



AYUSH Ministry's Health Advisory in COVID-19-A Critical Review

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ABSTRACT

Outbreak of "Severe acute respiratory syndrome Coronavirus 2 (SARSCoV-2)" infection took place in "Wuhan, Hubei Province, China" in December 2019, which spread across all over the Globe. WHO officially termed the disease caused by the new Coronavirus as "Coronavirus Disease 2019 (COVID-19)" on 12 February 2020. Being viral disease, at present no specific treatment or vaccines approved for COVID-19. Social distancing and practicing healthy lifestyle to boost immunity are the best possible options to deal with it. Though there is progress in Medical science regarding immunization and development of medicine, there is lack of vaccines for prevention of many viruses and effective antiviral medicines. India's Ministry of traditional medicine or AYUSH (Ayurveda, Unani, Siddha, Homeopathy) issued "Advisory" advocating preventive measures against the viral infection on 29 January 2020. There is severe criticism to "Advisory of AYUSH Ministry" from Indian Medical experts across the Nation for making such declaration in this global health crisis. The traditional healthcare system of the Nation offers supporting lifestyle for immunity enhancement which aids in keeping away from different kinds of infectious ailments. In recently occurred Corona epidemic it has been noted that it mainly affects the Respiratory system. AYUSH Ministry issued "The Advisory" to enhance defensive mechanism of the body for prevention of disease and not declared it as a curative measure for the Corona virus disease. This review focuses on the efficacy of the measures recommended by AYUSH Ministry on the basis of literature and researches available on them.



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INTRODUCTION

The 2019–20 coronavirus pandemic is an ongoing pandemic of coronavirus disease 2019, caused by

"severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)". It was reported in "Wuhan, Hubei province, China" in December 2019. In subsequent weeks, disease extends and spreads across China and other countries. On 12th February, 2020, "Coronavirus Disease 2019 (COVID-19)" is the term given by World Health Organization to the disease caused by new Coronavirus (9). WHO declared "COVID-19" outbreak as pandemic on March 11 (WHO, 2020).

Corona virus disease (COVID-19) is a zoonotic disease that is it pass from animal to humans, by intimate contact with infected animal and later it can be transmitted from one individual to another through droplets infection while coughing or sneezing or by touching infected surface. Fever, dry cough, tiredness, running nose, difficulty in breathing, bodyache, sore throat, vomiting and diarrhea

are the main symptoms. Provisionally it can be diagnosed by clinical symptoms. Confirmatory tests are "Reverse transcription polymerase chain reaction (rRT-PCR) of infected secretions" or "CT imaging of chest" (Ai *et al.*, 2020).

Being viral disease, at present there is no treatment available for Corona infection but at this time medicines and vaccines for fighting against infection are under trial. Management strategies are symptomatic and supportive to maintain vitals, oxygen saturation, blood pressure and treatment of complications like secondary infection or organ failure (As per guidelines of WHO & ICMR). Good balanced diet and good healthy lifestyle by practicing yoga and meditation help to boost immunity. Preventive measures are of supreme importance like hand hygiene, respiratory hygiene, environmental cleaning and social distancing to prevent bacteria and viruses from spreading.

With the world gripped by the contagion of the novel Coronavirus strain from China, India's Ministry of traditional medicine or AYUSH (Ayurveda, Unani, Siddha, Homeopathy) issued an "Advisory" advocating preventive measures of Ayurveda against the viral infection on 29 January 2020 (Sharma and Maurya, 2020). There is severe criticism to "Advisory of Ministry of AYUSH" from medical experts of Indian Medical Association and Healthcare experts across the country for stating such statement at the time of global health crisis as there is no evidence.

AYUSH system of healthcare supports traditional health practices. The traditional Healthcare system of the Nation offers supporting lifestyle for immunity enhancement which aids in keeping away from different kinds of infectious ailments. In recently occurred Corona epidemic it has been noted that it mainly affects the Respiratory system. AYUSH Ministry issued "The Advisory" to increase defensive mechanism of the body for prevention of disease and not declared it as a curative measure for the Corona virus disease. This review mainly focuses on the efficacy of the measures recommended by AYUSH Ministry on the basis of literature and researches available on them.

MATERIALS AND METHODS

Relevant literature, internet information and available research articles from Pubmed, Google scholar were searched, analyzed and summarized.

The Advisory given by "AYUSH health Ministry" includes the immunity boosting measures for self care during "COVID-19 epidemic". Enhancing the body's natural defense mechanism plays an impor-

tant role in maintaining optimum health. As there is no medicine available for COVID-19 till date, it will be good to take preventive measures which boost our immunity in these times. Measures shall be taken to strengthen the immune system through a balanced diet and healthy lifestyle practices.

Ayurveda emphasized on prevention of disease than cure. Ayurveda's extensive knowledge base on preventive care derives from the concepts of "Dinacharya (Daily regimes)" and "Ritucharya (Seasonal regimes)" to maintain healthy life.

Ministry of AYUSH recommends certain guidelines for "self care" including health measures for prevention by enhancing immunity specially for strengthening respiratory health.

RESULTS AND DISCUSSION

In Ayurveda epidemic diseases are described under the name of "*Janapadodhwansa vyadhi*". According to Ayurveda, all types of bacterial, viral and epidemic diseases can be correlated with *Sannipatik Jwar* (Fever caused by all the three *Doshas*). Similarly as per symptoms of COVID-19, it is clear that it mainly affects upper respiratory tract. Hence the above mentioned guidelines in Table 1 are mainly based on Ayurveda principles which have action on respiratory and immune system. These measures help in balancing *Tridoshas* and have ability to improve and strengthen the respiratory functions.

Under general measures it is advised to practice healthy habits for maintaining personal hygiene by frequent hand washing with sanitizer or soap and water for 20 seconds. Then it is advice not to touch frequently with unwashed hands to the eyes, nose, and mouth, avoid visiting to individuals having symptoms by adopting social distancing and staying at home, cover the mouth while coughing or sneezing and wash the hands following coughing or sneezing. Frequently handled objects and surfaces should be clean with disinfectant. Mask should be used to cover nose and mouth while going outside. If symptoms of Corona disease observed then contact to nearest hospital immediately. All these measures are helpful in preventing spread of infection of CORONA-19. These all measures are mentioned in Sushruta Samhita while describing causes of *Kustha* and termed it as "*Aupasargikaroga*" due to their nature of spreading from diseased person to healthy one through repeated contact.

In Ayurveda for prevention, as stated in point no 1 of Table 1, personal hygiene and good healthy practices are mentioned through concept of "Daily regimen and Seasonal regimen". "Daily regimen" described

Table 1: Recommended Measures by AYUSH Ministry against COVID-19 for “self care”

S.No	Measures for “self care” against COVID-19
1	“To practice personal hygiene”
2	“Drink warm water and Shadanga paniya throughout the day”
3	“Daily practice of Yogasana, Pranayama and Meditation for at least 30 minutes”.
4	“Use of spices like Haldi (Turmeric), Jeera (Cumin), Dhaniya (Coriander) and Lahsun (Garlic) in cooking”.
5	“Intake of Chyavanprash 10gm in the morning, Agastyaharitaki 5gm twice a day”.
6	“Drink herbal tea / decoction (Kadha) made from Tulsi (Holy Basil), Dalchini (Cinnamon), Kalimirch (Black pepper), Shunthi (Dry Ginger) and Munakka (Raisin) once or twice a day. Add jaggery (natural sugar) and or half tea spoon of fresh lemon”.
7	“Take Haldi (Turmeric) powder in 150 ml hot milk once or twice a day”.
8	“Pratimarsh Nasya (instilling oil in nasal cavity) with two drops of sesame oil, coconut oil or Ghee in both the nostrils in the morning and evening”.
9	“Gandush (Oil pulling therapy) in which sesame or coconut oil is taken in mouth and hold it for 2 to 3 minutes and spit it off followed by warm water rinse, once or twice a day.
10	“During dry cough or sore throat Steam inhalation with fresh Pudina (Mint) leaves or Ajwain (Caraway seeds) once in a day”.
11	“Lavang (Clove) powder mixed with natural sugar or honey can be taken 2-3 times a day in case of cough or throat irritation”.
	Consult health professionals if some symptoms appeared

by Ayurveda is an ideal daily routine activity as per the nature’s cycle for maintenance of good hygiene and health. It helps in maintaining equilibrium of *Doshas* (biological energies of the body) and the *Agni* (digestion fire) in proper state. It has also beneficial effects on physiological functioning of the body and mind. If one follows these practices properly, it will help in strengthening immunity and purification of the body by removal of wastes.

A “Seasonal regime” is the routine activity according to particular season described by Ayurveda. It helps to preserve good health as per the change of season. The main purpose of Seasonal regimen is to prevent disorders caused due to seasonal derangement of *Doshas*. According to season, unique diet, behavioral activities and specific procedures are described in Ayurveda, to stay healthy. These help in maintaining equilibrium of *Doshas* in the body and keep body and mind healthy (Rana and Chaudhary, 2017).

According to Advisory of AYUSH Ministry against COVID-19 for “self care” stated in point no 2 of Table 1, it is advised to drink hot water Ushnodaka (2014), by simply boiling it or reducing its quantity to 1/8th part or 1/2 part. Ushnodaka increases digestive power, alleviates *Kaphavata* and *Pittadosha*. It is useful in fever, thirst and it also opens the obstructed channels. It is desirable in Respiratory disorders like cough, cold, asthma and fever. Ushnodaka makes liquefaction of the dried

and solidified phlegm by melting action and enables it to move. It helps in relieving obstruction of breathing by its bronchodilatory and expectorant action (Ushnodaka, 2014). “Shadanga Paniya is the aqueous decoction of a polyherbal preparation containing equal amount of six herbs namely “*Musta* (*Cyperus rotundus* Linn.), *Parpat* (*Fumaria officinalis* Linn.), *Usheer* (*Vetiveria zizanioides* Linn), *Chandan* (*Santalum album*. L.), *Udeechya* (*Pavonia odorata* Willd) & *Nagar* (*Zingiber officinale* Roxb.) ” processed in water (10 gm powder boiled in 1 litre water, until it reduces to half)”. It is used in initial stages of fever and thirst. It reduces excessive thirst, burning sensation, restlessness and distaste. It helps in increasing appetite. It alleviates aggravated *Pitta* and *Kapha Dosh*. It reduces *Ama* (toxic undigested food particles) and *Amavisha* (toxins) from the body thus causing detoxification. Research paper presented by (March 2015) in National Conference on “Novel tools and treatment approaches in health care system (ISSN:0975-8232)” proved in vitro antibacterial activity of “Shadanga Paniya”.

Yoga, Pranayama & Meditation mentioned in point no 3 of Table 1, are important to improve respiratory health and immunity, thus are involved in the prevention and healing from COVID-19. Practice of Aasana, Dhyana and Praanayama is the best way for mitigating the isolation anxiety during lockdown period and can practice at home in isolation.

Yoga provides good physical health, reduces mental stress, and improves all physiological functions of the body. Yoga, Asanas, Pranayama and Meditation are very beneficial and easy to perform at all ages and conditions. Many Research studies proved that Yoga has excellent effect on the number of red and white blood cells. In one research study they found significant increase in the level of neutrophils and significant decrease in level of platelets after three weeks of Yoga practice. Increased Lymphocytes after practicing Yoga proved that it improves immunity. They found significant increase in hemoglobin and antioxidant superoxide dismutase (SOD) level with a significant fall in leukocytes in the yoga group as compared to the control group (Kant *et al.*, 2014).

Spices like Haldi (Turmeric), Jeera (Cumin), Dhaniya (Coriander) and Lahsun (Garlic) possess appetite stimulating, digestive, and antimicrobial property which help in improving general health which are advised to follow in prevention as stated in point no 4 of Table 1. Haridra (*Curcuma longa* Linn.) has *Tridosha* alleviating, bronchodilator, antipyretic, analgesic and anti-inflammatory properties. It is indicated in cough, asthma, fever, pruritus and various types of infections. It has immunomodulatory, Antibacterial, Antiviral, Antifungal and Antioxidant activities. Researches proved that curcumin, active ingredient has an extensive antiviral activity against various viruses so it is considered as an antiviral drug. In one research study "Effect of curcumin and curcumin boron complexes on the HIV-1 and HIV-2 proteases" they were evaluated and validated its immunomodulatory effect (Zorofchian, 2014).

Jeera (*Cuminum cyminum* Linn.) has *Kaphavata* alleviating, appetite stimulating, digestive, antimicrobial, analgesic and antipyretic properties. It is indicated in inflammatory conditions, abdominal pain, fever and infections caused by pathogens. They are used in bronchopulmonary conditions for cough and as an analgesic medicine. Immunomodulatory action of cumin seed was evaluated in immune-suppressed animals in which it stimulated the T cells and Th1 cytokines expression in normal animals. It possesses analgesic, anti-inflammatory and immunological effects (Johri, 2011).

Garlic (*Allium sativum* Linn.) has *Kaphavata* pacifying, expectorant (expulsion of phlegm), anti-inflammatory, analgesic, throat soothing, and antipyretic properties. It is indicated in diseases caused by *Vatadosha*, cough, asthma, tuberculosis and fever. It has rejuvenating property hence also used in general debility for boosting immune system. It has antimicrobial, cardioprotective, anti-cancerogenic, antiallergic and immunomodulatory

properties. Its main action in modulation is on cytokine profile and it has stimulation action on immune cells. Various phytochemical compounds of Garlic have the potential to influence immunity (Arreola, 2015).

Dhaniya (*Coriandrum sativum* Linn.) has *Tridosha* alleviating, appetite stimulating, digestive, antimicrobial, thirst suppressing, anti-inflammatory, analgesic and antipyretic properties. It is indicated in asthma, cough, fever, thirst and infections. It is rich in vitamin C, fatty acids (omega 6) and some minerals like Magnesium, Iron, Calcium, Zinc and Potassium. It contains phytochemicals like coriandrol, linalool, a terpenoid which are responsible for its antioxidant, antimicrobial and anti-inflammatory properties. The research was carried out to establish the effect of coriander fruit ethanol extract on phagocytic activity and on capacity of macrophage cells and leukocyte percentage which proved its immune enhancing action. Research studies also proved its antioxidant, antimicrobial and anti-inflammatory property (Saxena and Agarwal, 2019).

As per point no 5 of Table 1, *Chyawanprash* is advised which is prepared by processing fifty herbal plants. The main ingredient is *Amla* (*Embllica officinalis* Gaertn), natural abundant source of Vitamin C which acts as antioxidant. Acharya Charak mentioned it as *Rasayana* (Rejuvenating) mainly acting on respiratory system. It is useful for relieving cough, asthma and other respiratory diseases. It promotes good health by nourishing all body tissues, promotes vigor, vitality and has anti-ageing action (Tripathi and Singh, 1999). Regular consumption of it helps to achieve intelligence, excellent memory, immunity, stamina and sexual ability. It helps in improving functions of all sense organs, enhancing digestive power and metabolic activities, skin tone, luster and maintaining equilibrium of three *Doshas*. It is rich in vitamins, minerals and antioxidants. *Chyawanprash* helps to strengthen the respiratory system and improves the immunity. It is useful in management of allergic bronchitis, bronchial asthma, common cold, and tuberculosis. *Chyawanprash* is nutritious and revitalizes the psychosomatic system. It is useful for all age groups and genders.

As per point no. 6 of Table 1, Consumption of herbal tea or decoction (*Kadha*) made from Tulsi (Basil), Dalchini (Cinnamon), Kalimirch (Black pepper), Shunthi (Dry Ginger) and Munakka (Raisin) helps in boosting immunity and relieving respiratory related symptoms. Tulsi (*Ocimum sanctum* Linn.) is included under *Krumighna gana* (Antimi-

crobial). Many research studies proved adaptogenic, antimicrobial, anti-inflammatory, cardioprotective, and immunomodulatory properties of Tulsi. It is mainly indicated in fever caused by *Vatakapaha*, rhinitis, asthma, cough, pleurisy and tuberculosis. It also helps in reducing psychological and immunological stress (Jamshidi and Cohen, 2017). A randomized double-blind trial established that there is increased in Natural Killer (NK) and T-helper cells in healthy adult participants due to increase immune response as compared to placebo group after 4 weeks of 300mg or ethanolic Tulsi leaf extract. Tulsi is beneficial in the management of most of the respiratory disorders. It enhances both cellular and humoral immunity (Mukherjee, 2005). Ginger (*Zingiber officinale* Roxb.) has appetite stimulating, digestive, analgesic, anti-inflammatory and detoxification properties. It is mainly indicated in fever caused by three *Doshas*, asthma, cough and rhinitis. It possesses anti-diarrhoeal, anti-inflammatory, antinociceptive, antioxidant, antibacterial, anti-parasitic, hepatoprotective, antidepressant, gastroprotective and cardioprotective activities (Imtiyaz, 2013). *Trikatu* (Combination of three bitter herbal drugs) is a herbal preparation described in Bhaishajyaratnawali prepared by mixing equal parts of dried fruits of *Maricha* (*Piper nigrum* Linn.), *Pippali* (*Piper longum* Linn.) and *Shunthi* (*Zingiber officinale* Roxb.). It is useful in the management of tastelessness, correcting digestive impairment and disorders like chronic rhinitis, sinusitis, skin diseases, asthma, cough, frequent urination, obesity and filariasis. It is ingredient of many formulations. It helps in balancing *Tridoshas*. It possesses pungent taste, hot potency, light and dry property. It has Antioxidant, Hepatoprotective, Antimicrobial, Anthelmintic, Analgesic, Antifungal, Immunomodulatory, Antiallergic and Anti-inflammatory properties (Kaushik, 2018).

Cinnamon (*Cinnamomum zeylanicum* Breyn) has *Kaphavata* alleviating, appetite stimulating, digestive, mucolytic and Antimicrobial properties. It is indicated in cough, asthma and tuberculosis. It contains vital oils and phytochemicals like cinnamaldehyde, cinnamic acid, eugenol and cinnamate. In has antioxidant, anti-inflammatory, antidiabetic, anticancer and antibacterial property (Nabavi, 2015). Manukka (*Vitis vinifera* linn.) has *Vatapitta* alleviating, expectorant, antipyretic, lungs strengthening properties. So it is useful in fever, cough, asthma, lung disorders and general debility. It is rich source of dietary fiber, carbohydrates having low glycemic index, and contains minerals like copper and iron. Antioxidant contents in Greek raisins suppose to lower the risk for cancer of stomach and intes-

tine (Kountouri *et al.*, 2013).

Agastya Haritaki is a Rasayana working mainly on respiratory system. It contains *Haritaki* (*Terminalia chebula* Retz) as a main ingredient which has appetite stimulating, digestive, mucolytic, *Tridosha* alleviating, antipyretic and rejuvenating properties. It is indicated in anorexia, indigestion, cough, rhinitis, pharyngitis, hiccup, asthma, intermittent fevers, tuberculosis and general debility. *Haritaki* has been reported for its antioxidant, anti-mutagenic, anti-carcinogenic, anti-ageing, antibacterial, anti-viral, anti-fungal, anti-diabetic, cardioprotective, hepato-protective, anti-ulcer and wound healing properties (Gupta, 2012).

Rejuvenating property of Agastya Haritaki promotes complexion, longevity and strength. It also acts as respiratory tonic and provides strength to the lungs (Poudel *et al.*, 2019). Samshamani Vati contains 4 parts of *Guduchi* (*Tinospora cordifolia* Willd.) and 1 part of *Ativisha* (*Aconitum heterophyllum* Wall.) reference from Siddha yoga sangraha, Jwara. Sanshamani Vati is herbal preparation used for all types of fevers with different etiology. It has mild antipyretic and anti-inflammatory actions. It has *Amapachak* property which helps in detoxification of toxins causing disease. *Guduchi* has appetite stimulating, digestive, antipyretic and rejuvenating properties. It is indicated in cough, fever, malaria and general debility. Immunomodulatory property of *Guduchi* helps in enhancing immunity. Research studies conducted on *Guduchi* showed its antipyretic, antispasmodic, anti-inflammatory, antioxidant, anti-allergic, anti-stress, antimalarial, hepato-protective, immunomodulatory and anti-neoplastic activities (Upadhyay, 2010).

As stated in point no 7 of Table 1 it is advised to take Haldi (Turmeric) powder in 150 ml hot milk once or twice a day". Milk with turmeric has anti-inflammatory property which helps in digestion by promoting digestive fire. Antibacterial property helps in correcting infections

Pratimarsh Nasya (point no 8 of Table 1) is a type of Nasya (intranasal oil/drug administration) which is indicated as a daily regimen. It keeps the nasal passage and upper part of body free from diseases. It is indicated in diseased conditions as well as to strengthen the supra-clavicle part of the body such as head and sense organs because nostril is considered as route of head. The drugs administered through nostril reach to brain, eyes, ears, upper respiratory tract, oral cavity, neck region and cure the diseases of respective organs (Patil and Sawant, 2012). In *Gandusha* (oil pulling therapy) as stated in point no 9 of Table 1, one tablespoon of sesame

or coconut oil is hold in mouth for 2 to 3 minutes and spit it off followed by rinsing mouth with warm water. This is described in daily regimen by Acharyas. It can be done once or twice a day.

It prevents dryness of mouth and throat, cracking of lips and makes the teeth healthy and strong. In *Gandusha* and *Kavala*, dravyas are hold for some period of time in mouth that helps to improve the circulation of oral cavity. Gargling mechanism of *Kavala* helps in gentle massage action on the oral mucosa and thus helps in making the muscles of cheek, face and jaw strong.

Acharya Charak has described *Dhumapana* (Steam inhalation) for treatment of cough (stated in point no.10 of Table 1). For disease purpose *Vairechanika Dhumapana* is suggested in which steam is inhaled from mouth. It is used in cough caused by *Vata-Kapha dosha*, rhinitis and headache. It helps in elimination of aggravated *Kapha Dosha* from the chest and reduces congestion (Mehra and Samagandi, 2017). For steam inhalation fresh Pudina (Mint) leaves or Ajwain (Caraway seeds) are suggested. Ajamoda (*Carum roxburghianum* Benth.) has *Kaphavata* alleviating, analgesic and antimicrobial properties. Due to its strong odour, hot and pungent properties, it is indicated in asthma, cough, and hiccough for steam inhalation. Pudina (*Mentha spicata* Linn.) has *Kaphavata* alleviating, analgesic, antimicrobial, expectorant and antipyretic properties hence indicated in asthma, cough, and hiccough (Paul, 2013). The strong and aromatic odour of Mint helps to open the obstructed passage of airways and relieves difficulty in breathing. It acts as expectorant and facilitates the easy removal of phlegm, and thus gives fast recovery from cough. It has anti-bacterial and anti-inflammatory properties which reduces inflammation of respiratory mucosa and thus help in relieving symptoms (The Healthsite, 2015).

Lavanga (*Syzygium aromaticum* Linn.) as stated in point no.11 of Table 1, has appetite stimulating, digestive, expectorant, antimicrobial, bronchodilator and analgesic properties. It is indicated in asthma, cough and fever. Clove (*Syzygium aromaticum* L.) contains Eugenol which is a main constituent responsible for its therapeutic properties. Active constituents of clove possess antioxidant, anti-fungal, anti-viral, anti-microbial, antipyretic, anti-diabetic, anti-inflammatory, Analgesic and insect repellent properties (Bhowmik et al., 2012). It is useful in cold, influenza and bronchitis. Animal research conducted proved that, Eugenol isolated from clove buds showed antiviral activity against Herpes Simplex virus at a concentra-

tion of 10 µg/ml¹⁶ (Milind and Deepa, 2011).

CONCLUSION

From this review it can be concluded that the measures mentioned by AYUSH Ministry's Health Advisory in COVID-19 are helpful in prevention by enhancing immunity and relieving symptoms of COVID-19. These are recommended on the basis of their properties and action described in literature and available research studies. But to prove their efficacy and exact action specifically in COVID-19 further research studies should be needed.

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Conflict of Interest

No any conflict of interest associated with this study.

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