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COVID-19: A PROPHYLACTIC APPROACH THROUGH AYURVEDA AND YOGA

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ABSTRACT

The entire world is facing the corona virus COVID-19 pandemic caused by SARS-CoV-2 which has become the global health crisis as well as unprecedented socio-economic crisis. Being a new form of virus, there is no proven vaccine for this. It has become the greatest challenge since World War 2. In cases of critical stage, when conventional mainstream medicine is at the forefront, it is necessary to look over its preventive aspect through alternative sciences and collaborate with other effective medical sciences. The modern science focuses on interventions based on disease causing agents and immunize against it. Ayurveda's extensive knowledge based on preventive care includes interventions which enhance the body's natural defense system for maintaining optimum health. Our objective of this literature review is to understand the role of ayurvedic herbal medicines to combat this viral infection with their role in enhancing immunity, role of various *Dincharya* procedures in prophylaxis against this virus and role of Yoga, Pranayama and meditation in improving the pulmonary functions and in making the immune system strong.

Keywords: COVID-19; SARS-CoV-2, *Dincharya*, Ayurveda, Pandemic, Immunity, Pranayama.

INTRODUCTION

The SARS-CoV-2 (severe acute respiratory syndrome, coronavirus-2) was emerged in Wuhan, city of Hubei province, China, at the end of December, 2019. It then extended across the globe and the WHO has declared corona virus disease 2019 (CoVID-19) as a worldwide pandemic in March 2020. The recent corona virus disease -19 (CoVID-19) pandemic has challenged medical research community worldwide due to nonavailability of any vaccine or proven therapy. India has fewer hospital beds and doctors per 10,000 people than any of the countries affected by COVID-19, which is an indicator of poor health care system of India. Therefore, considering this; CoVID-19 requires a structured approach which covers preventive care and management in early stages of confirmed disease. The ancient science of Ayurveda has many secrets hidden within. Charaka Samhita, the classic of Ayurveda, has elaborated description of causation and management of epidemic. Pollution of air, water and environment is responsible for the spread of diseases on such a large scale resulting in janapadodhwamsa. The conditions which causes reasonable damage to the health of the society includes improper wastes disposal, distribution of polluted water, air pollution, indulgence in unwholesome activities, and will manifest in symptoms like cough, breathlessness, fever etc.2

We all know that prevention is better than cure. Ayurveda is the science which has given prime importance to preventive aspect as compared to curative aspect. The world health organization has also recommended inclusion of traditional medicine in its COVID-19 strategic preparedness and response plan.

To fight with this pandemic situation, it is necessary to look over its preventive aspect through science of Ayurveda and also immunity of the individualplays an important role to resist this virus. Therefore, it is required to apply various preventive aspects of Ayurveda like properlifestyle, proper diet and yoga to combat COVID-19

Current Global situation: Globally, there have been 91,816,091 confirmed cases of CoVID-19, including

1,986,871 deaths reported to WHO. Out of which, there have been 10,527,683 confirmed cases reported in India.⁵

Aim and Objectives:

- 1. To study the role and efficacy of herbal preparations mentioned in Ayurvedic classics against COVID-19 (for persons who are Unexposed and Asymptomatic) when used in *Dincharva* regimen.
- 2. To study the prophylactic role of Yoga and meditation against COVID-19.

Materials and Methods:

Material: Relevant literature from *Samhitas*, *Samgraha Granthas*, Ayurvedic and modern journals.

Method: Review study.

Modern Perspective OF SARS-CoV-2: The name "corona virus" coined in 1968, is derived from the "corona" – like or crown –like morphology observed for these viruses in the electron microscope. ⁶Coronaviruses are minute in size (65-125 nm in diameter) and contain a single – stranded RNA as nucleic material.⁷

The virus SARS- CoV-2, belongs to the coronoviridae family, in the order Nidovirales, named for the Latin word – nidus, meaning nest, as all viruses in this order produce a 3' co-terminal nested set of sub genomic mRNA's during infection.⁸.

The subgroups of the coronavirus family are alpha (α) , beta (β) , gamma (γ) and delta (δ) coronavirus. SARS-CoV-2 is a β - coronavirus.

In humans, COVID-19 typically presents with:¹⁰

- 1. Respiratory infections (common), including Severe Acute Respiratory Syndrome (SARS).
- 2. Enteric infections (occasional mostly in infants< 12 months)
- 3. Neurological syndromes (rare

This pandemic has the following symptoms.¹¹

- 1. Fever-Usually high grade
- 2. Cough-Nonproductive/dry
- 3. Shortness of breath
- 4. Running nose
- 5. Gastrointestinal Disturbance-Diarrhea/nausea
- 6. Headache

Therefore, coronavirus is one of the major pathogens that primarily target the human respiratory system.

Previous outbreaks of corona viruses (CoVs) include the severe acute respiratory syndrome (SARS)- CoV in 2003.

This "novel" corona virus (nCoV) is a new strain that has not been previously identified in humans.

Scope of Ayurveda in Prophylaxis of Covid-19 Pandemic

Ayurvedic system of medicine focuses on interventions based on host and environmental factors and recommends measures which boosts *Vyadhikshamatva* (the immune system of the host) against that particular type of agent and recommends for a healthy lifestyle habits.¹²

According to modern science, the epidemiological triad of disease causation consists of an external agent, a susceptible host, and an environment that brings the host and agent together.

Susceptibility and response of the host to an agent are influenced by factors such as¹³:

- a.) genetic composition
- b.) nutritional and immunologic status
- c.) anatomical structure
- d.) Presence of disease or medications
- e.) Psychological makeup.

Therefore, based on the facts that 1. coronavirus primarily targets the human respiratory tract 2. nutritional status, immunologic status and psychological status of the individual has a very major impact on the response of the host to an agent.

We can use 2 types of interventions according to Ayurveda:

- 1. Pharmacological: Government of India, Ministry of AYUSH recommends use of some herbal ayurvedic drugs on daily basis in various dincharya procedures which boost immunity with special reference to respiratory health.
- 2. Non-pharmacological: To improve the psychological status of the individual in times of stress and isolation due to Corona pandemic crisis.

The interventions mentioned in epidemic management includes:¹⁴ 1. *Karma Panchvidham (Panchkarma)*: *Shirodhara* relieves stress. 2. *Rasayana: Rasayana*

works on fundamental aspect of organs i.e. *Dhatus, Agni and Srotas* by nourishing *Rasaraktadi Dhatus* (the seven basic tissues) with the help of its properties such as antioxidant, anti-stress, anti-inflammatory, anti-microbial, vaccine adjuvant and confer immunity against diseases.¹⁵

3. Sadvritta (Social etiquettes like one should not consume food without washing hands, feet and face. Similarly, one should not indulge in yawning, sneezing or laughter without covering his mouth. The idea behind these practices can be correlated with the avoidance of spread of infectious diseases like COVID 19.

4. Aachara Rasayana (conducts to boost mental health), which empowers the person to fight against this virus.

1. Role and efficacy of Dincharya regimen and Ayurvedic herbal preparations against Covid-19:

Brahmamuhurta jagrana¹⁶: Exposure to bright light in early morning causes the release of serotonin (neurotransmitter biochemically derived from tryptophan) which contributes to feelings of well being and happiness and keeps the person active and alert.

Drink warm water: Ayurveda classics have mentioned the benefits of drinking warm water in early morning as *Deepana* (Appetizer), *Pachana* (Digestant of incomplete chyme), *jwargna* (antipyretic), *Srotsam Shodhanam* (cleansing of micro channels of the body).¹⁷

If it looks monotonous, we can add *saunf* (Foeniculumvulgarae), *Jeera* (Cuminumcyminum), *Tulsi* (Ocimum Sanctum), *Ajwain* (Tachyspermum ammi), *Methi* (Fenugreek seeds) to it, to add flavor or taste. Addition of these agents also enhances the properties of medicated water.

Saunf:

- 1. Stimulates the digestion process, treat flatulence and indigestion issues.
- 2. Antioxidant, Anti-inflammatory and antiviral properties. ¹⁸ Therefore, useful in treating digestive and respiratory ailments.
- 3. Dried fennel /fennel seeds are abundant in Vitamin C and boosts the immune system.¹⁹

Jeera: (Cuminum cyminum) When boiled in water, it adds antiseptic properties, which helps to fight common cold and fevers.²⁰

Tulsi:-(Ocimum sanctum) *Tulsi* plant is one of the most potent antiviral herbs of Ayurveda. Due to its *kapha* and *Vata* balancing effect, it is useful in the treatment of asthma and chronic respiratory disorders, cold and cough.²¹.

Ajwain: -It is potent *Amanashak*, which means it reduces toxin formation in the digestive canal restricting indigestion and malabsorption. It reduces microbial growth and thickness of mucus and increases the expulsion of the accumulated mucus content from the lungs.²²

Methi:- Aqueous extract of fenugreek seeds showed potential analgesic activity in comparison to that of an established analgesic drug like Diclofenac potassium and has anti-inflammatory, anti-pyretic and anti-anxiety effects.²³

Pratimarsha Nasya, Oil pulling (kavala), Steam inhalation (dhoompana):- All of these are used to strengthen the respiratory lining or mucous membrane from nasal passages to the lungs, including sinuses and oral airways.

Nasya: Ayurveda recommends the application of medicated oils like sesame oil, coconut oil, butter oil (ghee) into the nostrils. Kavala: Gargling with warm water added with turmeric powder (Curcuma longa L.) and a pinch of salt. Dhoompana: Frequent inhalation of steam with addition of bronchodilating drugs like Vasa (Adadhodavasica), Bharangi (ClerodendrumSerratum)

Chyawanprash as a Rasayana:- (10 gm tsf in the morning)

Chyawanprash is formulated by processing around 50 medicinal herbs, and includes Amla (Phyllanthusemblica/Indian gooseberry), which is the world's richest source of Vitamin C.

The rich nutritive composition and antioxidant biomolecules of *Chyawanprash* act both singly as well as synergistically for immuno-modulation.²⁴In the context of *Chyawanprash*, *CharakaSamhita* narrates 'It is the premier *rasayana*, beneficial for allaying cough, asthma and other respiratory ailments.²⁵

Pippali, Kantakaari, Kakdasingi, Bhumyamalaki, Vasa, Pushkarmul, Prishnaparni, Agnimanth, Shalparni, Seasame oil and Amla help to strengthen the trachea-bronchial tree and hence improves the immunity and functioning of the respiratory system.²⁶

Immunity enhancers:- Single Drugs

Giloy Kwatha: (Tinosporacordifolia) Kasaswasahara, Jwarahara

Consuming 500-1000 mg of aqueous extract of *Guduchi* (Tinospora Cordifolia) treats *Kasa* and *Swasa* (asthma) and has antipyretic activity. ²⁷*Tulsi Kwatha*: Frequent sipping of water processed with *Tulsi* (Basil leaves-Ocimumtenuiflorum L Merr) (synonym Ocimum sanctum L) is advised. ²⁸

2.Prophylactic role of Yoga and Meditation against Covid-19 (Non-Pharmacological measures):

Kapalbhati: Because this virus affects the respiratory tract, healthy lungs will help a person to survive and fight this pandemic. It becomes important to keep them healthy with exercises that maintain muscle strength around the rib cage diaphragm.²⁹Anuloma-Viloma:-It also decreases the effects of stress. 30 Pranayama and Survanamaskara have tremendous role in improving pulmonary functions (VC,TV,ERV,BHT,PEFR) in healthy individuals and hence prevent occurrence of respiratory diseases in future.³¹

Asanas: Thymus gland is closely related to our immune system. T-cells are the thymus gland's specialty, developing the immature-T-cells into strong, functional cell. These T-cells are critical to the adaptive immune system, where the body adapts specifically to foreign invaders and provides cellmediated immunity.³²Our immune system is a network of glands, nodes and organs that work to protect the body from bacteria and viruses. Stress has a consequence effect on functioning of these glands. 33 Yoga is a promising approach for dealing with the stress response. These Yoga poses twist and compress organs, help massage and rejuvenate organs and channels. These asanas can create specific benefits to improve immune function by activation of thymus gland.

Supine: Vajrasana, Mandukasana, Ushtrasana, Pavanmuktasana, Setubandhasana

Prone: Bhujangasana, Makrasana, Dhanurasana

Diet:-During respiratory-related problems ,you need to make small changes in your diet that help in pacifying *Kapha* and *Vatadoshas*, while improving *Pitta*.

To avoid Types of food:-

Heavy foods like dairy products and meat.

Fatty, processed and fried foods.

Refrigerated food items.

Preferable vegetables are *Shigru* (Moringa Oleifera Lam.), *Karvellaka* (Momordica Charantia Linn), *Patola* (Tricosanthesdioica.Roxb), *Mudga* (Vignaradiata (L.) R.Wilczek), *Patha* (Cissampelos parietal Linn.), *Vaastuka* (Chenopodium album L.), *Jivanti* (Leptadenia reticulate (Retz.) Wight and Arn), *Tanduliyak* (Amaranthus spinosus L.), *Kakamachi* (Solanum nigrum Linn), *Draksha* (Vitis vinifera L.), *Kapittha* (Feronia Limonia (Linn.)), *Dadima* (Punicagranatum Linn), *Lashuna* (Allium sativum L.) etc. are to be taken.³⁴.

Dhoopana: Fumigation of the house with antimicrobials such as Neem leaf, *Sarshapa* (Brassica campestris L), *Loban* (gum bezamin/benzoin-Styrax bezoin Dry and), *Karpura* (Cinnamomumcamphora (L), Ghee etc.

DISCUSSION

The unprecedented pandemic of COVID-19 requires an urgent harnessing of all knowledge systems available globally. The science of Ayurveda includes various texts of Dincharya regimen, various Ayurvedic formulations and Yogic procedures which are the need of the hour for prevention of diseases like COVID -19 which has no treatment or cure. What can help us today, is our body own immunity. According Vyadhikshamatva to Avurveda, (immunity) is achieved by 2 approaches i.e. Vyadhibalavirodhitva *Vyadhyutpada* Pratibandhakatva. Vyadhibalavirodhitva is achieved by improving the immunity an individual's body Vyadhyutpada Pratibandhakatva is created by using recipes which is specific in preventing disease. NonPharmacological measures including 30-minute *Anuloma-Viloma, Pranayama, Kapalbhati,* various supine and prone yogic postures help in improving pulmonary functions, enhancing cell-mediated immunity and to cope up with stress.

CONCLUSION

The traditional health care system can contribute to boost immunity in asymptomatic patients successfully.

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