occurring due

to the natural process of degeneration and thus, preventing premature ageing and leading to healthy ageing should be the objective of rejuvenation. In today's era, human life have been affected by drastic climate change, diet and lifestyle, augmented mental stress, newly emerging infections and metabolic disorders. Survival in this changed environment and compete with the pace of life is a biggest challenge which can be achieved only through adequate immunity.

Vyadhikshamatva (immunity) is categorised into two types one is *vyadhi bala viroditwam* (factors that reduce the intensity of disease) and second is *vyadhyutpadakapratibandhakatvam* (factors that resist the development of disease). When the etiological factors come in contact with our body they try to produce disease, but our body tries to resist the disease at the same time. Body prevents the development of disease or resists a developed disease, is called *vyadhikshamatva*. Immunity is the ability of the body to protect against all types of foreign bodies such as bacteria, virus, and toxic substances etc. which enter the body. There are two major types of immunity: 1) Innate immunity – inborn capacity to resist any invader in general. Innate immunity is inherited by the organisms from the parents and protects it from birth throughout life. 2) Acquired immunity – the resistance developed in the body against any specific foreign body. Usually developed by lymphocytes. The immunity that an individual acquires after the birth is called acquired immunity which is modifiable.

According to Ayurveda there is relation between *sharirabala* and *vyadhikshamatva*. There are 3 types of *bala*, i.e. *Sahaja* – *sahajabala* comes from the parents and is inherited. *Kalaja* – inclusive of the time of day, day of the week, season, age and place of birth are important factors for enhancing immunity and *Yuktikruta* – it represents acquired immunity which is modifiable [13]. This *vyadhikshamatva* and *sharirabala* is depleting now a days mainly due to *kalaja* (environmental) and *yuktikrita* (life habits, food pattern etc.) factors. When immunity can be preserved by proper administration of *Rasayanas*, the aim of healthy living can be achieved.

Table 1: Action of Rasayana



The possible mechanisms of action, by which *Rasayana* can be correlated in terms of modern scenario, are antioxidant, immunomodulatory, haemopoietic effect adaptogenic action,

anti-ageing, anabolic, nutritive function, neuroprotective and detoxification action.

a. Nutraceutical action – Nutraceutical, the words

“nutrition” and “pharmaceutical”, is a food or food product that provides health and medical benefits, including the prevention and treatment of disease. *Rasayana* provide adequate nutrition to every cell or tissue of body. They increase plasma nutrient value thus execute great nutraceutical action.

- b. **Anti-oxidant action** - Rasayana prevent tissue damage induced by free radicals by exerting antioxidant properties. Biochemical events generate free radicals/oxidative radicals inside the body, these radicals combine with bio-molecules and alter them or damage them. Rasayana drugs prevent free radical induced damages of tissue preventing further consequences such as cancers, inflammatory diseases, tissue necrosis and ageing, neurodegenerative diseases such as Parkinson's disease and Alzheimer's disease, gene mutations, atherosclerosis, heart failure and inflammatory diseases. 70% meth alcoholic extract of *Withania somnifera* (*Aswagandha*) has possibility as an antioxidant and free radical scavenging agent.
- c. **Adaptogenic action**– Natural herb products that supplement the body's ability to deal with stressors such as anxiety, fatigue or trauma are called adaptogens. *Sidacordifolia* (*bala*) have significant adaptogenic and anti-stress activity.
- d. **Immunomodulatory effect** – The immune systems have connections with numbers of other organs and can directly or indirectly influence the action of many other organs, including the brain. *Rasayana* drugs such as *Emblica officinalis* (*Amla*), *Tinospora cordifolia* (*Guduchi*) and *Withania somnifera* (*Aswagandha*) have significant immunomodulatory action.
- e. **Geno-protective action** – Mutation is damage to DNA and RNA genomes and they may also trigger fatal diseases including cancer. *Rasayana* when used in its preventive aspect (in early or middle age) may intercept such changes in our genetic pattern by enhancing immunological responses and resistance of DNA to oxidative challenge. eg: *Chyavanaprasha*.
- f. **Nootropic action** – *MedhyaRasayana* have nootropic action and useful in degenerative disorders of brain including senile dementia and Alzheimer's. *Rasayana* also corrects cognitive dysfunction and prevents the disease in progression. The Bacosides identified in *Brahmi* significantly improved the acquisition, consolidation and retention in the shock motivated brightness discrimination response in rats. Bacosides also enhanced the protein kinase activity in hippocampus. An aqueous extract of *Glycyrrhiza glabra* (*yasti*) significantly enhanced dendritic arborization, dendritic intersection and have dendritic growth stimulating properties^[14].
- g. **Psychological wellbeing** - Behavioural conducts or mental hygiene is the effective preventive principles for the psychological disorders. *Achara Rasayana*, as described previously includes various conducts, behaviour, do's and don'ts which give better social acceptance to a person. Thus, *Achara Rasayana* improves psycho-neuro health of a community.

In current scenario, use of *Rasayana* especially in early and middle age as per the situation helps in minimizing and preventing life style disorders.

3.1 Physiological action of Rasayana

Rasayana boosts enzymatic activities of body, empowers

dhatus, improves circulation of *rasa*, balances *dosha*, detoxify body and eliminate body waste, maintain metabolic and digestive activities, restores thermostat of body thus maintain normal temperature of body and enhances level of bio-energy by balancing catabolic and anabolic activities. *Rasayana* therapy promotes nutrition through different modes^[15].

Antistressor actions have made them therapeutically more important. Administration of herbal preparation, *Rasayana* has been found to be enhance the natural killer cell activity in normal as well as in tumour bearing animals. *Brahma Rasayana* and *Aswagandha Rasayana* were found to activate antibody dependent cytotoxicity significantly. *Aswagandha Rasayana* also found to activate macrophages. *Rasayana* are also found to stimulate antibody dependent complement mediate tumour cell lysis. *Rasayana* herbs seem to exert their effect through immunosuppressant, immunostimulant and immunoadjuvant activities or by affecting the effector arm of the immune response. It has been found that the nervous, endocrine and immune systems are all interrelated. Immune products like cytokines have been found to stimulate the hypothalamus-pituitary-adrenal axis (HPA axis) and corticotrophin releasing factor (CRF), which ultimately enhances the production of adrenal corticotrophic hormone (ACTH) resulting into increased secretion of glucocorticoids which have an overall suppressive effect on the immune system. Stress also acts on the same axis and brings about changes in the immune status of the body. *Rasayana* drugs probably reduce stress levels by affecting antioxidant levels. So, these *Rasayana* drugs act as potent antioxidants and neuroendocrine immunomodulators.

3.2 Scope for pharmaceutical modifications in Rasayana

There are some limitations for using the *Rasayanas* as such mentioned in our classics. Although *kutipravesika* procedure of administration is considered the best, in this busy life such a lengthy procedure is not practical and also it is very expensive and has to follow strict diet control. So such *Rasayanas* can be administered in *vatatapikavidhi*. A modification in the preparation of *kuti* with limited restrictions can also be thought about. The dose can also be modified conveniently as the person can take it without interfering their routine. Palatability is also a main concern regarding Ayurvedic medicines. So if many of the *Rasayana* drugs are made into palatable form such as capsule, soft gel capsule etc. and also more drugs made available in the market, it will be more suitable. In the *bhallatakaRasayana*, we have seen that it is advised to take it by smearing mouth with ghee. So if it is made into capsule form, chances of stomatitis can be avoided. Most of the *Rasayanas* can be prescribed as convalescent medicines during discharge so as to prevent the recurrence by nourishing the *dhatus*.

4. Conclusion

Now at this pandemic situation, when the world is trying to achieve such medicines that enhance the healthy life of the individual, we have to explore out the possibilities of such drugs from Ayurveda, where *Rasayana* drugs can fulfil this desire of mankind. There are several *Rasayana* drugs which may ward off the effect of population, ageing, malnutrition, disturbed food habit, and obesity. If the body is affected by different pathogenic organisms and other stresses, one cannot remain healthy i.e. the *ojas* gets disturbed or deranged. Therefore, *bala* is directly responsible for the prevention, inhibition, and arrest of the factors that cause the diseases, their virulence, and strength. In medicine, these functions

of *bala* are to be considered under the umbrella of immunity which is the capacity of an individual to resist an infection i.e. invasion, multiplication and production of disease by an organism. In the broadest sense, the protection of self is called immunity.

According to Ayurveda, disease is produced due to *dhatudaurbalya and srotovaigunya*. In another manner, if *ojas* is working properly i.e. immunity of the body is good, then there is a rare chance for occurring disease. Diseases of chronic nature in which *dhatudaurbalya and srotovaigunya* remain incessantly and whenever they got minor *doshaprakopa* through *nidanasevana*, symptoms of disease will be produced with its extreme severity. It is said that, *Rasayana* is having the property to correct *dhatudaurbalya* by producing *dhatu*s of optimum quality which has enough strength to protect body from disorders. *Srotovaigunya* itself being corrected after improvement of *daurbalya of dhatu*s. *Rasayana* is the best *ojovardhaka* which improves the immunity state of the body.

Hardly any of health sciences is reported to have put thrust as huge as Ayurveda. It gives an insight about the treatment aimed at establishment of *dhatu*s. Hence treatment of any disease would not be complete without using *Rasayana*. Proper understanding and application of this concept in practice of Ayurveda would only lead to perfect and precise management approach. Amongst them '*Kutipraveshika Rasayana prayoga*' is believed to be the best procedure for *Rasayana karma* but it is a very expensive and lengthy procedure. So, nowadays *Kutipraveshika Rasayana prayoga*' can be effectively used with practical modifications as discussed. *Rasayana* therapies are more effective against COVID 19. Eventually, Ayurveda has emerged with an upper hand as the government has approved *Ayurvedic Rasayanas* for clinical trials to fight against the upsurge of the COVID-19 pandemic. No doubt, *Rasayana* is very important perspective expressed in classical treatises and is boon to the world when administered properly.

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