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## A REVIEW ON EFFICACY OF AYURVED MEDICINAL HERBS AS AN ANTIVIRAL DRUGS AGAINST COVID-19

<sup>1</sup>Dr.Ravindra R. Rajpal and <sup>2</sup>Dr.Priyanka P. Daundkar

<sup>1</sup>Associate Professor and <sup>2</sup>Assistant Professor

<sup>1&2</sup>Department of Kaumarbhritya

Dr. D. Y. Patil College of Ayurved and Research Centre

Dr. D.Y. Patil Vidyapeeth (Deemed to be University)

Pimpri, Pune, Maharashtra, India

### Abstract

As we are looking within very short period of time, the Coronavirus disease (COVID-19) caused by SARS-CoV-2 virus, has become a pandemic. Due to this the virus had infected 164,210,109 patients and death about 3,405,859 patients of all over the world which is recorded by WHO on 18<sup>th</sup> May 2021. At present, all over the world inspite of several researches are going on for proper therapeutic cure of this deadly Covid-19 virus. But still, we don't have any proper treatment to cure which leads to the increase in mortality of all the countries. As per data, no any specific antiviral treatment for this disease, several approaches have been proposed in Modern medicines, Chinese medicines, AYUSH medicines and other systems. Ayurveda herbal drugs are achieving high attention because of the extensive therapeutic potent like anti-microbial, immunomodulatory, anti-inflammatory and antioxidant properties. Ministry of Ayush, Govt. of India recommended 10 Ayurved herbals [Ashwagandha – Withania Somnifera, Tulsi – Ocimum sanctum, Guduchi/Giloy – Tinospora cordifolia, Pippali – Piper glabra, Haridra – Curcuma longa, Yashtimadhu – Glycyrrhiza glabra, Kantakari solanum xanthocarpum, Bharangi-clerodendrum serratum, Rasayan Churna – Herbal powder made up of equal amount of Tinospora cordifolia, Emblica officinalis and Tribulus terrestris] for the prevention by enhancing immunity as well as for the management of this Covid-19 in recent official publication “Guidelines for Ayurveda practitioner for Covid-19”. This is the common advisory and antiviral activity of these drugs is not proved yet. The current situation of world demands the proper Ayurved herbs utilization to prepare the population immunity to fight this deadly virus. The present review spotlight on the literature review and the review of pharmacological actions of these drugs.

**Keywords:** Ayush Medicines, Antiviral Drugs, Immunity Booster Agents, SARS-CoV-2.

### Introduction

Coronavirus disease 2019 (COVID-19) is disease caused by novel coronavirus which is also called as Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2; formerly called 2019-nCoV), which was first formed amid an outbreak of respiratory system disease in Wuhan City, China (1). First care of this disease was reported to the WHO on 31<sup>st</sup> December 2019. Then WHO declared the health emergency on 30<sup>th</sup> January 2020 (3, 4). It then declared as a global pandemic on 11<sup>th</sup> March 2020 (5). Within a very short period of time, the pandemic disease infects about 29,155,581 patients and brought forth death rate about 3,405,859 among all 216 countries as mentioned by WHO on 18<sup>th</sup> May 2021 (6). The common symptoms of disease are Cough, Cold, Fever with chills, Breathlessness (shortness of breath), Fatigue, Body ache, Headache, Running nose, Sore throat, Loss of smell therapies in India.

In Ayurveda, pandemic is mentioned as “Janpadodhwansa-Vyadhi”. In general, the disease which affects all over the globe with pollution of air, water and soil also due to which all human beings are diseased and dying. Also, as per Ayurveda system, this disease comes under “Sankramak Vyadhi” [communicable disease] which are most commonly occurred on the time of “Uttarayan

and taste, Nausea, Vomiting and Diarrhoea(2). Also resting Tachycardia was the classical asymptomatic symptom seen in lots of patients. This disease is present in various forms like asymptomatic / mild symptoms, moderate symptoms and severe symptoms. Symptoms may develop two days to two weeks after following exposure to virus (7). Currently there is no specific treatment for fighting against this infectious disease. So herbal drugs are achieving high attention due to high immunomodulatory, potent antiviral, anti-inflammatory and antioxidant actions of drugs.

Ayush-Ayurveda System of Medicine is an ancient method of treating disease which is famous all over India but most commonly used in southern part of country. The Ayurveda Medical system has its own terminologies for naming the diseases, signs and symptoms, different diagnostic methods, pharmacological & non-pharmacological guidelines recommended.

Ayurveda herbs for the prevention of disease by enhancing immunity as well as for the management of this infectious disease which are being advised for the acute respiratory viral and bacterial disease and other chronic respiratory diseases in Ayurveda from ancient times. Also, as we are looking the approach of the common people towards Ayush medicines becomes positive because of



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Kal” [means end of Uttarayan]. As per theory of Ayurveda immunity of human being will be low because bala of human being is very low due to kal [Uttarayan kal] (8).

All the diseased symptoms of Covid-19 are compared with Shwas-kas Vyadhi due to Janpadodhwansa-Vyadhi. So, Ayurveda system has suggested herbal drugs which are drug of choice for these types of pandemics to increase Bala and Immunity of patients. Also, some Rasaushadhis and Kupipakwa Rasayanas are mentioned for these deadly pandemics. So, this emphasizes the usage and importance of herbal drugs in Ayurveda (9).

Ministry of Ayush, Govt. of India recently released official publication “National Clinical Management – Protocol base on Ayurveda and Yoga for Management of Covid-19”. All these

excellent results of these Ayush drugs.

All these antiviral drugs are tabulated in Table-I. This guideline is common for Ayurveda Practitioner and antiviral activity of these herbals against Covid-19 are not proved yet (8). So, the author made attempt to discuss the literature review and the review of pharmacological actions of these potent herbal drugs in this article.

**Materials and Methods**

The relevant literature is referred and collected from Ayurveda text and contemporary literature. Literature related to this title is referred from all Ayurveda reliable journals and other herbal related journals. Published research works on individual herbs have been collected based on the therapeutic actions from internet resources and reviewed.

**Table I – Anti-Viral Ayush Herbs and their therapeutic uses in Ayurveda (8.)**

S.No.	Common Name	Botanical Name	Usage
1	Ashwagandha	Withania somnifera	Root powder 3-5 gm twice a day with warm water or milk or extract tablet 250 mg BD
2	Tulsi	Ocimum sanctum	Frequent sipping of water processed with Tulsi or tablet extract – 250mg tab 2 BD
3	Giloy	Tinospora cordifolia	500 – 1000 mg extract of guduchi powder
4	Pippali	Piper longum	Prepared decoction 30 ml BD
5	Haridra	Curcuma longa	Gargling with warm water added with turmeric powder and pinch of salt
6	Yashtimadhu	Glycerrhiza glabra	Powder form – 1-3 gm or decoction fresh 60 ml BD
7	Kantakari	Solanum xanthocarpum	For dry cough 1-3 gm or Kantkari Avleha – 2 tsf TID
8	Bharangi	Clerodendrum serratum	Powder 1-3 gm with honey
9	Haritki	Terminalia Chebula	Powder 1-3 gm with honey
10	Behada	Terminalia belerica	Powder 1-3 gm with honey
11.	Amla	Embllica officinalis	Fresh amla fruits or amla candy is available
12	Gokshura	Tribulus terrestris	Powder 1-3 gm with honey



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Table II – Anti-Viral Ayush Herbs and its Pharmacological properties (09)

S.No.	Common Name	Part used	Actions	Indications
1	Ashwagandha – Withania somnifera	Root	Anti-pyretic, analgesic,hypolipidemic, osteorthritis,	Aphrodisiac,digestive,carminative, sedative,anxiolytic drug,anti-rhematoid arthritis drug,hypolipidaemic
2	Tulsi – Ocimum sanctum	Leaf, flower, seed, root	Expectorant,deworming,pain killer,wound healer,	Sinusitis,respiratory diseases,expectorant,anti ulcer drug,fever,skin diseases
3	Giloy – Tinospora cordifolia	Leaf bark	Hypoglycaemic, antirheumatic, diuretic, anti-inflammatory	Best immunomodulator, Fever,diabetes,hepatitis,dyspepsis,anti diarrheal,anaemia,gouty arthritis
4	Pippali – Piper longum	Fruits, Roots	Deworming,broncodilator, digestive,anti microbial,anti pyretic,hypoglycaemic action	Diuretic, asthma, acid peptic disease, anti-haemorrhidal, anti-pyretic, carminative.
5	Haridra – Curcuma longa	Root	Wound healer, hypoglycaemic, expectorant,anti microbial,	Non healing ulcer,diabetes,asthama,respiratory disease,recurrent cough cold,allergic rhinitis
6	Yashtimadhu – Glycyrrhiza glabra	Root	Laxative, expectorant, wound healer, anti-inflammatory, anti- arthritis drug, anti-ulcer activity,	Respiratory disease, diabetes, anti- arthritis drug, leucorrhea, anti-cough cold.
7	Kantkari – Solanum xanthocarpum	Fruits, Root.	Digestive, Carminative, Excellent Expectorant, Diuretic, Digestive	Excellent use in cough-cold, respiratory disease, anti asthmatic, dyspepsia
8	Bharangi – Clerodendrum serratum	Root	Anti-histaminic effect, Expectorant, Anti-cold, Anti- cough, Deworming	Anti-asthmatic, productive cough, cold, recurrent LRTI,
9	Haritki	Fruits	Digestive, laxative, carminative, hepatic tonic, hypoglycaemic, hypolipidemic action.	Dyspepsia, hypolipidemic drug, Hypoglycaemic, constipation, acid peptic disease
10	Behada	Fruits	Carminative, digestive, anti- inflammatory, anti-inflammatory.	Laxative, Acid peptic disease, and respiratory disease, pain reliver
11.	Amla – Emblica officinalis	Frits	Digestive, dyspepsia, Laxative, anti inflammatory, hypoglycaemic , immunomodulatory action.	Respiratory disease, recurrent cough cold, digestive, acid peptic disaease
12	Tribulus terrestris	Roots	Diuretic, anti-inflammatory, pain reliver, aphrodisiac, hypoglycemic,	Renalstones, urinatytract infection, oedema, diabetes



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Table III – Anti-Viral Ayush Herbs and its Phytochemical properties

S.No.	Common Name	Phytochemical
1	Ashwagandha	Cusiohygrine, unhygrine, drovine, withaniol, withnolid, withaferin, (10)
2	Tulsi	Aldehyd, phenol, n-(steroid), arselic acid, leaf-ascorbic acid, & carotene (11)
3	Giloy	Barberin, giloine, glocoside, tinosporin, columbin, octacasanole, betacystesterol (12)
4	Pippali	Piperin, Pipelatin sesamin, piplastriol, piper longumin and piper languminin (13)
5	Haridra	Curcumin, vit A, protein (14)
6	Yashtimadhu	Glycerizin, Isoliquiritin, steroid, Glucose, sucrose (15)
7	Kantakari	Gluc-Alaloidal saponin, Disogesin, K-Nitrate, solanin (16)
8	Bharangi	Phenolic glycoside, saponin, seratogene, D-Menatol, B-Systesterol, Saponin Histapin, Cholinesterase (17)
9	Haritki	Chabulanic, chabulanic acid, chorilagin, 18 amino acids, fosferic, succinic, quinic, and shicmik (18)
10	Behada	Tannin, b-systesterol, galic, egalic, chabulic acid, ethyl galate, mannitol, glucose, galactose, fructose, raminose (19)
11	Amla	Galic acid, tannic acid, albumin, cellulose, calcium, vit-c. (20)
12	Gokshur	Chimferol, flavanoids, tannin, glycoside, stillroll, nitrate, sapogenin (21)

Discussion

In the above review of literature, all herbs are being prescribed for acute respiratory infectious diseases and other chronic respiratory diseases in Ayush Ayurveda Medical System of Medicine. Since ancient era, all above drugs are used in other various diseases also. On above drugs studies had done and proves that all these drugs have very potent antiviral, antioxidant, anti-inflammatory, anti-pyretic actions also. Also, some studies on drugs shows that these act on shwas vyadhi also which is most classical presentation of Covid-19 in moderate to severe cases. Other than respiratory diseases some drugs and rasayan shows the good effect on neurological diseases, GIT symptom, Genito urinary and Diabetes also.

So, the Ayush drugs mention on Guidelines for Ayurveda practitioner for Covid-19 are Balchaturbhadre choornam, Drakshavleha, Kantkari avlehe, Haridra khanda, Chywanprash avleha, Talisadi choornam. All these Ayush drugs used in the covid care centres of southern part of India which shows the good effects of these drugs. Also, some clinical trial is going on such Ayush drugs. Most of these herbals are one of the ingredients of above-mentioned preparations.

Anti-viral activity of these herbals against Covid-19 is not established yet. But the above pharmacological action of these herbals indicates that they may be suitable for the treatment of Covid-19 disease even with co-morbidity condition because these drugs have good rasayan action on body with good respiratory system effect. So proper combination of herbs for study against the pandemic disease may help to health professionals to prepare against any serious health problems. Also, the awareness programme for this deadly pandemic among all people regarding prevention of Covid-19 infection is very important.



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