A Review on Role of Rasayana in prevention and Management (as an adjuvant) of COVID-19

Rani Mude*, Vaishali Kuchewar

Department of Kayachikitsa, Mahatma Gandhi Ayurveda Medical College, Hospital and Research Centre, Salod (H), Wardha.DattaMeghe Institute of Medical Sciences (DU), Nagpur, Maharashtra, India

**Article History:**
Received on: 08 Mar 2020
Revised on: 13 Apr 2020
Accepted on: 27 May 2020

**Keywords:**
Antiviral, Coronavirus, COVID-19, Immunity, Rasayana, Respiratory system

**ABSTRACT**

COVID-19 is an infectious disease which is caused by Corona virus. It is a severe acute respiratory syndrome corona virus 2 (SARS-CoV-2). The corona virus outbreak was begun in Wuhan, China, in December 2019. Common symptoms are including fever, cough and difficulty in breathing. This is a communicable disease and the virus is spread during closed contact between people. Now a days this disease is widely spreading in all countries including India and no any effective treatment strategy is available on this disease. Hence it is important to take preventive measures and immunity boosters to prevent from this communicable disease. Immunity will protect against various foreign bodies which enter in the body such as viruses and bacteria. In Ayurveda, taking Rasayana is helpful for the person to keep him away from diseases by increasing the immunity. Rasayana is the tool to create premium dhatus. Enhancement of quality of dhatus results in strong immune system to fight against diseases and longevity. NaimittikaRasayana helps to fight against various diseases and it can be used as an adjuvant for specific disease. This study was aimed to review the previous work done on immuno modulating and antiviral effect of Rasayana drugs on Respiratory system. In this article, it is hypothesized that Rasayana drugs may be effective in the prevention of COVID-19.

*Corresponding Author
Name: Rani Mude
Phone: 9730188060
Email: ranimude99@gmail.com

ISSN: 0975-7538
DOI: [https://doi.org/10.26452/ijrps.v11iSPL1.3092](https://doi.org/10.26452/ijrps.v11iSPL1.3092)

Production and Hosted by
Pharmascope.org
© 2020 | All rights reserved.

**INTRODUCTION**

COVID-19 is a Corona virus disease caused by the recently discovered corona virus which can spread between humans and animals. The corona virus outbreak was begun in Wuhan, China, in December 2019. Common symptoms are including fever, cough and difficulty in breathing. Some individuals also include muscle pain, diarrhoea, fatigue, sore throat, abdominal pain and loss of smell. The incubation period of this disease may range from two to fourteen days but normally it is of five days. Majority of cases shows mild symptoms, but some progress to pneumonia and failure of multi-organs. More than 1.69 million cases have been reported in more than 200 countries, resulting in more than 102,000 deaths. The virus is mainly spread through close contact, coughing, sneezing, or can also be spread by touching their eyes, nose and mouth after comes in contact with contaminated surface.

This disease is stated as a pandemic, but still no any effective treatment strategy is available, so prevention is the ideal option for COVID-19. It is very important to take preventive measures and to boost the immunity. The U.S. Food and Drug Administration-
tion recently granted an “emergency use authorization” of a blood test for antibodies against SARS-CoV-2. And it comes at a time when health experts and leaders are embracing immunity as a potential end point to the pandemic (Mckenna, 2020). Immunity is nothing but the body’s ability which protect against toxic substances which enter the body and all types of foreign bodies like virus, bacteria. The principal objective of Ayurveda is prevention of diseases, promotion of health and cure from the disease. AcharyaCharak promoted the use of Rasayana to enhance the oja and VyadhiKshamta or immunity. It is a rejuvenation therapy. Rasayana is the tool to create premium dhatus. Enhancement of quality of dhatus results in strong immune system to fight against diseases and longevity.

As per the scope of use, there are two types of Rasayana, KamyraRasayana promotes normal health and NaimittikaRasayana, helps to fight against a specific disease. Naimittikarasayana is used for the specific management of disease as an adjuvant and not the specific treatment for particular diseases. In COVID-19, mainly Respiratory system is affected, some reviewed the previous clinical work done on immunomodulating effect of Rasayana on Respiratory system. While searching the herbs available for antiviral affect, many herbs like Tulsi, Haridra, Ashwagandha, Guduchi, Neem, Pippali, Amalaki, Haritaki, Rudanti etc. were found, which might be given as adjuvant along with other medical treatment. In this article, we hypothesizes that Rasayana drugs may be effective in the prevention of COVID-19.

The mode of action of Rasayana is shown in Figure 1.

MATERIALS AND METHODS

Data source

The related data collected from various research article from years 2002-2020 and from classical text of Ayurveda. 

Observations and Results

Neem(Azadirachta indica)

Neem has been given in Ayurvedic text from ancient time and it is extensively used in day to day life and has become a very popular drug in modern medicine. ‘Arishtha’ is the synonym of the neem tree, that means ‘sickness reliever’ and hence is mentioned as ‘Sarvaroganiviranti’.

Anti-viral activity

Azadirachta indica demonstrated several biological activities in which Nimbidin is a major crude bitter principle extracted from the seed, extract from leaf has anti-viral activity. Neem leaves has methanoic extract(NCL-11) which has antiviral and virucidal effects.

Immunostimulant activity

Recently, Neemstem bark aqueous extract has been shown to immune response in vivo on red blood cells of mice(VBalb-c) to sheep. The leaf extract shows both humoral and cell-mediated responses and considered as potent immunostimulant (Kausiket, 2002).

Haritaki(Terminalia chebula Retz)

Haritaki is mentioned as Rasayana in Ayurveda and held in high esteem for its attributes to acts as preventive, curative, and rejuvenative medicine.

Immunomodulatory activity

The extract shows its protective effect through its immunomodulatory activity in mice against typhoid. The aqueous extract reportedly increased humoral antibody titre. The biologically active compounds such as chebulagic acid, gallic acid and ellagic acid make T. chebulla highly potent antioxidant, which may be responsible for its immunomodulatory activity. (Pranoti, 2014).

Anti-viral activity

Terminalia chebula can protects epithelial cells against influenza A virus. It possesses retroviral reverse transcriptase inhibitory activity which supports to recover from acute respiratory infections. In vitro and in vivo tests also showed activity against Herpes Simplex Virus, effects of immunodeficiency virus- 1-transcriptase and to inhibit the replication of human cytomagalovirus. It also inhibits useful in sexually transmitted diseases like AIDS (Gupta, 2010).

Haridra (Curcuma longa Linn.)

From ancestral time Haridra has been used. It is listed in our medicine system which acts mainly on Respiratory system, either viral, bacterial or immunologic factors are responsible for throat infections like tonsillitis associated with cough.

Anti-viral activity

Haridra (Curcuma longa Linn.) is an anti-viral agent, bactericidal, anti-inflammatory and, Kawal of Haridra Kwath helpful in the treatment of cough and moderate relief in change in voice symptoms in respiratory disorders. It is easily available and very simplest method with minimal or no side effects. Haridra after boiling with milk used in asthma, bronchitis, dyspnea, cough and fever which shows great improvement (Yadav, 2012).

Ashwagandha(Withania somnifera)
Aswagandha (Withania somnifera) is widely available and well known to Indian community as in use since the ages. The specific well accepted actions are mainly nutrient supplement, metabolic appreciation and tissue nourishment.

Immunomodulatory Activities
In response to defence mechanism, it shown immunomodulatory activity which boost up the functional immunity and restoration of it. The Rasayana drugs improves the quality of life as it possesses antioxidant, anti-stress and inotropic activity (Debnath, 2017).

Guduchi (Tinospora cordifolia)
Guduchi is a well known Rasayana. It is a very potent drug. Many conditions like fever and poisonous conditions this can be used. Its synonyms are Jvarnasini, Jivanti, Vayastha, Dhara, Visaghni, Vayasya, and Rasayana. It promotes strength and vitality and protect from disorders.

Immunomodulatory Activities
Guduchi has immunomodulatory and cytotoxic effects as it contain a large variety of compounds which improve the phagocytic activity of macrophages. These components are N-methyle-2pyrrolidone, 11- hydroxymuskatone, syringing and magnoflorine. These compounds stimulates splenocyte and it enhances in nitric acid production.

Antipyretic activity
Guduchistem contains soluble fractions of hexane and chloroform that have shown antipyretic effects in most of the studies (Tripathi et al., 2015).

Pippali (Piper longum Linn.)
Pippali is an important Rasayanadravya. Unbiased and critical study of the classical Ayurvedic texts shows different actions of Pippali. Dipan, Kasaghana, Rasayana, Medhya and Vrishya are important actions of pippali. Charak used pippali in various Rasayana formulations like Pippalirasayana and Vardhmanapippalirasayana as a single herb formulation. Therefore, the review of pippalas a Rasayana revealed that it is a best Rasayana. It is indicated for the various diseases.
of respiratory and gastro-intestinal system like Shvas-Kasa, Udara, Jvara, Gulma, Udara.

Immunomodulatory activity

Pippali possesses immunomodulatory, antimicrobial and antioxidant activity. It is useful in suppression of cough. Many researches have shown that it has many actions which are Antimalarial, Antibacterial, CNS stimulant, Antitubercular, Anti, inflammatory, Hepatoprotective, Antinarcotic etc. Flavonoids, saponin glycosides, Alkaloids, phenolic and tannins are present in Pippali. Immunomodulatory activity is due to phenolic compound and it is already reported (Tripathi et al., 2015).

Amalaki (Emblicaofficinalis)

Amalaki is one of the important herb in Ayurvedic medicine mentioned by BrhatTrayiand in most of Nighantus. It is very commonly used in India.

Immunomodulatory Activity

Emblica officinalis is useful in stimulating immune system by its compounds like ascorbic acid which enhances natural killer cell activity. It is the richest Vitamin C. Several reports shows enhancement of anti-body dependent cellular toxicity as immune response.

Anti-viral activity

Emblicaofficinalis has anti-viral properties. Due to the presence of Vitamin C in its fruit it shows therapeutic and biological effects, so it is useful against various disorders such as acute viral hepatitis and other respiratory disorders (Sowmya and Nanjammani, 2017).

Rudanti (Capparismoonii Wight.)

Rudanti (CapparismooniiWight.) is having Rasayana properties which help in building up of superior dhatu. It acts as a Rasayana on respiratory disorders. Moreover, it is also useful in associated symptoms of Rajayakshma like Kasa (Cough), shwas (Dyspnea), raktaapitta (Hemorrhagic conditions) and showed action fantastically.RudantiChoorna is kashaya, tikta in rasa (taste), laghutikshnaguna, katvipaka and ushnnaviya which help in removing the srotorodh and dhatwagnimandya, which provided proper nourishment of Dhatu.

Immunomodulatory Activity

Basic science research reveals that Rudanti possesses immunomodulatory and antioxidant properties which may help in maintaining a disease free state by enhancing the defence mechanism. While in impaired immune system some agents activates host defense mechanisms. This can provide supportive therapy which is helpful to conventional chemotherapy. Mesenchyme activated by stimulation of the Reticulo Endothelial System which is beneficial in healing at the tubercular sites. It results in formation of new healthy tissue by destroying the killer cells (Lalit, 2018).

Tulsi (Ocimum sanctum)

Tulsi has been proven to be effective in inhibiting several deadly viruses like Vaccinia virus and Newly infectious disease virus. According to CharakaSamhita, it can balance various mechanisms and increases the life span. The leaves of tulsi are consumable and is being used to normalize the kapha and vata. Tulsi have been used in the management of fever ranging from normal fever to malaria fever.

Anti-viral activity

Clinical trials conducted earlier in India, where the extract of tulsi leaves was administered for patients with viral hepatitis and encephalitis. Interestingly there was an increase in the survival and symptomatic improvement in the Tulsi group when compared with controls. Another study proved improvement in respiratory parameters and relief from symptoms of asthma with three days of consumption of Tulsi.

Immunomodulatory activity

Tulsi boosts the immunity of the body and helps to defense the threatening virus and bacteria. Improvement in humoral and cellular immunity was observed in animal studies after treatment with Tulsi oil. The possible mechanism for improving immunity is a modulation of the GABA pathway (Goothy et al., 2020).

RESULTS AND DISCUSSION

COVID-19 diseased cases are widely increasing today. The biggest problem regarding this is there is no any treatment strategy for this disease. So, there is an urgent need to find preventive measures. When the etiology of communicable diseases is discussed carefully, it is observed that, these diseases are coming under the Adhibhautika or SanghatabalapravruttaVyadhi. This Sanghatabalapravruttyadayhis are caused due to the Agantuka Karana i.e. caused due to implying Bhutas or living creatures or viruses. This person to person transmission is mentioned in AupasargikaRogaacording to AcharyaSushruta (Acharya, 2005). Immunity i.e. Vyadhikshamatva depends on the Ojaor Bala in the body. In which Oja represents vitality, and capacity to resist decay and disease. Ojas the essence of the Dhatu, it is responsible for promoting the stability and strength of the organs of the body. The deficiency
of Ojas leads to wasting, degeneration and decay. Weakened or loss of immunity causes viral diseases like, Coronavirus disease, AIDS etc. In COVID-19 there is no specific option for the treatment purpose, hence, Rasayana can be a great option and can play an effective role for preventive as well as therapeutic use for this disease as it stabilize immune system to fight against this viral infection.

In this article, we found many Rasayana herbs like Tulsi, Haridra, Ashwagandha, Guduchi, Neem, Pippali, Amalaki, Haritaki, Rudanti etc. Which can acts as immunomodulators and shown antiviral effect by their attributes. These might be helpful in prevention and as adjuvant along with other medical treatment.

CONCLUSIONS

The review showed that COVID-19 is an infectious disease and Rasayana therapy is particularly helpful in management of such a disorder where infections and immunity are playing central role. So we can assume that Rasayana can be effective in the prevention and management of this infectious Coronavirus disease. There is an urgent need to bring up solutions for public health care and for that investigation of the biological activity of phytoconstituents of the above mentioned drugs for development of an effective and safe herbal drug is necessary. From the above review we can conclude that, this study will be helpful to do further researches for finding the treatment strategy and hopefully bring up beneficial health care delivery and boost medical system in COVID-19.

ACKNOWLEDGEMENTS

I am thankful to DattaMeghe Institute of Medical Science and Mahatma Gandhi Ayurveda Medical College, Hospital and Research Centre, Salod (H), Wardha.

Funding Support

The authors declare that they have no funding support for this study.

Conflict of Interest

The authors declare that they have no conflict of interest for this study.

REFERENCES


