



RESEARCH COMMUNICATION

An account on promising alternative system of medicine to boost immunity

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Abstract

One has to build up the immune system in order to fight against the pathogens. Nowadays, due to the sedentary life style and stressful life severe health issues occur. By increasing the number of physical activities one can reduce the effect of it. The present study outlines how to improve the immune system by Alternate Traditional System of Medicine. Details on some of the plant-based immunity boosters are provided here to help prevent and fight against infection. The methods adopted to administrate the medicines are in the form of decoction, concoction or extraction. For a healthy immune system, a plant product or a combination of products such as spices, fruits, vegetables are used. A healthy life style along with a balanced diet could support and boost one's immune system.

Keywords

Home remedies, immunity, medicinal plants, traditional system

Introduction

Naturally our body has the capacity to fight against diseases. Immune system will respond when the body is exposed to foreign bodies (1). To enhance immunity a healthy diet, regular exercise, natural light, proper sleep and effective management of stress are essential. Traditionally, people have been using natural home remedies to improve immunity. This traditional knowledge is being used from generation to generation through word of mouth and needs to be documented. The use of herbal medicines is not restricted to developing countries, the importance of which is wide spread in the developed countries and the status and the future of traditional medicine has been discussed (2, 3).

The most important plants that help to prevent and fight against infections are *Curcuma longa* L., *Zingiber officinale* Roscoe, *Piper nigrum* L., *Allium sativum* L., *Cuminum cyminum* L., *Coriandrum sativum* L., *Aegle marmelos* (L.) Corrêa, *Azadirachta indica* A. Juss., *Phyllanthus emblica* L., *Andrographis paniculata* (Burm.f.) Wall. ex Nees, *Justicia adhatoda* L., *Withania somnifera* (L.) Dunal, *Ocimum tenuiflorum* L., *Glycyrrhiza glabra* L. and *Citrus* spp. (4-9). Plants that are used as herbal medicine to strengthen the immune system are depicted in Table- 1 (10).

A product or a combination of plant products with appropriate dosage can be used in effectively for treating the ailments. Spices such as *Curcuma longa* L. (Turmeric), *Brassica juncea* (L.) Czernajew (Mustard), *Ferula asafoetida* Spreng. (Asafoetida), *Elettaria cardamomum* (L.) Maton (Elaichi),

Coriandrum sativum L. (Coriander), *Trigonella foenum-graecum* L. (Fenugreek), *Syzygium aromaticum* (L.) Merr. & L.M. Perry (Clove), *Piper nigrum* L. (Pepper), *Cinnamomum zeylanicum* (Cinnamon), *Allium sativum* L. (Garlic), *Zingiber officinale* (Ginger) and leaves of *Murraya koenigii* (L.) Spreng. (Curry leaf) helps in digestion and are also good immunity boosting foods. To eliminate waste or toxic chemicals from the body seeds of *Trigonella foenum-graecum* L., *Trachyspermum ammi* Sprague (Ajwain) and *Cuminum cyminum* L. (Cumin) are boiled in water and can be used. For which, the ingredients namely *Trigonella foenum-graecum* (200 g), *Trachyspermum ammi* (100 g) and black *Cuminum cyminum* (50 g) need to be powdered and one teaspoon of that mixed powder has to be administered weekly twice morning in empty stomach (7, 11). Juice of the fruit of *Solanum lycopersicum* L. (Tomato) along with powders of *Piper nigrum* L. and *Cuminum cyminum* L. are also mixed and consumed.

Preparation of Kashayam

Some of the kashayam (water decoction) prepared for immunity drink are as follows.

1. In 200 ml of water add ½ teaspoon lemon juice, ¼ teaspoon ginger extract, 3 or 4 pepper, 10 tulsi leaves, turmeric ¼ teaspoon and boil and make it up to 100 ml. After cooling, one tablespoon honey or palm jaggery may be added and administered after one hour of food, both in the morning and afternoon.
2. The following kashayam is taken once or twice in 15 days.

Concoction of the following ingredients: clove - 4, cinnamon bark - 1 piece, cinnamon leaf - 1, cardamom - 3, tender neem leaf - 1, ginger - 1 piece, pepper - 10, tulsi - 10 leaves, turmeric ¼ spoon, are taken and boiled in 200 ml water for 15 min., add jaggery after boiling and administered at night after one hr of food.

Table 1. Plants used as herbal medicine to boost immunity

S.No.	Binomial & Family	Parts used	Uses
1	<i>Allium sativum</i> L. (Alliaceae)	bulb	Antimicrobial, antioxidant, anticancer, antiviral, anti-inflammatory
2	<i>Aegle marmelos</i> (L.) Corrêa (Rutaceae)	leaves	Antioxidant, antidiabetic, anticancer, antiviral
3	<i>Andrographis paniculata</i> (Burm.f.) Wall. ex Nees (Acanthaceae)	whole plant	Antimicrobial, antiviral, antihypertensive
4	<i>Azadirachta indica</i> A. Juss. (Meliaceae)	leaves, fruit	Antimicrobial, antioxidant, antiallergic, expectorant, anthelmintic
5	<i>Brassica oleracea</i> L. (Brassicaceae)	leaves	Antioxidant, anticancer, anti-inflammatory
6	<i>Citrus limon</i> (L.) Burm.f. (Rutaceae)	fruit	Antioxidant, antimicrobial, anticancer, antistress, antispasmodic
7	<i>Curcuma longa</i> L. (Zingiberaceae)	rhizome	Antibiotic, antimicrobial, anti-inflammatory
8	<i>Cucurbita moschata</i> Duchesne (Cucurbitaceae)	fruit	Immuno-modulator
9	<i>Cuminum cyminum</i> L. (Apiaceae)	seed	Antibacterial, antifungal, antivirulence, anti-inflammatory
10	<i>Coriandrum sativum</i> L. (Apiaceae)	seed	Anti-inflammatory, antimicrobial, antioxidant, anticancer
11	<i>Glycyrrhiza glabra</i> L. (Fabaceae)	root	Antibacterial, antifungal, anti-inflammatory, antioxidant
12	<i>Justicia adhatoda</i> L. (Acanthaceae)	leaves	Antifungal, antibacterial, antioxidant, anticancer
13	<i>Momordica charantia</i> L. (Cucurbitaceae)	leaves, fruit	Antidiabetic, anti-inflammatory, anticancer
14	<i>Ocimum tenuiflorum</i> L. (Lamiaceae)	leaves	Antioxidant, anticancer, antimicrobial, anti-inflammatory
15	<i>Phyllanthus emblica</i> L. (Euphorbiaceae)	fruit	Anticancer, antimalarial, anticoccidial, antioxidant, anti-inflammatory
16	<i>Piper nigrum</i> L. (Piperaceae)	berry	Antioxidant, antiallergic, anti-inflammatory, anti-diarrhea, antitumor
17	<i>Sesbania grandiflora</i> (L.) Poir. (Fabaceae)	leaves, bark, flower	Antibacterial, antioxidant, antipyretic, antidiabetic, anticancer, expectorant
18	<i>Spinacea oleracea</i> L. (Amaranthaceae)	leaves	Antioxidant, antidiabetic, antioxidant, anti-inflammatory
19	<i>Trichosanthes cucumerina</i> L.	fruit, root	Anti-oxidant, antihistamine, anticancer
20	<i>Trigonella foenum-graecum</i> L. (Fabaceae)	seed	Anti-inflammatory, antiallergic, anticancer, antidiabetic
21	<i>Withania somnifera</i> (L.) Dunal (Solanaceae)	leaves, fruit, root	Antioxidant, Antitumor, anti-inflammatory, antistress, immuno-modulator
22	<i>Zingiber officinale</i> Roscoe (Zingiberaceae)	rhizome	Antioxidant, antibacterial

3. Boil 200 ml of water along with ginger, pepper, one betel leaf and 15 tulsi leaves and after cooling added palm jaggery. Consume weekly thrice one hour after food in the morning and evening.
4. To relieve body pain the following ingredients are used. A piece of dry ginger and 2 clove buds are boiled and consumed. *Cissus quadrangularis* L. and *Cardiospermum halicacabum* L. are consumed after cooking to relieve body pain after fever or cold.
5. One-inch root of *Glycyrrhiza glabra* is taken and boiled in 500 ml water and reduce it to 250 ml, the water colour would change into yellow. This decoction is consumed in the morning for cough and throat infection.
6. *Withania somnifera* (L.) Dunal: One teaspoon of *Withania* powder is boiled in 200 ml milk and is consumed in empty stomach in the morning to improve immunity.
7. Boil 200 ml of water with a piece of ginger, garlic, cinnamon leaf, ½ teaspoon lemon juice and 1 tablespoon honey, if required and half a glass of it, is administered per person, daily as an immunity drink.
8. Concoction of the stem of *Tinospora cordifolia* (Willd.) Miers ex Hook.f. & Thomson is administered to boost immunity.

Decoction of mixture of various plant products such as lemon, cumin, clove, coriander seeds, dry ginger, clove and neem leaves is prepared by making it half the original water taken for boiling. Raw papaya soup along with cumin, onion, garlic, pepper and salt is taken for treating nervous disorders.

Apart from the Kashyam, Vitamin A, B6, C, D, E, Zinc and Iron play a key role in boosting the immunity in humans. Vitamin D plays a vital role in immune health, which we naturally receive it from sunlight. Vitamin C can neutralise the free radicals and is obtained mostly from citrus fruits. Vitamin A from *Daucus carota* L. and green leafy vegetables. Mushroom has the unique ability to stimulate our natural immune system. Legumes, dry fruits, nuts such as *Prunus dulcis* D.A. Webb (Almond), *Juglans regia* L. (Walnut), *Arachis hypogaea* L. (Groundnut) and *Phoenix dactylifera* L. (Dates) also strengthen the immune system. Brightly coloured fruits and vegetables are also rich in nutrients and antioxidants. Fruits such as *Punica granatum* L. (Pomogranate) (12, 13), *Solanum lycopersicum* L. (Tomato), *Persea americana* Mill. (Avocado), *Carica papaya* L. (Papaya) and *Citrus limon* (L.) Burm.f. (Lemon) are consumed as an energy drink. To get additional immune benefits spices are used. Vegetables such as *Brassica oleracea* L. (Broccoli), *Spinacia oleracea* L. (Spinach), *Brassica oleracea* L. (Cabbage), *Cucurbita moschata* Duchesne (Pumpkin), *Trichosanthes cucumerina* L. (Snake guard), *Momordica charantia* L. (Bitter guard), *Sesbania grandiflora* (L.) Poir. (Agathi) leaves and *Trigonella foenum-graecum* L. (Fenugreek) leaves are consumed (Table- 1).

Conclusion

There is no supplement other than herbal system of medi-

cine to boost immune system in humans. Phytochemicals present in various plants possess immune stimulating properties and can strengthen the immune system in humans (14). Herbal medicine is considered to be the primary medicine to treat infections and the usage of it has increased drastically nowadays. Herbal medicine uses plants and plant products to treat diseases and enhances the immune system whereas conventional medicine treats symptoms and diseases using pharmaceutical drugs. It has proven to be very effective in cases where modern medicine has created complications. They tend to have less side effects and emphasizes the cure rather than prevention when compared to conventional medicine. A healthy life style that includes physical activity, proper sleep and effective management of stress, along with balanced nutrition can boost immune system and help to prevent and fight against the pathogens.

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Authors contributions

MRK contributed in discussing the medicinal aspects of the plants and also finalised the manuscript.

Compliance with ethical standards

Conflict of interest: Authors do not have any conflict of interests to declare.

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