

A Strategic Call to Utilize *Echinacea*-Garlic in Flu-Cold Seasons

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The virulent influenza outbreak of 1918, which was also called the Spanish Flu Pandemic, killed at least 30 million people worldwide.^{1,2} Some of the most respected influenza experts in the world are predicting that we will face another pandemic in the future. Many think that it will be sooner than later. We are overdue. The recent Avian Flu eruption we saw in Hong Kong with strain H5N1 portends how it may enter the world stage. Some influenza specialists think that the next virulent strain may come from European pigs infected with an avian strain. The two most recent epidemics killed 90,000 to 100,000 people 40 years ago in 1957 and 34,000 people 30 years ago in 1968. Each year the flu season takes a significant toll on the pediatric, geriatric, and immuno-compromised population. Dr Joshua Lederberg, a Nobel Prize winner in 1959 for his elucidation of bacteria genetics and a specialist in emerging pathogens at Rockefeller University, believes that a new strain of the influenza virus may pose a greater morbidity and mortality threat than any other previous strain.¹ Because of the known pathophysiology and history of influenza infections, perceptibly, it would wreak considerably more havoc than some of the feared hemorrhagic viremias caused by the Ebola and Rift Valley viruses of Africa. When the present world setting is compared to the scenario of 1918, we have a much larger world population and our mobility capacity is much greater. This facilitates transmis-

sion and, potentially, may exact a toll beyond our wildest expectations. Coughing and sneezing by victims expel millions of viral particles into the air where they are suspended for hours.

The formation of new recombinant genetic strains occurs when a virus jumps from species to species such as from chickens to hogs to humans. This will be the antecedent cycle that will produce a strain for which we are unprepared. The Group for Pandemic Preparedness and Emergency Response (GRIPPE) is an international flu watch organization composed of scientists and planners from the National Institutes of Health, Centers for Disease Control and Prevention, the Food and Drug Administration, and academic medical centers charged with planning national strategies for coping with the eventuality of an influenza epidemic. This group conducts vigilant monitoring and surveillance for emerging strains. Efforts are coordinated with those of several nations. These data are used to forecast strains to cause seasonal infections, produce appropriate vaccines, and determine protocols for administration. Because the recombinant genetic formation of new seasonal strains have not varied drastically this has worked relatively well thus far. The real danger lies in the sudden emergence of a markedly varied genetic strain caused by sudden antigenic shifts in the viral reservoirs of avian-swine carriers. If such a dreaded happening should come to pass, it would take months to develop a vaccine and as long to administer it. In the meantime, while this is being done, millions could die. Most people in heavily populated areas would have difficulty avoiding and escaping the pervasive viral contagion-laden atmosphere created by the sneezing and

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coughing of a progressively larger number of victims. Inhalation in such a contagious atmosphere would seed viral particles in the respiratory system of people and would produce disease in 2 to 4 days.

What are some practical things that we can do at the onset of such a potentially deadly outbreak? Dietary activity and composition, which may offer prophylaxis and aid in curing this infection, should be a prime strategy. Increasingly, people are successfully turning to certain vitamins, foods, and herbs and alternate lifestyles for their medicinal value (Milton M, personal communication, 1999).³ The old adage, "your food should be your medicine and your medicine should be your food," may never be more applicable than in an influenza pandemic. Some efficacious dietary medicinal components and activities may include vitamin C, chicken soup, garlic and *Echinacea* herbs, and abstinence from alcohol. Curing a primary viral pneumonia caused by this pathogen with presently approved medication would be difficult. Opportunistic secondary microbial infections would respond to antibiotics and other antimicrobials. China is a prime locale to monitor new strains of this virus, because it is, by far, the most populous nation on earth and has farming practices that bring a tremendous stock of bird and animal carriers into close proximity to a large human population. We must give strong consideration to finding foods and herbal preparations with medicinal value that can be fed to the avian-swine carriers, hopefully, altering the evolution and production cycle of virulent recombinant genetic strains and their pathogenicity. Many of the medicinal herbs advocated for their medicinal value in humans, probably, would have veterinary application. Anecdotal and growing scientific data about the herbs, garlic and *Echinacea*, suggest that the administration of herbal preparations derived from them should be part of any international planning to prevent virulent seasonal and pandemic strains of the flu virus. It is not far-fetched to propose that fresh and aged preparations of those herbs should be stockpiled for administration to all victims, if investigations confirm and warrant use. Empirically, these herbal preparations should be utilized in case we are caught before ideal confirmatory studies can be completed. There are old and recent data suggesting further studies of the value that these herbs may hold for our presently feared and suspected inadequacy to cope with this threat.^{4,6-8}

PROPHYLACTIC AND CURATIVE EFFICACY

Anecdotally, the prophylactic and curative value of both herbs has been noted by avid consumers during the cold-flu season. This has especially been noted among health care workers who are exposed to the contagious environs created by patients who are infected.³ These two herbs, together and singularly, have been noted for their prophylactic and curative efficacy.

How did these health providers administer these two herbs for the prophylaxis and cure of the common cold and influenza? They relayed to me that they orally administered crude, raw, or manufactured preparations of these herbs at the beginning of the predicted cold-flu season. The oral administration of raw garlic involved masticating or mincing a clove with honey once daily for prophylaxis and twice daily for cure. This garlic preparation is chewed and retained in the oral cavity as long as possible for the liberated volatile compounds to penetrate and be absorbed by the tissues of the mouth, nasopharynx, and sinuses. Many inhaled these fumes into the pulmonary spaces and exhaled them with a closed mouth through the nostrils. Before ingestion, many related directly of inhaling sliced or minced garlic into the nostrils or from a container that could be opened and closed. After nasal administration and oral retention, they would swallow the raw or crude preparation where numerous beneficial compounds and components would be absorbed by the gastrointestinal tract. Manufactured or processed preparations would be administered as directed by the manufacturer. In its crude or raw form, *Echinacea* was administered orally with a cup of tea sweetened with honey or unsweetened once daily for prophylaxis and twice daily for cure. As with garlic, manufactured or processed preparations were administered as directed by the manufacturer. Many who had worked with cold-flu patients through several seasons gave impressive accounts that they had never had an acute upper respiratory tract infection. Many of these advocates further related that they didn't smoke or drink alcohol. If they did, they reduced their indulgence during the cold-flu seasons. Smoking and alcohol use are believed by many to decrease cell-mediated immunity in general, and especially, in the respiratory system.

IMMUNE MODULATORS

Echinacea and garlic are immune modulators.³⁻⁵ In vivo studies years ago in Japan revealed how laboratory mice could not be inoculated with the influenza virus, intranasally, when garlic was administered.⁷ Further data revealed that mice given a flu vaccine and administered garlic produced a much more significant titer of neutralizing antibodies than those administered the vaccine alone. Other studies, including anecdotal, in vitro, and in vivo have confirmed the broad antiviral spectrum of garlic encompassing all species of the herpes family, including Kaposi's sarcoma virus VIII.^{6,8,9} These data also suggest that garlic may have therapeutic applications for the post-vaccine flu-like syndrome noted in some vaccine recipients. Garlic may reduce the pathogenicity of the attenuated influenza virus in the immune response to the vaccine.^{3-5,7} Recent scientific reports in the media have touted how the oral and parenteral administration of *Echinacea* in Germany have reduced the frequency and severity of infections during the cold-flu season.

The antimicrobial and immune modulatory legacy of these *Echinacea* and garlic are reflected in their medicinal use over millennia to prevent and cure infectious diseases. That potency is being confirmed and verified in medical research labs and in clinical trials conducted all over the world. In vitro and in vivo studies have shown the tremendous antimicrobial, especially, antiviral activity of compounds in both herbs.^{3,4,6-12,37} Perhaps, more impressive than these herbs' outstanding antimicrobial activity data are the data confirming that the immune modulating activity components of garlic and *Echinacea* have profound effects on the cell-mediated and humoral armamentariums of the immune system.¹³⁻²⁴ These components have included organically bound selenium and germanium, amino acids, several other sulfur compounds, lectins, polysaccharides (poly- and heteroglycans), mitogens, vitamins A and C, saponins, etc. Many of these components, in isolated, combined, or crude extract form from which they originate, have induced natural killer cell, macrophage, T-cell, and B-cell proliferation and activation and have enhanced their functional activity. *Echinacea* and garlic components stimulate phagocytosis and nonspecific and specific cellular immunity.²⁵⁻³² Poly- and heteroglycans in garlic have provided protection in immunosuppressed mice against *Listeria monocytogenes* and

Candida albicans. Glycans from both herbs enhance macrophage activation. Extracts from *Echinacea* by assay studies increased natural killer cells isolated from patients with AIDS and chronic fatigue syndrome. Components of garlic and *Echinacea* have increased cytokine production of immune system cells such as interleukins and tumor-necrosis factor. Both herbs have enhanced the production of antigen-specific IgG and IgM antibodies. The message in a Japanese investigator's report¹² about garlic and influenza in 1973 was clear and has been confirmed in very recent studies. Components of garlic have been shown to enhance the membrane functions of lymphocytes and macrophages such as receptor site activity and sensitivity. Anecdotal, experimental, and clinical data more than substantiate the value of these herbal roots as first-time therapeutic defenses and cures for primary upper respiratory tract infections caused by the common cold and influenza viruses, but for secondary bacterial invaders.^{27,33-36}

CONCLUSION

It is only fitting and proper for appropriate monitoring and planning strategists such as the World Health Organization, GRIPPE, and others to strongly consider evaluating the constructive role the herbs *Echinacea* and garlic and others may play in helping us cope with potential biological disasters. This should be done before too many more cold-flu seasons pass. If a virulent influenza nightmare should come to pass before we can investigate the worth of these herbs and are unable to successfully treat ourselves with approved allopathic and vaccine therapies, the empirical use of these herbal preparations may have infinite survival value.

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