Novel Chinese Botanicals Enhance Immune Health

Chris D. Meletis, ND (with permission from cpmedical.net, access pin: 587556)

In the winter, the common cold and influenza take a tremendous toll on our productivity, energy levels and quality of life. The common cold is the leading cause of doctor visits in the United States and causes 189 million lost school days annually. Throughout the year, the U.S. population contracts approximately 1 billion colds, the majority of which are caused primarily by rhinoviruses and coronaviruses.1-2

Colds and influenza are two diseases that everyone will experience in their lifetime and these two viral-borne illnesses are the most common infections in human beings.3 Although we have the tendency to dismiss a viral infection as “just a flu,” influenza infections are still a leading cause of morbidity and mortality, accounting for 20-25 million doctor visits and 36,000 deaths per year in the United States.4

Effects of the cold and flu virus often don’t end with the cessation of the initial illness. Ongoing, chronic infections can result from the initial viral infection such as otitis media5 and sinusitis. Therefore, taking measures to build our immune systems during cold and flu season can have long-lasting effects that extend well beyond the winter months. At the same time, it’s important to deal with a cold or flu as it arises to minimize its effects. What follows is a discussion of various aspects that make us more susceptible to catching wintertime viruses as well as information about a unique combination of botanicals that can be taken to enhance health at the first signs of a cold or flu.

Factors Increasing Susceptibility to Colds and Influenza

A number of factors influence how easily we catch a cold or flu. Lack of adequate sleep and exercise and less than ideal dietary choices (as often occurs around the holidays) make us more prone to viral attacks. Additionally, research has shown that stress increases susceptibility to viruses. In one study, 193 healthy volunteers ages 21 to 55 years were assessed for a positive emotional style characterized by being happy, lively, and calm; a negative emotional style characterized by being anxious, hostile, and depressed as well as other cognitive and social dispositions and self-reported health. Subsequently, they were exposed by nasal drops to a rhinovirus (cold virus) or influenza virus and monitored in quarantine for objective signs of illness and self-reported symptoms. For both viruses, a positive emotional style was associated with lower risk of developing an upper respiratory illness as defined by objective criteria and with reporting fewer symptoms than expected.6

Low vitamin D3 levels in winter, caused by a lack of sunlight, also have been associated with the development of colds and flues. In 1981, R. Edgar Hope-Simpson proposed that a “seasonal stimulus” intimately associated with solar radiation explained why epidemic influenza primarily occurs in late fall and winter. When the skin is exposed to solar radiation, it triggers vitamin D3 production in the skin. In the winter, when people are not exposed to significant amounts of sunlight, vitamin D3 deficiency is common.

The activated form of vitamin D3, a steroid hormone, has been shown to have profound effects on human immunity. Vitamin D3 acts as an immune system modulator, preventing excessive expression of inflammatory cytokines and enhancing the activity of macrophages as they destroy viral invaders. Ultraviolet radiation (either from artificial sources or from sunlight) also reduces the incidence of viral
respiratory infections and vitamin D3 reduces the incidence of respiratory infections in children. According to one group of reviewers, “We conclude that vitamin D, or lack of it, may be Hope-Simpson’s ‘seasonal stimulus.’”

**Strategies to Survive the Cold & Flu Season**

Ideally, we should reduce our risk of catching wintertime viral infections in the first place by receiving enough sleep and reducing our stress levels. However, especially around the holiday season, adequate rest and healthy eating habits often are put on hold. Therefore, adaptogenic herbs such as Eleutherococcus senticosus, Manchurian Thorn Tree, Echinopanax Elatum, and Schisandra can be especially helpful in reducing stress’s harmful effects on the body, thereby nourishing our immune systems. Vitamin D3 supplementation also will help replenish supplies of this immune-enhancing nutrient.

Consuming 64 ounces of filtered water daily, devoid of chlorine and fluoride, is equally important to help keep the nasal passages and body hydrated.

**Unique Botanical Support**

Despite our best efforts to keep colds and flues at bay, our immune systems often lose the fight against viral invaders. Consequently, relying on botanical support at the first sign of cold and flu symptoms can be an especially helpful way to assist our immune systems through a viral challenge. This technique can be used, when needed, on a short-term basis together with other long-term immunity-modulating agents.

Specific plant-derived compounds have been used in traditional Chinese medicine for two thousand years to enhance the health of people suffering from colds and influenza. Modern day use of these Chinese herbs by many cold and flu patients has its roots in these traditional immune-supporting formulas that have been in use for centuries. Concentrated extracts of Forsythia suspense fruit, Lonicera japonicus flower, Platycodon grandiflorum root, Mentha arvensis, Lophatherum gracile stem and leaf, Glycyrrhizae uralensis root, Schizonepeta tennifolia herb, Glycine max seed, Arctium lappa fruit and Phragmites communis rhizome all have properties

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**TABLE 1. Effects of Short-Term Use of Chinese Botanicals**

<table>
<thead>
<tr>
<th>Botanical</th>
<th>Effect</th>
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<tbody>
<tr>
<td>Forsythia suspense</td>
<td>Stopped the accumulation of inflammatory cells in virus-infected sites. Also shown to inhibit the respiratory syncytial virus, the most commonly identified cause of lower respiratory tract infections in young children.</td>
</tr>
<tr>
<td>Lonicera japonicus</td>
<td>In an in vitro study using cells derived from mice, ochnaflavone, an important constituent of Lonicera, inhibited the COX-2 and 5 lipoxygenase enzymes.</td>
</tr>
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<td>Glycyrrhizae uralensis</td>
<td>Increased the production of splenocytes, white blood cells found within the spleen that are important in immunity, and increased the production of antibodies.</td>
</tr>
<tr>
<td>Platycodon grandiflorum</td>
<td>Activated macrophages and B-Cells. Known to clear the lungs and reduce phlegm production.</td>
</tr>
<tr>
<td>Phragmites communis</td>
<td>In aging mice, animals given Phragmites communis experienced a marked resistance to atrophy in the thymus and spleen.</td>
</tr>
<tr>
<td>Arctium lappa</td>
<td>Arctigenin, a component of Arctium lappa, markedly improved lung health in mice with pneumonia caused by influenza virus infection. Arctigenin also prolonged the survival time of mice infected with flu virus.</td>
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<tr>
<td>Mentha arvensis</td>
<td>Inhibited histamine release from mast cells.</td>
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that can help enhance the health of individuals suffering from colds and flues.

These botanicals address the various mechanisms by which a cold or flu virus impairs the body. One of the primary mechanisms is that of inflammation. Forsythia suspense and Glycyrrhizae uralensis help stop the accumulation of inflammatory cells in virus-infected sites, a process that has been reported to play a crucial role in the development of complications that occur after a cold or influenza.8

Another botanical that has reduced certain markers of inflammation is Lonicera japonicus. In an in vitro study using cells derived from mice, ochnaflavone, an important constituent of Lonicera, inhibited the COX-2 and 5-lipoxygenase enzymes.9 Five-lipoxygenase is an enzyme that increases with aging. It converts arachidonic acid into the powerful inflammatory leukotrienes, which are known to promote cancer, damage the brain, promote asthma, arthritis, psoriasis and ulcerative colitis.

Lonicera’s ability to inhibit COX-2 and 5-lipoxygenase enzymes is important because researchers have established that infection with the cold virus increases the activity of these two inflammatory enzymes. The increased activity of these enzymes in subjects with a cold may be responsible for bronchial inflammation.10

In addition to exhibiting anti-inflammatory properties, many of the plant compounds mentioned above also stimulate immunity.

In immunized mice, Glycyrrhizae uralensis increased the production of splenocytes, white blood cells found within the spleen that are important in immunity, and increased the production of antibodies.11

Platycodon grandiflorum is another immune stimulating herb. Like many immunity stimulating botanicals, Platycodon grandiflorum activates macrophages. Derived from the Greek words for “big eaters,” macrophages engulf and digest viruses and other pathogens, a process known as phagocytosis. However, unlike many other immune stimulating botanicals, platycodon activates B cells rather than T cells.12

Phragmites communis also exerts interesting immune enhancing effects. In aging mice, animals given Phragmites communis experienced a marked resistance to atrophy in the thymus and spleen, both of which are critical to the body’s immune system.13

Other botanicals appear to work in part by strengthening the respiratory tract. A new compound isolated from Forsythia in 2002 was shown to inhibit the respiratory syncytial virus (RSV). In very young children, RSV is the most commonly identified cause of lower respiratory tract infections. In the elderly, the virus can mimic a long and severe common cold.14

Platycodon grandiflorum and Arctigenin, a component of Arctium lappa, both have equally important effects on the respiratory tract. Platycodon grandiflorum is known to clear the lungs and reduce phlegm production.15 Arctigenin markedly improved lung health in mice with pneumonia caused by influenza virus infection. Arctigenin also prolonged the survival time of mice infected with flu virus.16

In individuals with asthma who contract a cold, the virus responsible for the cold (rhinovirus) primes mast cells to produce histamine, the substance perhaps best known for its role in seasonal
allergies. Although histamine is normally present in the body and can serve a beneficial purpose, when it is released from injured mast cells it causes an inflammatory response.

Mentha arvensis, an extract derived from mint, has inhibited histamine release from mast cells. An in vitro experiment showed that it can prevent the histamine release that occurs during anaphylactic reactions (severe allergic reactions to an allergen) in cells from rats.18

The botanicals mentioned in this article exhibit a number of other interesting properties that are worth noting. Forsythia has inhibited E. coli and other bacteria in cell culture studies.19 Platycodon grandiflorum has protected the liver of mice against acetaminophen-induced damage.20 Mentha arvensis has shown activity against candida albicans21 and reduced the severity of symptoms of radiation sickness and mortality in animals treated with mentha arvensis prior to radiation exposure.22

Complementary Vitamins

Vitamins A and C and zinc, when used together with the above botanicals, can help to support the health of the body during cold and flu season. Zinc plays a critical role in the immune system and zinc-deficient people are more susceptible to a variety of viruses and bacteria. Zinc is involved in various aspects of the immune system, from keeping viruses from penetrating the barrier of the skin to assisting in the normal development of natural killer cells.23

Vitamin A deficiency also is known to impair innate immunity by impeding normal regeneration of mucosal barriers damaged by infection and by diminishing the function of macrophages, natural killer cells and neutrophils, white blood cells responsible for much of the body’s defenses against infection.24

Vitamin C is often used together with zinc and vitamin A to boost immunity. Vitamin C concentrations in the plasma and in white blood cells known as leukocytes rapidly decline during infections and stress. Supplementation with vitamin C has been found to improve components of the human immune system such as antimicrobial and natural killer cell activities.

A large number of randomized controlled intervention trials with intakes of up to 1 gram of vitamin C and up to 30 mg of zinc document that adequate intakes of vitamin C and zinc ameliorate symptoms and shorten the duration of respiratory tract infections including the common cold. Furthermore, vitamin C and zinc reduce the incidence and improve the outcome of pneumonia and diarrhea infections, especially in children in developing countries.25

Conclusion

A synergistic combination of a number of botanicals used for thousands of years in China along with vitamins A, C, D and zinc, can help enhance the immune response when taken at the first signs of a cold or flu. Using these herbs is one way to support our health when we have neglected important lifestyle factors such as receiving adequate sleep, consuming healthy food and keeping stress under control.

References: