

Analysis of the role of Rasayana in communicable diseases with reference to Covid 19

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ABSTRACT:

In India, a variety of endemic communicable illnesses pose a severe 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 pose serious problems for public health. The “Corona virus disease 19 (COVID19)” is caused by “Severe Acute Respiratory Syndrome Corona virus 2 (SARS-CoV-2)”, a newly discovered member of the Coronaviridae family of viruses which is highly communicable. Since COVID 19 has no known cure as of yet, prevention is the best method to avoid getting sick. Ayurveda has two objectives: first to prevent and promote health and second to treat disease. As per Ayurvedic principles, immunity of a person can be enhanced by use of proper diet and lifestyle along with proper use of Rasayana.

Rasayana (rejuvenation therapy) essentially means nutrition at all levels from macro to micro-cellular level. Rasayana therapy replenishes the vital fluids of the body; boosts the Ojas (vital force of life) and the immune system. Rasayana therapy is particularly helpful in management of such disorders where immunity and infections are playing central role. Taking Rasayana is helpful to increase the immunity of person to keep away from communicable diseases like COVID 19. Even so, COVID 19 is still active and emerging today also. Rasayana therapy are therefore useful for boosting immunity in order to prevent this.

KEYWORDS: COVID 19, Communicable disease, Dhatuposhana, Endemic, Immunity, Prevention, Rasayana

I. INTRODUCTION

Endemics are generally caused by several factors including change in ecology of the host population, a genetic change in pathogen reservoir or the introduction of emerging pathogens to a host population. Generally, an epidemic occurs when host immunity to either an established pathogen or newly emerging novel pathogen is suddenly reduced below that is found in the endemic equilibrium and the transmission threshold is exceeded. [1] A number of endemic communicable diseases present a serious public health hazard in India. India is going through a period of transition, both epidemiological and demographic transition. The expectancy of life has increased, with consequent rise in degenerative diseases of aging and life-styles. Nevertheless, communicable diseases are still dominant and constitute major public health issues. Coronavirus disease i.e., COVID-19 is caused by novel coronavirus, it is also known as SARS-CoV-2. It is a zoonotic origin disease which comes from civet cats, camels, bats. [2]

In Ayurveda, the epidemic disease which can be correlated with Janapadodhwansa which is mentioned in a chapter that is described in Vimana Sthana by Acharya Charaka. This chapter is thought to be an epidemiological study. Adharma is referred to as Moolkarana and Pragyaparadh is referred to as Yoni for Janapadodhwansa Vyadhies. Adharma in this context refers to the one who does not adhere to Dinacharya, Ritucharya, Aharvidhi, and Sadvruttapalana as a way of avoiding Vyadhi. The error made by intellect in its three categories—Dhi, Dhriti, and Smriti—is known as Pragyaparadh. When discussing Ritucharya (seasonal regimen), Acharya Sushruta introduces the idea of Janapadodhwansa, which is characterised as the eradication or destruction of communities or settlements. Since the beginning of time, epidemics and disease outbreaks have happened. Vayu, Jala, Desh, and Kala are the four causes of widespread

infection in the population. Even if an individual has a different immunity setup, a different lifestyle, etc., even if a community is different in terms of its constitution and other characteristics of an individual, due to the infected unusual causal elements the community's members may become infected in huge numbers. That is what took place during the COVID-19 infection. The unusual elements listed above are brought on by this biologically evolved virus, which is also to blame for the widespread destruction. This scenario now concerns Janapadodhwansa.^[3]

Now, a day it is evident to notify the pandemic state of India and different countries due to the virus known as corona virus, which is responsible and causes pressure on societies and health care system. COVID-19 (Coronavirus) has affected day to day life and is slowing down the global economy. This pandemic has affected thousands of people, who are either sick or are being killed due to the spread of this disease. The most common symptoms of this viral infection are fever, cold, cough, bone pain and breathing problems, and ultimately leading to pneumonia.^[4] This is the first pandemic condition of 21st century which requires internationally unified potent and collective actions by the individuals, communities, and commercial bodies etc. Only social distancing and other preventive measures are tools used to deal this emergency. And hence, this condition can be correlated with Janapadodhwansa.^[5] There is no definite treatment of COVID 19 till date hence prevention is the best way to keep disease away.

The primary and most leading treatment is the Rasayana Chikitsa for this epidemic condition for improving the immunity and strength of the body.^[6] It produces Dhatu of optimum qualities and could act at the level of Strotas which will prove an effective tool in disease management.^[7] This can be called as immunomodulators, which can be defined as biological or synthetic substances that can stimulate or suppress or modulate any aspect of immune system including both adaptive and innate arms of the immune system. There are some Rasayana Dravya mentioned in our classical texts: Ashwagandha, Guduchi, Mandukparni, Bramhi, Shankhapushpa, Yashtimadhu, Vacha, Tulsi, Guduchi, Amalaki and Haridra are acting as the best dravyas to build the immunity. It provides the strength to combat the diseased condition. They basically work upon the "Strotas" level and responsible for the "Samprapti Vighatana".^[5]

II. DISCUSSION

Rasayana is nothing but a therapy which provides strength to the body to combat the disease. It enriches the basic Dhatu i.e. Rasa which further results in enrichment of Saptadhatu of optimum quality and hence, body soul and mind gets their nourishment. Further, results in the compact body with lustre, good immune power.

Mechanism of action of Rasayana

Rasayana promotes nutrition by direct enrichment of the nutritional quality of Rasa i.e. nutritional blood, by promoting nutrition through improving Agni means digestion, metabolism and by promoting the competence of Strotas means microcirculatory channels in body. It has been reported that the Rasayanas are rejuvenators, nutritional supplements and poses strong antioxidant activity.^[8] They also have antagonistic action on the oxidative stressors, which give rise to the formation of different free radicals.^[6]

Some Rasayana activate mononuclear cells to produce cytokines like GM-CSF and IL-1 in a dose dependent manner. Rasayana (particularly those with Madhur Vipaka that are advocated as adaptogens in Ayurveda) primarily activate immune cells, leading to secretion of cytokines, which in turn act on multiple target organs to produce the multiple effect.^[9] Rasayana has been found to enhance the natural killer cell activity in normal as well as in tumour bearing animals. Rasayana are also found to stimulate antibody dependent complement mediated tumour cell lysis. The Rasayana herbs seem to exert their effect through immunosuppressant, immune stimulant and immune adjuvant activities or by affecting the effector arm of the immune response.^[10]

Rasayana, have been shown to markedly promote health, immunity, vigour, vitality, and longevity and at the same time protecting from stress. These medicines claim to facilitate healthy ageing, arrest degenerative changes and have rejuvenating potential at cell and tissue levels.^[11, 12]

The anti-ageing drugs, considering their role in promoting telomerase activity, telomere length and DNA repair. There are some Ayurvedic Rasayana herbs and formulations with potential telomere protective and DNA repair activities role in promoting telomerase activity, telomere length and DNA repair.^[5]

Ashwagandha [Withania somnifera (L.) Dunal], aka Indian ginseng, is a flagship rejuvenating and adaptogen Ayurvedic herb, traditionally used as an anti-ageing agent.

Ashwagandha extract also exhibited anti-genotoxic effects against H₂O₂-induced DNA damage in human peripheral blood lymphocytes.^[13] Ashwagandha deserves to be investigated in various degenerative and adult onset health ailments, with more understanding on potential anti-ageing mechanisms.

Guduchi [Tinosporacordifolia (Wild) Hook. f. & Thomson] is a celebrated Rasayana herb of Ayurveda. A study found that extracts from Guduchi markedly enhanced the rate of cell survival and protected against radiation-induced cytotoxicity and DNA damage in PC12 cells.^[14]

Mandukaparni [Centellaasiatica (L.) Urban] is another renowned Ayurvedic herb effectively used to improve memory and for rejuvenation in traditional practices. The activity of extracts from this plant has been increasingly investigated on telomerase activity. In a study, the authors found that Mandukaparni extract was able to trigger an almost nine-fold increase in telomerase activity compared to untreated human peripheral blood mononuclear cells.^[15]

Brahmi [Bacopamonniari (L.) Wettst. In Eng. & Prantl] is another Ayurvedic plant traditionally used as a nootropic and tonic agent. A study performed on Brahmi extracts reported an extraordinary adaptogenic potential and role in scavenging superoxide anion and hydroxyl radicals and in reducing H₂O₂-induced cytotoxicity and DNA damage in human fibroblast cells.^[16]

Shankhapushpi (Convolvulus pluricaulis Choisy) is another Indian traditional plant widely used for its effective nootropic effects.^[17, 18] A study evaluated the neuroprotective potential of Shankhapushpi ethanol extract, and it was found to possess antioxidant and anti-apoptotic properties and to protect from H₂O₂-induced cytotoxicity and plasmid DNA damage.^[19]

Yashtimadhu (Glycyrrhizaglabra L.), aka Mulethi or Jethimadhu in traditional practice, is rich in glycyrrhizin (a triterpene saponin), and its root extracts have been reported to increase DNA resistance from CdCl₂-induced genetic and oxidative damages in human lymphocytes.^[20]

Vacha (Acoruscalamus Linn.), is another Ayurvedic plant with potent antioxidant and cytoprotective abilities, being able to effectively protect DNA from γ -radiation-induced strand breaks and to enhance DNA repair process in vitro.^[21,22]

Tulsi (Ocimumbasilicum L.) essential oil has been shown to raise the apparent telomeres length in cell culture and to downregulate the

telomere repeat binding factor 1 (TERF-1) telomere length suppressor.^[23]

Haridra (Curcuma longa L.) is also an extensively used medicinal herb and soul of Indian cuisine. Haridra aqueous extracts and its main constituent, curcumin, are found to be protective against lipid peroxide-induced DNA damage^[24], twigs-dry leaves smoke condensate-induced DNA damage in calf thymus DNA and human peripheral lymphocytes.^[25]

Amalaki extract also exhibited neuroprotective effects from H₂O₂-induced DNA damage and repair in neuroblastoma cells.^[26]

The multiple Rasayana medicines reported in the Ayurveda literature, extremely rich sources of key bioactive molecules such as flavonoids and polyphenols with remarkable antioxidant, adaptogenic, immunomodulatory, immunostimulant, cytoprotective and rejuvenating properties^[9,10], underlines the hope that the ancient literary and experience-based knowledge base of Ayurveda has huge therapeutic potential, and thus can be used to discover and develop new anti-ageing drug candidates with potent telomerase activator, telomere protective and DNA repair properties.

An epidemic often starts when the host immunity to either a well-known pathogen or a recently discovered novel pathogen is abruptly decreased below the level found in the endemic equilibrium and the transmission threshold is crossed. The Corona virus infection leads to depletion of Ojas which ultimately leads to lack of Vyadhikshamtwa Shakti (Immunity). According to Ayurveda, ailments originate from a disruption in the balance of Dosha and Dushya, and this imbalance is caused by KsheenaVyadhikshamatva (low immunity). The individual's Vyadhikshamatva is deteriorating day by day as a result of altered Ritucharya and Dincharya, making them more susceptible to infection. So, to destroy pathogens of this disease, RasayanaDravyas which amplify the immune system. Immune modulators are those which administer strength to the immune effector cells i.e., lymphocytes, macrophages, dendritic cells, natural killer cells, cytotoxic T lymphocyte cells etc. these cells work together and defend the body against the antigen.^[27] The primary and most leading treatment is the RasayanaChikitsa for this epidemic condition for improving the immunity and strength of the body. Ashwagandha, Guduchi, Mandukaparni, Bramhi, Shankhapushpa, Yashtimadhu, Vacha, Tulsi, Guduchi, Amalaki and Haridra are acting as the best Dravyas to build the

immunity. It provides the strength to combat the diseased condition.

III. CONCLUSION

The stress, unhealthy nutrition and continuous exposure to several toxins in present era lead to compromised immune system. Immunomodulatory effect of Rasayana is helpful to increase the immunity of person to keep away from communicable diseases like COVID 19. In the present era of pandemic, this Rasayana therapy having antioxidant, adaptogenic, cytoprotective and rejuvenating properties holds great importance in improving Vyadhikshamatwa of the body by reducing cell damage and increasing the power of resistance to disease. Thus administration or in cooperation of these Rasayana Dravyas in day to day clinical practice provide an effective tool to improve overall public health. Even so, COVID 19 is still active and emerging today also. These Rasayana Dravyas are therefore useful for boosting immunity in order to prevent this.

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