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IMMUNITY BOOSTER HERBS AGAINST CORONAVIRUS

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ABSTRACT

In the present scenario it has become more important to build our defense system stronger against it as no evidence-based treatment for COVID-19 is developed yet. Since time immemorial, traditional spices and herbs has always played a vital role as immuno-boosters in Indian cuisine. The findings of some previous studies on the immunomodulatory effects and antiviral activities of particular foods and herbs on influenza virus and coronavirus have been collated, with the aim of promoting the use herbal medicine as COVID-19 preventive therapies. The volume of existing reports is irrefutable evidence that foods and herbs possess a potential antiviral ability against SARS-CoV-2 and can prevent COVID-19. Herbs and spices are well known from ancient times for their medicinal properties. India is home to Several spices that are used extensively in traditional medicine. Herbs like Amla, Ashwagandha, Cinnamon, Giloy, Moringa, Neem and Tulsi are said to have several health benefits. Herbs and spices are wonderful because unlike drugs, we don't need to "take" them. Instead, we add them to our favorite dishes for a kick of flavor and increased immunity.

KEYWORDS: COVID-19, Pandemic, Herbaceous, Perennial, Diaphoretic and Antilipemic.

INTRODUCTION

The eruption of the critical acute respiratory syndrome coronavirus 2 (SARS-CoV-2) also known as Covid-19, was first identified in Wuhan City, Hubei Province, China.[1] It was referred to as the eruption of pneumonia of unknown cause. The World Health Organisation declared SAR-CoV-2 as a pandemic on March 11, 2020. Millions of people have been affected in several countries since it was first recognized. Covid is thought to commonly

spread via respiratory droplets formed while talking, coughing and sneezing of an infected patient. The standard treatment against COVID-19 is presently lacking. But a few antiviral, anti-inflammatory and some antibiotics agents are being used for treatment. The examination of the death pattern of Covid-19 patients disclosed that early deaths were in older people, probably due to poor immunity, which induces faster progress of Covid-19. Therefore, it is important to boost our immune system. It is important to put forward some supplements that would boost up the immune system.

Plants have been used in Ayurvedic medicines since ages. Generally they have no side effects and are non-toxic. Different parts of medicinal plants show antiviral and immunity strengthening properties. During this deadly pandemic, it is important to stay healthy and build a strong immune system and the best way is to build immunity naturally with the use of medicinal plants/herbs. Ayurveda, the alternative medicine system and the ancient medical science, has declared long ago that plant extracts can help a lot to strengthen the body. Some of the important medicinal plants are listed in this article which potentially can help in boosting the immune system against Covid-19.[2,3]

Amla (Phyllanthus emblica)

Phyllanthus emblica, is a deciduous tree belonging to the family Phyllanthaceae. It is commonly known as emblic, emblic myrobalan, myrobalan, Indian gooseberry, Malacca tree, or amla. It consists of a high amount of ascorbic acid (vitamin C) which is highly recommended during this pandemic to build up immunity. Other constituents of Amla are ellagitannins, such as emblicanin A, emblicanin B, punigluconin, pedunculagin. And punicafolin and phyllanemblinin A, phyllanemblin. It also contains • large amount of polyphenols like ellagic acid, gallic acid, tannins, minerals, vitamins, amino acids and fixed oils which helps to inhibit development of cancer cells • Flavonoids like rutin and quercetin. Amla Revitalise and rejuvenate the body system, hence making it perfect for overall immunity. Amla is often recommended in pitta conditions due to its cooling nature which helps remove excess body heat. Also helpful in ailment of gastro-intestinal tract. It has anti-inflammatory properties which help in soothing joint pains. Other therapeutic applications of Amla are antidiarrheal and spasmodic, anti-diabetic, antimicrobial, anti-viral, ulcer protective, wound healing, hepatoprotective, memory enhancer, Hair growth promotion, anti-oxidant and many more.[4,5]

Ashwagandha (Withania Somnifera)

Withania Somnifera is commonly known as Ashwagandha, indiangingsen, poison gooseberry or winter cherry. It as a small shrub consisting of pale green flowers, simple leaves and red berries.[6,7] Withaniasomnifera belongs to family Solanaceae. Main constituents of Ashwagandha are Withanolides- namely triterpene lactones-withaferin A, alkaloids, steroidal lactones, tropine, and cuscohygrine.[8] Withanolides are responsible for its immunomodulating antimicrobial and anti tumor properties . Ashwagandha is scientifically known as adaptogen, which means it helps in decreasing stress levels. Stress lowers the immune response and makes the body more prone to viral infections. It is one of the most powerful immune boosting herbs. Regular consumption of Ashwagandha strengthens the immune system as it stimulates white blood cells or lymphocytes to fight infections and viruses. It also helps reduce the risk of contracting coronavirus infection. Ashwagandha improves the cell-mediated immunity which improves the body's defense mechanism. It also posseses antioxidant and antidiabetic properties. Also reduces blood sugar levels, cortisol levels, symptoms of depression and inflammation.[9,10,11]

Cinnamon (Cinnamon verum)

Cinnamon is made up of inner bark of cinnamomum tree. It belongs to family Lauraceae.[12] Cinnamon contains vital oils and other derivatives such as cinnamaldehyde, cinnamic acid and cinnamate. The bark of various Cinnamon species is widely used not only for cooking but also in traditional and modern medicines. The essential oils and other constituents of Cinnamon show antimicrobial, antifungal, antioxidant and antidiabetic properties. Cinnamon protects the body from bacterial and viral attacks, thus acting as an immune stimulator. It also effectively treats respiratory tract infections caused by fungi. Anti-inflammatory, antioxidant and antimicrobial properties which are exhibited by cinnamon are beneficial to immune health. And during this Covid -19 pandemic, it is highly recommended to build up immunity. Cinnamon also fights inflammation and infection, and heals damaged tissue. Studies have shown that it also shows antitumor, antihypertensive, antilipemic, antidiabetic and gastroprotective properties.[13,14]

Giloy (Tinospora Cordifolia)

Tinospora Cordifolia is a herbaceous vine of family Menispermaceae. It is commonly known as Giloy, Guduchi, heart-leaved moonseed. It has been recommended in traditional medicines to treat various disorders since ages. Tinospora Consists of diverse phytochemicals which

include alkaloids, phytosterols, glycosides and mixed other chemical compounds.[15] It was studies that (alpha) -D- glucan, the main chemical constituent of Giloy stimulates B cells and T cells, natural killer cells with simultaneous production of different immune stimulatory cytokines, thus promoting immunomodulatory properties.[16] Giloy leaves are rich in Vitamin C , which is highly recommended supplement during Covid -19 .Regular intake of Giloy can raise immunity to fight against covid. It also promotes early recovery by increasing the activity of macrophages. Giloy kadha or tablets removes toxins from the body, thus increasing immunity as well as treating skin problems. It also shows pharmacological properties like anti cancer, hepatoprotective, anti bacterial, anti inflammatory, hypolipidemia, hypoglycemia, antiobesity, anticarcinogenic and antimutagenic properties.

Moringa (Moringa oleifera)

Moringa oleifera is a drought-resistant, fast- growing tree belonging to family Moringaceae. It is commonly names as Moringa, drumstick tree, horse radish tree, ben oil tree or benzolive tree. Main active constituents of Moringa includes flavonoids, alkaloids, phenols, vitamins, minerals, proteins, glycosides, glucosinolates and Isothiocyanates, terpenes, saponins, tannins and many more. Various important nutrients present in Moringa are Vitamin C, Vitamin A and proteins.[17,18,19] It should be your go-to herb during the Covid-19 pandemic, as the content of Vitamin C present in Moringa is more than that of present in Orange. Greater intake of Vitamin C leads to building stronger immunity. It acts as anti-microbial and anti-inflammatory agent.[20] Moringa is rich in potassium, iron, calcium and amino acid . It also contains some other vital nutrients which help strengthen body cells, tissues and muscles. Intake of various doses of Moringa causes increase in level of white blood cell counts (i.e., helps fight foreign bodies) and immunoglobulin levels.[21] The Moringa oleifera shows potent activity towards various ailments such as cancer, diabetes, inflammatory, antibacterial properties, cardiovascular diseases, and many more.

Neem (Azadirachta indica)

Neem (Azadirachta indica) is a tree belonging to the family Meliaceae. It is commonly known as neem, nimtree or Indian lilac. Neem consists of azadirachtin (the most important active constituent) and nimbolin, nimbin, nimbidin, nimbidol, sodium nimbirate, gedunin salannin and quercetin. Neem leaves, seeds, flowers are well known for its medicinal properties. It is also known as Universal healer (sarva roga nivarini) meaning one that cures all ailments and illness. It helps the body to fight all types of infections thus widely used as

an immune booster. Neem leaves extract powder or crude neem leaves content might inhibit coronavirus as it prevents it from replicating. Neem cools down your body internally and also keeps the blood clean by flushing away toxins. This also strengthens immunity. Neem effectively acts as an antiviral, antibacterial and antifungal agent. Regular intake of Neem capsules can prevent malaria, high fever, viral flu, dengue and other infectious diseases. Few other therapeutic uses of neem are anti-inflammatory, anti- diabetic, preventing and curing acne, treating dry skin, reducing hair fall, and promoting hair growth.[22, 23, 24]

Tulsi (Ocimum Sanctum)

Another wonder herb in the traditional system of medicine is Ocimum Sanctum.It is an aromatic perennial plant belonging to the family lamiaceae. It is commonly known as holy basil or tulsi. Phytochemical constituents of Tulsi are oleanolic acid, ursolic acid, rosmarinic acid, eugenol, carvacrol, linalool, and β-caryophyllene (about 8%). Tulsi is a well known herb in Covid 19 due to its germicidal property which helps to locate germs, viruses and bacteria and destroy them. It also cures respiratory tract infections such as cough, sore throat, cold, asthma etc. It is effective in removing excess kapha from lungs. In this pandemic hand sanitizer has been playing a vital role and tulsi, due to its antimicrobial property, has been used as natural hand sanitiser. Fresh Tulsi juice, if taken twice a day, will help boost the immunity. Tulsi improves vital capacity. It enhances immune response by increasing NK cells and T-helper cells with rise in lymphocyte and neutrophil count which makes Tulsi an effective immune-modulator and regulator. It is rich in vitamin C, anti-oxidants, antiviral and antiseptic properties. It is also recommended for the treatment of bronchitis, bronchial asthma, malaria, diarrhea, dysentery, skin diseases, arthritis, painful eye diseases, chronic fever, insect bite etc. Tulsi also posseses antifertility, anticancer, antidiabetic, antifungal, antimicrobial, hepatoprotective, cardioprotective, antiemetic, antispasmodic, analgesic, adaptogenic and diaphoretic properties.[25,26,27]

CONCLUSION

In COVID-19 Pandemic, entire mankind across the globe has suffered. During this crucial phase, it is important to increase the body's natural defence system to maintain optimum health. Medicinal plants and their natural ingredients are proven to be the most promising alternatives to prevent or cure the infection and spread of this disease since its outbreak. Basically, these formulations are comprised of huge number of phytochemicals that possess myriad of functions against viral invasion, penetration, replication, expression, assembly and

release. The medicinal herbs play a supplementary role in developing the immune system and fighting deadly viruses including COVID-19. Thus, herbal medicine could be a complementary preventive therapy for COVID-19.

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