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Review over the ayurvedic drugs in the management of COVID-19

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Abstract

The immense tropic potential of Ayurveda science due to its three-dimensional holistic approach towards health *viz* physical, mental and spiritual plane, attracted Western population. Its preventing measures like avoiding *Prasnaga* (sexual contact), *Gatra Sansparsha* (touching) etc. to break the chain of transmission of infective agents. The emergence of pandemic of new communicable disease like SARS and Corona virus disease-19, the scientific fraternity had to rethink the methods of preventing and controlling infectious diseases. Promotion of the health of the human being is key to prevention of infectious diseases in Ayurveda. Ayurveda drugs plays an important role due to anti-inflammatory and Anti-viral effect in the management of COVID-19.

Keywords: Ayurveda, COVID-19, anti-inflammatory, Anti-viral, Shirishadi Kashaya, Aaupsargik roga and Janapaodhwnasha

Introduction

Ayurveda has holistic approach in prevention and management of diseases. Diseases are broadly classified as communicable and non-communicable depending upon their ability to get transmitted from one person to other. *Ayurveda* advocates various preventing measures like avoiding *Prasnaga* (sexual contact), *Gatra Sansparsha* (touching) etc. to break the chain of transmission of infective agents under the heading of the *Aaupsargik roga* as well as measures like *Rasayana* (rejuvenation therapy), *Panchakarma* (Pentabio purification therapy) etc. to promote the *Kshetra* (i.e. human body). Recent example is the pandemic of COVID-19 (corona virus disease-19) which resulted in maximum number of deaths i.e. more than 170,865 and more than 5437118 positive cases in United States of America and Italy with greater than 35 thousands deaths and more than 2.5 lakhs positive cases, both the countries having the best health care services in the World, probably due to ignorance of primitive measures of prevention such as social distancing (a variant of *Sthana Tyagain Ayurveda*)^[1-2]. Although communicable diseases have been controlled to a large extent with the help of modern preventive measures like vaccination etc. But emergence and reemergence of infective diseases have led to re look the measures of prevention and requirement to complement them with health promotive methods like *Rasayana* etc. advocated in *Ayurveda*. In *Charka Samhita* (between 100 BCE and 200 CE), the term *Janapaodhwnasha* has been used for the death of large number of people of a district/region from diseases probably infectious or communicable^[3]. Contamination of *Vayu* (air), *Jala* (water), *Desha* (place or soil) and Changes in *Kala* (season) may be responsible for the spread of diseases that lead to death of many persons of a country. In *Sushruta Samhita* (Mid 1st Millennium BCE- Wikipedia), the term *Aupasargika Roga* has been used to denote the diseases that communicate from one man to another for e.g. *Kushtha* (skin diseases), *Jwara* (fever), *Shosha* (Emaciation or tuberculosis), *Netrabhishyanda* (conjunctivitis)^[4]. There are different modes of transmission from one man to other include *Prasanga* (sexual contact), *Gatrasansparsha* (skin to skin touch), *Nihashwasa* (exhaled air), *Sahabhojana* (sharing food), *SahaShaiya* (sleeping closely), *Asana* (sitting close to each other), using *Vastra* (cloths of each other), *Malya* (using garlands) and *Anulepana* (using *Chandana* etc. in paste from after bath through a common vessel). Use of *Rasayana* to increase Oja (ie essence of Dhatus i.e. the structural element of body) and thus boost the immune system and general measures to prevent transmission of infections such as *Snana* (bath), *Sthana Tyaga*.

(Change of place or social distancing or quarantine/isolation), purification of atmosphere through *Yagya* (burning specific herbs and materials) have been described in ancient texts. *Prayashchita* (expiation), *Mangala* (rejoice), *Japa* (repeating the name of a God), *Homa* (a Vedic ritual, burnt offering), *Upahara* (an offering present), *Ijya* (*Yagya*) i.e. offerings in the presence of sacred fire, *Anjali Namasar* (a way of salutation), *Tapa* (self-discipline), *Niyama* (positive observances), *Daya* (compassion), *Dana* (to donate), *Diksha* (initiation in divinity) etc. *Sutaka* (10 days for female child or 20 for male child) days to avoid contact with the persons of the society just after delivery of a child by the mother which probably helps the new born as well as mother from getting infected^[5-7].

The term *Sutaka* has been also used to denote the time period (10 days to 30 days) taken by a person for getting purified after death of a relative. Clinical Measures/Management for Communicable Diseases which includes *Nidana Parivarjana*, *Langhana* (various methods of fasting), *Langhana Pachana*^[8] (Using herbs that produce lightness and digest *Ama* (undigested food) and *Doshawasehana* (purification by *Vamana* i.e. emesis therapy and so on) *Rasayana* (*Naimittika*) eg *Chyavanprasha*. Medicaments like *Krimihar Dravya*, *Rasaushadhi* e.g. *Krimikuthar Rasa*, *Lakshmivilas Rasa*, *Trivuvan Kirti*^[9]. With the advancement in medical sciences, infectious diseases have been controlled to a large extent, but with the emergence of pandemic of new communicable disease like SARS and Corona virus disease-19, the scientific fraternity had to rethink the methods of preventing and controlling infectious diseases. Promotion of the health of the human being is key to prevention of infectious diseases in Ayurveda^[10-12]. One such example with herb *Tinospora cordifolia* which contains the (1, 4)-alpha-d-glucan (alpha-d-glucan), derived *Tinospora cordifolia* have been shown to activate human lymphocytes with downstream synthesis of the pro- and anti-inflammatory cytokines, *in vitro*. Synergistic effects of compounds in the immunomodulation activity of *Tinospora cordifolia* are reported. The methanol extracts of *Tinospora cordifolia* have been reported to have action against microbial infections. The anti-bacterial activity of *Tinospora cordifolia* extracts has been assayed against *Escherichia coli*, *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Proteus vulgaris*, *Salmonella typhi*, *Shigella flexneri*, *Salmonella paratyphi*, *Salmonella typhimurium*, *Pseudomonas aeruginosa*, *Enterobacter aerogene*, and *Serratia marcescens* (Gram-positive bacteria)^[13].

Intervention and schedule as recommended

1. Samshamani Vati 500 mg. twice a day with warm water.
2. Agasthya Hareetaki: 12 gm twice a day with warm water.
3. Shrishadi Kashaya 40 ml twice a day with warm water.

Samshamani Vati (also called Guduchi Ghanavati) is an ayurvedic herbal formulation used for all types of fevers with different aetiology. It has mild antipyretic and anti-inflammatory actions. It is also *Ama Pachak*. Samshamani Vati works on *Ama*, removes it from the body by digesting or eliminating and prevents further formation *Ama* which mainly contains *Giloy Ghan* – *Tinospora cordifolia* Extract 120 grams, *Loha Bhasma* 12 grams, *AbhrakBhasma* 12 grams and *Swarna Makshik Bhasma*^[14].

Shrishadi Kashaya mainly possesses the property of *Shirsha* that is reduces bronchospasm which mainly contains *Albigenin*, *Albiziagein*, *Saponin*, *lebekannins*, *D-catechin*, *lebbeccacidin*, *melacacidin*, *friedelin*, *B-sitosterol*. Recent studies have shown that Aqueous extract of both stem and bark and flower significantly reduced broncho-spasm induced by mico-aerosol of histamic acid (1 % solution) phosphate and acetylcholine chloride (1 % solution) in guinea pig bronchi. In another study *Sirish* has shown a significant disodium cromolocate like activity on the mast cells. The decoction of the bark significantly reduced the blood sugar contents of the fasting rat on 7 days administration. The serum cholesterol and adrenal cholesterol were also reduced significantly in rats^[15-16].

Another such drug *Kantakari* which is *Solanum xanthocarpum* which contains *B-Carotene*, *diosgenin*, *carpsterol*, *solasodine*, *solamargine*, *B-D-glucoside*, *tomatidenol* studies showing that Plant powder is anti-tissue and it has a beneficial effect in bronchial asthma and non-specific cough has been explained as due to depletion of histamine from lungs and its expectorant action as due to inorganic nitrate contents. Where role of *Kantakari* in *Kasaroga* is in clinical study shows the Anti-bacterial activity against pathogenic staphylococci^[17-19].

Anti-inflammatory and anti-viral drugs

Bhumyaamalaki (*Phyllanthus niruri*)

Bhumyaamalaki is a contents of *Swahhar maha Kashya* of *Charak*. The antiviral and cytotoxic activity of *Phyllanthus*, Recent studies have shown that an aqueous extract made from of this plant exhibited selective antiviral indexes of 12.3 and 26 against bovine herpes virus type 1 and herpes simplex virus type 2, respectively, showing no selective antiviral activity against adenovirus type 5 and mengo virus. Incubation with this plant extract during cell culture infection, impaired the productive replication of both herpes viruses in an extract concentration-dependent manner, also depending on the multiplicity of infection (MOI) used^[20].

Nagarmotha (*Cyperus rotundus*)

Nagarmotha is another such which produces the the immense potential of the anti-viral along with anti-inflammatory many studies impact this action especially the presence of the *Galic Acid* shows the potency and better absorption if this drug^[21-22].

Pippali (*Piper Longum*)

Pippali contains the essential oils like mono and serqnterpenes *Caryophylle*, *piperine* (mainly), *aristolactum*, 4-5 *dioxoaporphines* which has Antifungal activity against *Trichterrestre* along with *Piperine*, exhibited antibacterial and anti tumor activities and Research work on therapeutic effect of *Vardhamana Pippali* in patients suffering from *Tamaka Shvasa* - was a single blind comparative clinical study, 20 patients each were treated with *Vardhamana Pippali rasayan* for 19 days and *Pippali* 500 mg twice a day for 19 days in two different groups. A high-quality efficacious response was observed in Patients treated with *Vardhamana Pippali*^[23-24].

Bilwa (*Aegle Marmelos*)

The anti-inflammatory activity of the aqueous root bark extract of *Aegle marmelos* (*Bilwa*) in experimental acute

and chronic inflammatory shows its potent action which can be incorporated for the management of the COVID-19^[25].

Haridra (*Curcuma longa*)

Mainly exhibits the Karachine (a protoberberine alkaloid) taxilamic berberine, palmatine, jatrorrhizine, oxycanthine. Evaluating the effect of Haridra Dhoomapana and Samana Chikitsa in patients of Tamaka Shvasa, 20 patients are treated with Haridra Dhumapana for 7 days and Shvasakutara rasa 250 mg tid for 10 days in the first group and Shvasakutara rasa 250 mg tid alone for 10 days in the second group. The result shows moderate remission of symptoms in 20 % of patients. Piperineinhanse the absorption of the cur cumin ND it acts like anti-inflammatory which acts on interleukin and TNF alpha and PG^[26-27].

Conclusion

Advancement in medical sciences, infectious diseases have been controlled to a large extent, but with the emergence of pandemic of new communicable disease like SARS and Corona virus disease-19, the scientific fraternity had to rethink the methods of preventing and controlling infectious diseases. Promotion of the health of the human being is key to prevention of infectious diseases in Ayurveda. Hence it can be concluded that Ayurveda plays an important role due to anti-inflammatory and Anti-viral effect in the management of COVID-19.

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