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AYUSH-64 : A Miraculous Remedy in Covid-19

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ABSTRACT

Tracing back to Dec. 2019 when the first case of Novel Corona Virus disease was reported, the global community is still living in fear of Covid-19 disease due to repeatedly emerging new variants of SARS-CoV2. Even the vaccines developed till date cannot fully prevent the spread of this highly contagious disease posing significant global health burden. In such devastating times Ayurveda system of medicine is a beacon of hope for thousands of people. Ayush-64 is an Ayurvedic formulation which was developed by the Central Council for Research in Ayurvedic Sciences (CCRAS), Ministry of AYUSH and Govt. of India for the management of Malaria. It has four ingredients having immunomodulatory, febrifugal, anti-oxidant and antiviral activities. The experimental studies done on Ayush-64 showed that its phytoconstituents have high binding affinity against Covid-19 virus. Therefore, it has also been encompassed in the National Covid management protocol based on Ayurveda and Yoga by GOI for asymptomatic, mild, moderate cases of Covid-19. The potential of Ayurveda has been already seen worldwide during pandemic times. This is our humble attempt to explore the effect of Ayush-64 in Covid-19.

Key words: Covid-19, SARS-CoV2, Ayush-64, Immuno-modulatory, Antioxidant, Phytoconstituents

INTRODUCTION

In Dec 2019 a Novel Corona Virus later named SARS-CoV-2 hit the world and soon it spread across the globe as forest fire causing influenza like illness. In March 2020 WHO declared it a global pandemic. Most people who contract the virus remain asymptomatic or have a mild respiratory tract infection. However, in some cases the respiratory illness can progress to a viral pneumonia leading to a more severe and systemic

disease characterised by ARDS, septic shock and multi organ failure. Health care workers, older people and those with comorbidities are at the highest risk for developing Covid-19. Recently, rising incidence of Covid-19 cases in younger adults has also been noticed.^[1]

The peak during first wave was observed in India in Sep 2020 and second wave began around first week of March 2021.^[2] The devastation due to second wave is evident from the fact that amidst the rising cases of breathlessness there was a sheer shortage of oxygen supply and ventilators.^[3] Despite continuous efforts and large scale research there has been no definitive treatment till date. Understanding the gravity of situation there is a necessity for urgent exploration of all knowledge systems available globally.

Implementation of Traditional Chinese Medicine in Wuhan to treat Covid-19 cases very well demonstrates that traditional health care can successfully treat patients infected with SARS-CoV-2. Ayurveda being the age old science can prove to be a boon in this pandemic situation. Ayurvedic classics such as *Caraka Samhita*

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(*Viman Sthana* Ch.3) and *Susruta Samhita* (*Sutra Sthana* Ch.6 versus 19,20) have elaborately explained about epidemics and termed them as *Janapadodhwamsa*^[4] or *Maraka*^[5] respectively.

Caraka Samhita a standard treatise in the Ayurveda describes that vitiation of any one of the four factors namely *Vayu*, *Jala*, *Desh*, *Kala* manifests diseases having similar symptoms leading to *Janapadodhwamsa* or massive devastation. Further the symptoms of Covid-19 described by various authorities^[6] closely resemble *Vataja* (*Ch.Ni.1/21*) or *Vata kaphaja Jwara* (*Ch.Chi.3/86-87*) usually in a *Sama Avastha*. At a later stage *Ama* can aggravate the condition making it a *Vata Kapholbana Sannipata* or *Vatolbana Sannipata* (*Ch.Chi. 3/92-94*) in the progressive phase of the disease.^[7]

Table 1: Correlation of Covid-19 symptoms.

Covid-19	Vataja Jwara	Vata Kapha Jwara	Vatkapholbana Sannipata Jwara	Vatolbana Sannipata Jwara
Fever	+	+	+	+
Cough	+	+	+	+
Fatigue	+	+	+	-
Anorexia	+	-	+	+
Shortness of breath	-	-	-	+
Myalgia	+	-	-	-

Table 2: Properties of the Drugs

Name	Rasa	Guna	Virya	Vipaka	Dosha shaman	Chemical constituents	Uses
<i>Saptaparna</i> (<i>Alstonia scholaris</i>)	<i>Tikta, kashaya</i>	<i>Laghu Snigdha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kapha pitta</i>	Alkaloids Ditamine, Echitamine, Alstonine	Febrifuge, Expectorant, Carminative, stomachic
<i>Katuka</i> (<i>Picrorhiza kurroa</i>)	<i>Tikta</i>	<i>Laghu Ruksha</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Kapha pitta</i>	Picrorhizin, Picroside 1 & 2, Kutkoside	Febrifuge, antibacterial, hepatoprotective, stomachic

Chills or shaking with chills	+	+	+	+
Headache	+	+	-	+
Loss of taste	+	-	-	-
Body aches	+	+	+	+
Cold	+	+	-	+

The line of treatment of *Jwara* as explained by *Acharya Caraka* suggests that *Langhanam* is the first step followed by *Swedanam*, *Tikta Rasa Sewanam*, *Deepanam* and *Pachanam* (*Ch. Chi. 3/139*). Also the origin of *Jwara* is from *Amashya* (*Ch. Ni. 1/36*) which is the *Sthana* of *Kapha* therefore *Acharya Caraka* describes the *Chikitsa Siddhant* of *Sannipataja Jwara* saying that first of all *Kapha Sthana Anupurvya Chikitsa* should be followed.^[7] To serve this purpose *Aushadha Dravya* having *Laghu Guna*, *Tikta Rasa*, *Ushna Virya*, *Katu Vipaka*, *Ama Pachanam*, *Agni Deepanam*, *Swedajanam*, *Vata Anulomanam* properties should be used. One such polyherbal formulation is *Ayush-64*. It has four ingredients namely *Alstonia scholaris* (*Saptaparna*), *Picrorhiza kurroa* (*Katuka*), *Swertia chirayita* (*Kiratikta*), *Caesalpinia crista* (*Latakaranja*). The properties of these herbs have been explained in Table 2.^[8-10]

<i>Kiratikta</i> (<i>Swertia chirayita</i>)	<i>Tikta</i>	<i>Laghu Ruksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Tridosha</i>	Ophelic acid, glycosides, chiratin, amarogentin, gentianine, gentiocrucine	Febrifuge, use in dyspepsia
<i>Latakaranja</i> (<i>Caesalpinia crista</i>)	<i>Tikta, kashaya</i>	<i>Laghu Ruksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Tridosha</i>	Caesalpinia N, diterpines	Febrifuge, antispasmodic

AYUSH-64 - An Overview

Ayush-64 is an Ayurvedic compound formulation which was originally developed in 1980 for the management of Malaria by the Central Council for Research in Ayurvedic Sciences (CCRAS), under the ministry of AYUSH, GOI. The experimental studies done on Ayush-64 showed that its phytoconstituents have high binding affinity against Covid-19 virus. It has significant antiviral, antioxidant, immunomodulator and febrifugal properties and has been successfully employed in the treatment of diseases such as Malaria,^[11-14] Microfilaria,^[15] Chikungunya^[16] and Influenza.^[17] Therefore the drug was repurposed and incorporated by the GOI in the National Covid management protocol as a potential adjuvant to standard care in the treatment of asymptomatic, mild and moderate cases of Covid-19.^[18-22]

AYUSH-64 : A remedy in Covid-19

Studies reveal that Covid-19 patients are more susceptible to diminished levels of antioxidant substances due to their increased utilisation in counter balancing the negative effects of free radicals.^[23] Furthermore, Covid-19 patients with comorbidities such as diabetes, hypertension are at a higher risk of developing oxidative stress. Antioxidant potential of components of Ayush-64 namely *Caesalpinia bonduc*,^[24] *Picrorhiza kurroa*,^[25] *Alstonia scholaris*^[26] and *Swertia chirayita*^[27] has been established through various in-vitro, in-vivo and clinical studies. In SARS-CoV-2 infected patients, an acute hyper inflammatory response also called cytokine storm might be responsible for critical illness including ARDS and thromboembolism.^[28] Anti-inflammatory activities of *Caesalpinia bonduc*^[29] and *Swertia chirayita*^[30] are

evident from several in-vivo studies. Efficacy of immunomodulators in patients with Covid-19 is evident from various clinical studies.^[31] The results of an in-vivo study of *Caesalpinia bonduc* as an immunomodulatory agent in Swiss albino rats yielded promising results.^[32]

Clinical study on AYUSH-64

A clinical study was conducted at Govt. Ayurvedic Hospital, Patiala between Jan 2022 and March 2022 to evaluate safety and efficacy of Ayush-64 in clinically diagnosed patients suffering from influenza like illness.

Out of 40 patients, 30 had mild to moderate illness and among these 18 got their RT-PCR for Covid-19 tested out of which 5 were positive. These patients showed initial symptoms like fever, malaise, headache, body aches, fatigue, cough, nasal congestion etc.

Along with standard care these patients were given Ayush-64 2 tabs (500 mg each) thrice daily one hour after meals with warm water for 21 days.

10 patients had history of exposure but were asymptomatic. These patients were given 2 tabs (500mg each) twice daily one hour after meals with warm water for 21 days.

OBSERVATION AND RESULT

It was observed that patients showed remarkable improvement in their symptoms after the administration of Ayush-64 as an adjuvant to standard care. It limited the progression of disease in mild to moderate cases and none of the patients required hospitalisation. The symptoms began to subside within 2 to 3 days of treatment.

DISCUSSION AND CONCLUSION

Ayush-64 is a polyherbal formulation which has already been in use successfully for the treatment of Malaria, Chikungunya, joint pains, Influenza etc. Several studies demonstrate the effectiveness of Ayush-64 in the management of asymptomatic, mild to moderate cases of Covid-19 disease. In Silico evaluation of Ayush-64 has revealed that it has a good binding affinity against SARS-CoV-2 thus inhibiting viral replication.^[33] This study demonstrates that Ayush-64 has anti-protease properties against Covid-19 and therefore is a potential inhibitor of SARS-CoV2. Another network pharmacological analysis and molecular docking study of Ayush-64 further confirms that it can be utilised to treat Covid-19.^[34] During our clinical study on Ayush-64 we observed miraculous results of this polyherbal formulation with marked improvement in symptoms of patients suffering from Covid-19. Apart from Ayush-64 *Chyawanprash*, *Giloy Ghan Vati* and *Ayush Kadha* have also played a pivotal role in the management of Covid-19 cases. It was discovered that there was a significant decline in regular OPD cases of respiratory disorders during *Ritusandhi* as many patients were following Ayurveda's immunity boosting measures for self-care during Covid-19 crisis recommended by Ministry of Ayush.^[35] By means of this study we want to conclude that Ayush-64 has been repurposed for the management of Covid-19 after evaluating its safety and efficacy. Likewise, there is an urgent need to establish the potential of several traditional and folklore herbs to aid in the development of new drugs.

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