

MEDICINAL PLANTS FOR LONGEVITY IN SUSTAINABLE HUMAN HEALTH- A REVIEW

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Article Received on
22 January 2024,

Revised on 12 Feb. 2024,
Accepted on 02 March 2024

DOI: 10.20959/wjpr20246-31461



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ABSTRACT

Background: Ayurveda, one of the world's oldest systems of medicine, originated in ancient India over 3,000 years ago. It places a strong emphasis on maintaining balance in the body, mind, and spirit for optimal health. Ayurveda extensively uses medicinal plants, herbs, and natural substances to prevent and treat various health conditions. As in modern-day life, A vast number of pathogens attack the immune system during an infection, pollutants/ xenobiotics has resulted in the emergence of a variety of immune deficiencies or hypersensitivity situations, where immunity plays an important role. A large number of plants metabolites such as guduchi, aswgandha, amlaki, bala etc. as are thought to modify to show the immunomodulatory activity. Immunomodulators are substances that can either enhance or suppress the immune system's activity, helping to regulate and balance immune responses. Medicinal plants have been a valuable source of

immunomodulators for centuries, providing natural compounds that can influence the immune system in various ways. **Aims and Objectives:** In this review article, we summarize some important plants which can increase the immunity to fight against pathogens and maintain overall health. **Materials and Methods:** The current approach is to know about the medicinal plants that are biologically active and could potentially be of help in the immunity and whole-body development. **Discussion:** every person wants to live long and healthy life. For the sustainable human health ayurveda mentioned many medicinal plants they have various beneficial effect on our body like promote *dhatu Vardhan*, immunity, *vyadhi nasahana* and *jaranashana* etc.

KEYWORDS: Sustainable Health, Immunomodulator, Immunity, Metabolites, Plants for longevity.

INTRODUCTION

The use of these medicinal herbs as immune system modulators is currently gaining a lot of attention. Numerous studies in the field have revealed that a variety of substances, including alkaloids, flavonoids, terpenoids, polysaccharides, lactones, and glycoside derivatives, are to blame for changes in the immunomodulatory capabilities.^[1]

Ayurveda, the Indian system of medicine deals with plant drugs, the main stress being on strengthening body's own defence system. The concept of "*Rasayana*" was put forth in Ayurveda, meaning a group of plants with potential to treat body's main defence system.

Ayurveda is devoted to '*Rasayana*' drugs to enhance body resistance. Ayurveda focuses on the use of plant-based medicines and treatments. We can induce the concept of ayurveda into it and strengthen our immune system.

Plants extracts are being used for rejuvenating therapy and treatment of chronic disorders. These have been shown to possess immunostimulatory activity.

There is a lot of interest in the current research being done to create natural compounds made from plants that are both effective and safer to use as immunomodulators. The development of herbal medicine as a multi-component agent is anticipated to influence the intricate immune system in a way that prevents infection rather than treating and curing disease. The current review concentrates on an overview of several medicinal plants and their immunomodulatory activities.

In this context, *Acharya Charak* said that, *Rasayana* has two main objectives^[2],

a) *Svastsyo swastharakshanam*- To maintain health of healthy individuals or to prevent development of disease, is called immunity.

b) *Aturasya vikaraprashamanam cha*- To cure the disease of diseased one's by correction of dosha disturbances and improve *Agni* and *Dhatu* function, which enhances general strength and immunity. *Rasayana* is the main to treat immunodeficiency by enhancing the functions of *Rasadi dhatus* and enriching ojas.

Thousands of years ago *Vyadhikshamatwa* (Immunity) was described by *Acharya Charaka*.^[3] It is defined as the resistance power to keep body disease free and kill the microorganisms. The aim of Ayurveda is to protect the health before occurrence of disease and to cure the diseased one.

AIMS AND OBJECTIVES

To elaborate the knowledge about traditional medicinal plants for healthy life span with the help of concept of *rasayana* and correlation of immunity with ayurveda and medicinal properties of some common plants.

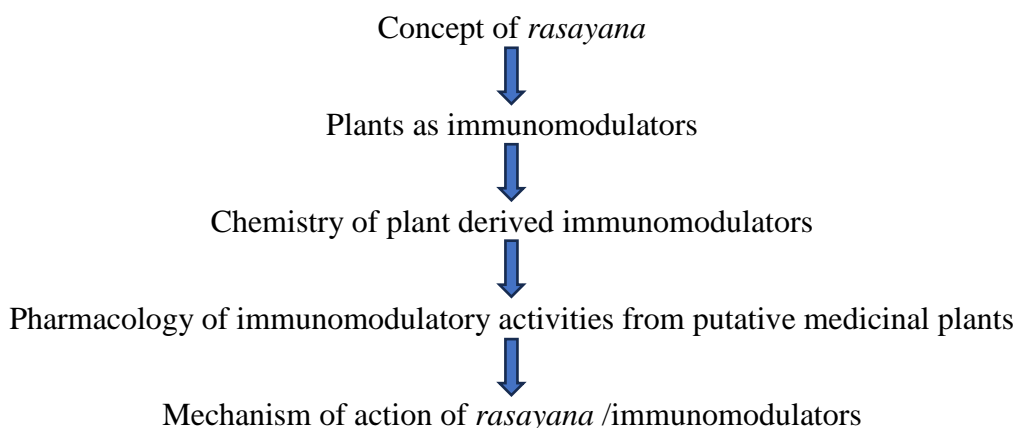
MATERIALS AND METHODS

This article is carried out using traditional ayurvedic text books, research articles, review articles and different websites were used as source of information. the current approach is to know about some medicinal plants for healthy life span with the help of immunity concept, modern correlation and their therapeutic effects, different formulations, mode of action.

IMMUNOMODULATORS

Immunomodulators is define as a biological or synthetic molecule that has the ability to stimulate, inhibit, or modify any of the components of the immune system. A healthy immune system Increased the expectancy of life. Immunomodulator intake along with antigen, the process is meant to boost the immunity. Clinically, immunomodulators can be classified into the following three categories: Immunoadjuvants, Immunostimulants and Immunosuppressants.

CORRELATION OF IMMUNOMODULATORS WITH AYURVEDA^[4]



MECHANISM OF IMMUNOMODULATORS/RASAYANA

According to Ayurveda^[5]

Rasayana strengthens the entire physiology, producing resistance against disease. *Rasayana* drugs are benefitted for preservation of positive health. *Rasayana* is a special method of healing that affects the *Dhatu*, *Agni*, *Ojas* and *srotas*, which are the foundational elements of the body. Various *Rasayana* drugs may act different pathways by their distinct pharmacological action.

According to modern^[6]

Rasayana drugs such as *Guduchi*, *Haridra*, *Pippali*, *etc.* are observed to possess immunomodulating effects. The promotion of body's defensive mechanism, such as raising the WBC count and enhancing immunological function, is one strategy to increase immunity. In an in vitro study on immune competent cells, aqueous extract of the stems of *Guduchi* was found enhancing T as well as B cells responses and protected mice against experimental infections (Sainis et al, 1998).

COMMON MEDICINAL PLANTS FOR LONGAVITY^[7]

Ashwagandha (Withania somnifera) – Often referred to as Indian ginseng, *ashwagandha* is an adaptogenic herb used to reduce stress, promote energy, and support overall well-being. It is believed to enhance vitality, boost the immune system, and improve overall well-being.

Useful part – Dried mature roots

Formulations – *Ashwagandha Churna*, *Ashwagandharishta*, *Ashwagandhaavleha*, *Ammukkara Churna*



Haridra (Curcuma longa) – Turmeric contains curcumin, a compound with potent anti-inflammatory and antioxidant properties. curcumin, has potent anti-inflammatory and antioxidant properties. Inflammation and oxidative stress are associated with aging, and overall immunity turmeric is thought to counteract these processes.

Useful part – Dried rhizomes

Formulations – *Haridrakhanda, Rajanyadi churna.*



Tulsi (Ocimum sanctum) – Also known as Holy Basil, it has adaptogenic properties and is used to reduce stress, support the respiratory system, and enhance overall vitality

Useful part – Whole plant

Formulations – *Tribhuvankirthi Rasa, Manasamitra Vataka.*



Brahmi (Bacopa monnieri) – Brahmi is traditionally used to enhance cognitive function, improve memory, and reduce stress. It is often used in Ayurvedic formulations to support mental clarity.

Useful parts – Whole plant

Formulations – *Sarasatwarishta, Brahmi Ghrita, Brahma rasayana.*



Guggul (Commiphora wightii) – Guggul resin is used in Ayurveda to support healthy cholesterol levels and promote joint health. It is also believed to have anti-inflammatory properties.

Useful parts – Exudate of the plant

Formulations – *Vatari Guggulu, Laksha Guggulu, Yogaraja Guggulu, Yosadi Guggulu*



Shatavari (Asperagus racemosus) – Shatavari is known for its nourishing properties and is used to support the female reproductive system. It is often recommended for women's health, fertility, and hormonal balance.

Useful parts – Tuberous roots of the plant

Formulations – *Narsimha Churna, Narayana Taila, Shtavari Guda, shatavari granules.*



Amlaki (Emblica officinalis) – Also known as Indian gooseberry, *amlaki* is a rich source of vitamin C and antioxidants. It is used in Ayurveda to support the immune system, promote digestion, and enhance overall vitality.

Useful parts – Dried and fresh fruits

Formulations – *Chyavanprasha, Drakshavaleha, Amlyakadi Churna.*



Haritaki (Terminalia chebula) – *Haritaki* known for its detoxifying properties. It is used to support digestion, cleanse the gastrointestinal tract, and promote overall health.

Useful parts – Dried fruits

Formulations – *Triphala Churna, Triphala Ghrita, Agastyaharitaki Rasayana, Abhayarishta, Dashmula Haritaki, Vaiswanara Churna*



Shobhanjan (Moringa oleifera) – Moringa is a nutrient-rich plant that has been used traditionally for its health-promoting properties. It is a good source of vitamins, minerals, and antioxidants.

Useful parts – root bark, stem bark, leaves, fruits and seeds.

Formulations- *shothaghana lepa, aragwadhadi kashaym, murivenna tailam*



Yastimadhu (Glycyrrhiza glabra) - also known as licorice or Glycyrrhiza glabra.

The active compounds in licorice, such as glycyrrhizin, have anti-inflammatory, antioxidant properties. Licorice is thought to support adrenal function, and it is sometimes used to help manage stress and fatigue, respiratory, digestive, immune system support.

Useful part – Dried roots

Formulation – *Madhuyastyadi taila, Drakshavleha, Nyagrodhadikwath churna.*



Shunthi (Zinger officinale) – Ginger contains bioactive compounds with anti-inflammatory and antioxidant effect, which can help neutralize harmful free radicals in the body. ginger helping to lower blood pressure and improve cholesterol levels and regulating blood sugar levels. Maintaining stable blood sugar levels is important for overall health.

Useful part – Dried rhizomes

Formulations – *Trikatu churna, Vaiswanara churna, Amrita ghruta, Kottamcukkadi taila.*



Pippali (*Piper longum*) – *Pippali*, is used to support digestion, metabolism, and respiratory health. It is believed to have rejuvenating properties. Piperine, in particular, has been studied for its potential role in improving insulin sensitivity. It is thought to have expectorant properties that may help in managing respiratory issues.

Useful part – Dried fruits

Formulations – *Trikatu churna*, *Drakshaveleha*, *Pippalyadyasava*.



Punarnava (*Boerhaavia diffusa*) – *Punarnava* is traditionally used for its diuretic properties and is believed to support kidney health. It's also used for managing edema. *Punarnava* is believed to have hepatoprotective properties. Certain compounds in *Punarnava* have antimicrobial activity. This may contribute to its traditional use for infections and as a general immune system booster. *Punarnava* is known for its potential health benefits, and its name in Sanskrit translates to "renewer" or "one that renews the body."

Useful part – Dried matured whole plant

Formulations – *Punarnavasava*, *Punarnavashtaka kwath churna*, *Shothagna lepa*.



Jatamansi (*Nardostachys jatamansi*) – *Jatamansi* is used for its calming properties and is believed to support mental well-being and relaxation, sleep aid (It is believed to have sedative properties that may help individuals with insomnia or difficulty sleeping). *Jatamansi* may have neuroprotective effects and could potentially support cognitive function. It is believed to have a calming effect on the mind and nervous system, making it useful for managing stress and anxiety. enhance memory and concentration.

Useful part – Dried rhizomes

Formulations – *Jatamamsyarka*.



Gokshura (*Tribulus terrestris*) – Gokshura is used for its diuretic properties and is believed to support urinary and kidney health helping to flush out toxins and support kidney function. It is also considered an aphrodisiac. Gokshura may have an influence on hormone levels, particularly testosterone. It is traditionally used to balance hormones and support overall endocrine health.

Useful parts – Dried ripe entire fruits

Formulations – *Gokshuradi guggulu, Trikantaka ghrita, Narsimha Churna.*



Meshshringi (*Gymnema sylvestris*) – While it has been used for various health purposes, including managing diabetes It may help in managing diabetes by reducing the absorption of sugar from the intestines and enhancing insulin function and supporting weight management by reducing sugar cravings and appetite. this herb may have a positive impact on cholesterol levels, contributing to cardiovascular health.

Useful part – Dried leaves

Formulations – *Mahavisagarbha taila, Nyagrodhadi churna.*



Bala (*Sida cordifolia*) – Bala is considered an adaptogen in Ayurveda, means it may help the body adapt to stress and restore balance. Adaptogens are believed to support overall well-

being. *Bala* may have immunomodulatory effects. A balanced and responsive immune system is important for overall health.

Useful part – Dried roots

Formulations – *Balarishta*, *Bala taila*, *Balaguduchyadi taila*, *Kshirabala taila*.



Guduchi (Tinospora cordifolia) – *Guduchi* is known for its immunomodulatory properties and is believed to support the immune system. It is also considered an adaptogen. The herb contains compounds with antioxidant properties. Antioxidants play a role in protecting cells from oxidative stress, managing inflammatory conditions in the body. It is traditionally used to support liver health and detoxification processes. *Guduchi* have antipyretic properties.

Useful part – Stem

Formulations – *Amritarishta*, *guduchyadi modaka*, *Amrita ghrita*, *giloyghan vati*, *giloy satva*.



DISCUSSION

The use of these medicinal herbs as immune system modulators is currently gaining a lot of attention. Herbs like *guduchi*, *aswagandha* etc mentioned above all have immunity booster property, these plants help in *dosha*, *dhatu*, *samaya*, *vyadhi kshamatava*, rejuvenate body tissues by their pharmacological property and have different beneficial effect on our body.

CONCLUSION

According to WHO about three fourth of world's population uses traditional medicines to cure health related problems. We have described some medicinal plants along with their botanical name, common name, part used, formulations and their biological activities.

We are introducing this review in an effort to spread awareness of Indian traditional medicinal plants which have large of active chemicals and these also have a number of pharmacological qualities, such as the ability to modulate immune system and provide sustainable human health. In this review article, we summarize some plants which can increase the immunity and maintain overall health.

REFERENCES

1. Sharma P, Kumar P, Sharma R, Gupta G, Chaudhary A, Immunomodulators: Role of medicinal plants in immune system. National Journal of Physiology, Pharmacy and Pharmacology, 2017; 552-556.
2. Agnivesha, 2006. Charaka Samhita with Chakrapani Tika, Ayurved Dipika Commentary, reprint edition, Chowkhamba orientalia, Varanasi.
3. Agnivesha, 2006. Charaka Samhita with Chakrapani Tika, Ayurved Dipika Commentary, reprint edition, Chowkhamba orientalia, Varanasi.
4. Archana, Suresh Jatawa, Rajkumar Paul and Archana Tiwari, 2011. Indian Medicinal Plants: A Rich Source of Natural Immuno-Modulator. International Journal of Pharmacology, 7: 198-205.
5. Byadgi P. S., Pandey A. K., 2016. The Text Book of Kayachikitsa, Reprint edition, Chaukhamba Publications, Varanasi.
6. Byadgi P. S., Pandey A. K., 2016. The Text Book of Kayachikitsa, Reprint edition, Chaukhamba Publications, Varanasi.
7. Dr. M. M. Padhi, et al. medicinal plant in health care, an evidence based approach, 2008.