ETHNONOMEDICINE

FLU FOR YOU? THE COMMON COLD, INFLUENZA, AND TRADITIONAL MEDICINE

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This winter, 2005, was pleasantly warm, with few prolonged drops in temperature below freezing. I (R.L.) must admit, having lived so many years in the tropics, that I did enjoy the relative warmth. However, by the end of February the weather changed, and we had one of the most significant snowstorms in New York of the past three years. The winter season declared itself with its usual freezing temperatures once again. I was flooded with calls from patients who had now become ill with the flu. The patient whom I was seeing today was working into my schedule because she was feeling extremely weak and mildly febrile (temperature of 101°F). She had been ill on and off for the last two weeks. She had called the office a week earlier, concerned because she was beginning to cough and her nose was very runny, and, of course, she was sneezing. She wanted to know if there was some way to prevent this from progressing. I had advised her to drink lots of fluids, rest, and consume warm foods and soups while keeping warm and remaining out of the cold weather. Antibacterial medications were discussed, but she preferred alternative botanical medicines. We decided that a combination of elderberry extract and a mixture of medicinal mushrooms that included Reishi mushroom (Ganoderma lucidum) and Shiitake (Lentinula edodes) would be the alternative supplements we’d start with. I broached the subject of other therapies including some East Asian medicine and homeopathy, but she really did not want to come into the office for additional visits, so she omitted these modalities. I thought she was experiencing a typical viral illness, probably not influenza, since her fevers were mild, and her experience of the illness was of a gradually progressive nature rather than a pattern characterized by sudden onset, rapid deterioration into the respiratory system with higher fevers—a more typical pattern characteristic of influenza A. Furthermore, she had not been traveling recently, and others at her office were out of the office because they had caught the “flu.” However, when I heard how weak she had become over the seven days, I decided to reevaluate her condition and reexamined her.

She looked dehydrated and frail. I listened to her lungs carefully but did not hear or observe signs that immediately indicated that she might be developing pneumonia. Nonetheless, I sent her off for a chest x-ray, and, thankfully, it was normal. Her cough, although clearly present, was not producing much phlem. Her fevers remained low grade at 101°F. This time, I attempted to culture her sputum and drew blood tests looking for more subtle signs of a bacterial cause; however, these tests were negative. We gave her some fluids intravenously, which made her feel much better. I consulted with our master acupuncturist in the clinic, Arya Nielsen. I explained the history of my patient’s course of illness to Arya. She decided to see her that day, and thought that the patient would benefit from a technique known as gua sha.

“Gua sha is a healing technique used in Asia by practitioners of traditional Chinese medicine little known in the West. It involves palpation and cutaneous stimulation where the skin is pressured in strokes by a round-edged instrument; that results in the appearance of small red petechiae called ‘sha’ that will fade in two to three days.”

Raising sha removes what is called “blood stagnation” in East Asian medicine; this relieves the symptoms of myalgia and fever of a viral illness. In this instance, Arya thought that my patient’s symptoms and sense of chilliness would be relieved. Arya made more recommendations based on her examination of our patient. She reemphasized the usefulness of rest and consumption of warm but not hot foods. Our patient was sent home to rest, and she remained on her initial botanical supplements and received more gua sha the following week from Arya. By the third week, our patient was well into an uneventful recovery.

Numerous botanicals have been used in indigenous cultures to hasten speedy recovery from the common cold. The common cold or flu is caused by many different viruses, but rhinoviruses are usually responsible for most of these seasonal viral illnesses. The “flu” typically comes in the spring and fall. Spreading of the virus occurs when the nasal secretions filled with viral particles of an infected person spreads onto the skin usually via the hands where those who are uninfected become introduced by physical contact to the viral particles. Another method of infection is facilitated by inhaling aerosolized viral droplets. Thus, washing hands frequently when ill and during times when many peo...
ple are ill with the flu can be a very effective form of prevention.

From the perspective of a physician, it is useful to separate out cases of the common cold from those experiencing illness from the influenza A or B. Influenza viruses are much more virulent, causing more dramatic discomfort, especially in the respiratory tract, higher fevers (usually 102°F-103°F), and more prolonged immobility.2 Pneumonia and bronchitis are common complications from influenza outbreaks. Epidemic outbreaks occur every year, resulting in up to a million people suffering from influenza A in the Northern Hemisphere alone (B does not cause epidemics but can cause severe infections in the elderly). The viruses mutate sufficiently each year, changing enough so that immunity is not present, and this results in annual outbreaks.3 The new outbreaks usually begin in Asia and travel progressively east to the United States then Europe and on to Africa. In an effort to limit influenza epidemics, flu vaccines are developed from the most common mutations likely to create epidemic infections.

Every so often, a new strain emerges in which no immunity is present in the human population, and this causes worldwide epidemics known as pandemics. There have been three major influenza pandemics in the 20th Century. The worst pandemic was the Spanish influenza pandemic (H1N2) of 1918 in which 30 million people died.4 The second pandemic strain (H2N2) appeared 40 years later, killing over one million people. The most recent pandemic strain originating in Hong Kong in 1968 killed 800,000 people. Today, an avian influenza virus H5N1, first documented in Hong Kong in 1997, is being monitored carefully. It has been implicated in several highly pathogenic human outbreaks in Viet Nam, Korea, and Turkey.5 In an effort to minimize global public health risks, eradication of any poultry populations contaminated by H5N1 is being aggressively pursued. The infected poultry populations serve as a viral reservoir for H5N1. Increased human contact with the infected poultry raises the potential for human-to-human transmission.4 The World Health Organization (WHO) has suggested that "while all these activities can reduce the likelihood that a pandemic strain will emerge, the question of whether another influenza pandemic can be averted cannot be answered with certainty."6 Nevertheless, production of an effective vaccine that can be dispensed orally or by injection is under development.

Tamiflu (Roche Pharmaceuticals, Nutley, NJ), one of the most recent antiviral medications developed for reducing the severity and duration of the common cold and influenza, has proven useful in thwarting recent outbreaks of H5N1. It is derived from the Chinese star anise (Illicium verum). Its name reflects the star-shaped fruit. Chinese star anise is a slow growing tree native to the mountains of southern China and northeastern Viet Nam. It contains a substantial amount of shikimic acid. In plants, the shikimic acid pathway serves as a major pathway for nutrition and essential metabolic processes in plants.6 This acid serves as the base chemical for Tamiflu. The initial mixture of Chinese star anise must undergo 10 pharmaceutical modifications before it becomes the antiviral medication we know. The limited distribution of the Chinese star anise tree and its slow growth in conjunction with the enormous demand for use against H5N1 has created a need for other methods that accelerate production. Roche Pharmaceuticals, the primary manufacturer of Tamiflu, is perfecting a special fermentation process using a special Escherichia coli bacteria to produce greater amounts of shikimic acid by being "fed" an overload of glucose. Without this added modification, it takes 30 kg of star anise to yield one kg of shikimic acid.4 The modified shikimic acid interacts with surface structures on the influenza virus preventing the virus from replicating. The mechanism of inhibition makes it effective against both the influenza A and B viruses.

Chinese star anise is easy to purchase because it is frequently used as a spice in Asian cuisines. The Food and Drug Administration (FDA) recognizes Chinese star anise (Illicium verum) as generally recognized as safe. However, the Japanese star anise (Illicium anisatum), which is difficult to distinguish from the Chinese star anise is not generally recognized as safe and is toxic. The Japanese star anise is slightly smaller, lacks a sweet smell, and tastes slightly bitter. People have consumed Chinese star anise in the form of infusions or "teas." Historically, this use as an infusion has been for the treatment of colic in infants and children. However, consumption in the form of infusions has increased as a means to combat influenza. In 2003, the FDA reported on a collection of illnesses ranging from neurological problems such as seizures to vomiting, jitteriness, and rapid eye movements as a result of star anise infusions.4 At the time, it was difficult to determine whether the reports of these adverse effects resulted from the mistaken consumption of Japanese star anise (Illicium anisatum). However, this was strongly suspected as the cause for medical difficulties. Since then, the FDA has implemented screening measures to prevent this situation from reoccurring.

Prior to its discovery as an effective antiviral medication, Chinese star anise was used as a spice for curries. It is one of the
five ingredients in “five spice” powder. It is also used in liquors such as anisette for its aroma and flavoring. In traditional medicine in addition to its use to relieve colic, Chinese star anise has been used to treat rheumatism. Its pleasant taste made it popular as a flavoring for cough medicines in folk remedies. It was also chewed whole to sweeten the breath.

Andrographis (Andrographis paniculata) has been used traditionally in Ayurvedic and Chinese medicine for a wide variety of indications that include treating dysentery, open sores, bronchitis, and malaria. In two parallel group clinical studies, using Andrographis paniculata as a fixed proprietary preparation known as Kan Jang versus amantidine in patients with influenza showed increased recovery and reduced postinfluenza complications. Several studies evaluating andrographis and the common cold show improvement from two to four days of treatment. Its immune stimulating properties seem to be derived from antibody activity and phagocytosis by macrophages.

Astragalus (Astragalus membranaceus) has been used in Chinese medicine to treat infections including viral illnesses such as the common cold, but has no clinical studies evaluating its efficacy. There is some evidence that lymphocyte production is stimulated by astragalus in an animal study.

Recently, a randomized, double-blind, placebo-controlled study evaluating the efficacy of American ginseng (Panax quinquefolium) on upper respiratory tract infections in 279 subjects over the winter season for four months revealed a significant reduction in the frequency and severity of viral illnesses. Similarly, Panax ginseng in a randomized placebo-controlled trial of 227 volunteers receiving 100 mg daily for twelve weeks and the flu vaccination showed levels of natural killer cell activity twice that over placebo in the ginseng arm.

Elderberry (Sambucus nigra) in a standardized extract (Sambucol) was given to individuals living on a kibbutz during an outbreak of influenza B in 1993. The elderberry group had a shorter recovery period with less symptoms. Elderberry extract has similar activity to antiviral medication by increasing interleukins and tumor necrosis factor.

Echinacea (Echinacea angustifolia, Echinacea pallida, and Echinacea purpurea) has been studied in a variety of mixtures against the common cold with mixed results. The studies used different species of echinacea, plant parts, extracts, and doses, which may account for the inconsistent findings. Studies suggest that Echinacea is most effective when started early in the infectious cycle but is not effective in prevention. It has both immune enhancement and anti-inflammatory activity.

A variety of mushrooms has been used medicinally for thousands of years as immune stimulants and for antimicrobial and antiviral activity. Mushrooms contain protein-bound polysaccharides and phenols that have been documented to stimulate cytotoxic T cells, interleukin-1, and natural killer cells. Shiitake (Lentinula edodes) (Berk), reishi (Ganoderma lucidum), and maitake mushrooms (Grifola frondosa) are among the most well-known and easily available for purchase. According to Paul Stamets, a recognized mycologist expert, “even the externalized secondary metabolites—secretions by the mycelium—combat bacteria and viruses.” The Greek physician Dioscorides used the larch pollen (Fomitiopsis officinalis) as part of his treatment for consumption—later identified as tuberculosis. In a recent in vitro survey of mushroom extracts, 45 of the 204 mushroom species inhibited a wide number of microorganisms. A low cytotoxic, water-soluble polysaccharopeptide (PSP) was isolated from Turkey tail (Trametes versicolor) and has been studied closely for its potential antiviral activity and ability to inhibit HIV replication. Trametes versicolor also has activity against Candida albicans, the organism responsible for vaginal yeast infections. Some may wonder why fungi are effective against so many organisms. Fungi share “common microbial antagonists such as E. coli, Staphylococcus aureus, and Pseudomonas aeruginosa.” These organisms are responsible for infections that warrant hospitalization. Resistance to the commonly prescribed drugs used to treat these organisms is becoming common. It may be that employing the potential of traditionally used fungi as antibacterial, antifungal, and antiviral agents in clinical medicine could help in treating the growing number infections that are not effectively controlled by our contemporary pharmaceutical arsenal.

History will continue to repeat itself, and the world will face ongoing pandemics. The field of ecology has shown that diverse ecosystems are more likely to survive external threats than will monocultures. There are thousands of plants and fungi that have been used to treat disease conditions in the past as components of rich and diverse traditional medical systems. As can be seen with the example of the Chinese star anise, and as we seek to navigate through these future pandemics and threats, we must look to the past at the modalities and systems once employed by our ancestors.

REFERENCES


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