Your Monthly Update

Dear Colleague

Welcome to this special edition newsletter from Pure Bio Ltd, focusing on Swine Flu and how to protect yourself and your patients from infection.

Influenza & Swine Flu

Maintaining a healthy immune system is the prime way of protecting against any strain of the influenza virus. This can be achieved through

- *A healthy lifestyle*
- *A good diet*
- *A supplement regime*

Healthy Lifestyle

- Increased stress levels lead to atrophy and decreased activity of the thymus gland by up to 60% maximum potential.
- Adequate amounts of sleep are essential for the immune system to recuperate
- Neuro-immunological studies have shown that laughter, or even anticipation of a good time increases the number and activity of T-cells
- 30 minutes of aerobic exercise five times a week has been shown to boost the production of WBCs, increase macrophage activity and increase destruction of xenobiotics. It also raises production of interleukin and interferon
- Alcohol and tobacco consumption; prescribed, non-prescribed and recreational drugs; elevated glucose; excess sugar consumption and chemical exposure all weaken the immune system (glucose and vitamin C compete for the same transport sites into the WBCs)

A good diet

- Avoid caffeine, alcohol and refined carbohydrates
- Increase intake of antioxidant rich fruits and vegetables – blueberries, blackberries, sweet potatoes, red peppers, apricots. Garlic, onions and shiitake or maitake mushrooms are also immune system enhancers
- Excess fat from meat, dairy and transfats in processed foods depress immune function
- Adequate liquid intake is essential. Dehydration of the upper respiratory tract mucous membrane allows much greater viral proliferation. For this reason, vaporisers will also repel viral infection. However, drinking concentrated

sources of sugar such as fruit juice reduces the phagocytic activity of WBCs. For this reason, fruit juices should be diluted by at least 50%

The Facts about Swine Flu

The H1N1 Swine Flu virus is a new strain of influenza. Once infected, there is a potential window of transmission for one or possibly two days before any symptoms arise; and for up to seven days after the onset of symptoms. This may be extended for up to ten days in young children. Method of transmission is via droplets of mucous which are coughed or sneezed out of the cells of the nasal mucous membrane. A single sneeze may contain anything up to 40,000 droplets!

Natural defence mechanisms can create immunity at a mucosal level against most pathogens, including influenza. These mechanisms include both a physical barrier and production of thymic derived cells – T helper cells; immunoglobulins and T-lymphocytes; which protect against invasion into the deeper tissues. Increased production of immunoglobulins can be achieved with Saccharomyces Boulardii; so this is an invaluable supplement to support the immune system.

General Hygiene Recommendations

- Wash hands frequently with soap and water or alternatively use an alcohol-based hand cleaner
- The mouth and nose should always be covered with a tissue when coughing or sneezing
- Avoid recurrent touching of eyes, nose and mouth
- People who are sick with an influenza-like illness (ILI) (fever plus at least cough or sore throat and possibly other symptoms like runny nose, body aches, headaches, chills, fatigue, vomiting and diarrhoea) should stay home and minimize contact with others, including avoiding travel, for 7 days after their symptoms begin or until they have been symptom-free for 24 hours, whichever is longer
- Avoid close contact (i.e. being within about 6 feet) with persons with ILI

Nutritional Supplementation

Saccharomyces Boulardii increases production of immunoglobulins – specifically sIgA, which is known to inhibit viral invasion. sIgA may become suppressed if stress levels are increased, or if there is intestinal dysbiosis.

Probiotic supplements should be taken after a meal (not on an empty stomach) to ensure that the flora (probiotic organisms) are able to survive the stomach acids and reach the intestines.

Vitamin D is increasingly being demonstrated to have an important role immune resistance and in the resolution of viral invasion.

Apple cider vinegar (ACV) has natural antibacterial and anti-inflammatory properties, thus assists in the detoxification process. It also promotes digestion and helps to maintain a healthy intestinal flora. ACV assists in the breakdown of mucous; and is rich in potassium.

Vitamin E is a natural immune system booster. It also decreases the production of the cytokine TNF-a. Its effects are enhanced when taken in combination with vitamin C.

Green Tea is a very effective antiviral. It decreases the production of the cytokine (catechins) TNF-a; and inhibits the protease neuraminidase, which is involved in infection by the influenza virus. It has been shown most effective at the early phase of infection.

St John's Wort is an effective antiviral. It decreases the production of the cytokine IL-6.

Resveratrol has antiviral properties. In addition to inhibiting neuraminidase, Resveratrol also inhibits the intracellular production of viruses.

Vitamin C – 500mg to 1000mg every two hours for the first day of infection and 3 x daily thereafter (or up to bowel tolerance). Vitamin C has been shown to shorten the course and severity of acute viral infections. Although vitamin C is both antiviral and antibacterial, its primary effect is by increasing host resistance. It enhances WBC production; increases interferon levels, antibody responses, secretions of thymic hormones; and increases integrity of connective tissue.

Zinc – zinc possesses direct antiviral activity and has been shown to reduce the duration of an acute viral infection by inhibiting viral replication.

Beta-carotene – provides significant antioxidant protection to the thymus gland.

Olive Leaf Extract – contains the active ingredient oleuropein – a potent anti-viral, anti-bacterial and anti-fungal agent by stimulating phagocytosis.

Maitake, Shiitake and **Reishi** – contain polysaccharides that promote optimal immune cell responses and proper enzyme activity in the cells -

- *M/R/S Mushroom Formula*

Cat's Claw – the alkaloids in Cat's Claw are specifically associated with enhancing immune system cell function, including phagocytosis and macrophage activity.

Ginger – the primary active ingredient in ginger has been shown to have specific therapeutic activity against H. influenzae, Staph. Aureus, Strep. Pyogenes and Strep. Pneumoniae.

Herbal tinctures

- ***Hydrastis Canadensis (Golden Seal)***
- ***Glycyrrhiza glabra (Licorice)***
- ***Astragalus membranaceus***

All are potent anti-viral agents which also stimulate the body's natural immune mechanisms

Substances to avoid:

The following substances should be avoided if exposed to or diagnosed with Swine flu as all have been shown to increase production of cytokines TNF-a and IL-6, potentiating a cytokine storm:

- **Elderberry juice** (Sambucal) - this substance is very effective against the common flu but may not be desirable for the H5N1 virus

- **Honey**
- **Chocolate**
- **Echinacea** - although it is generally recommended for normal flu, research shows that it may increase the chance of cytokine storms for H5N1

Micro Algae (Chlorella and Spirulina) should also be avoided as they also increase production of cytokine TNF-a.

Preventative Nutrition:

Glutathione has been shown to block influenza viral infection and replication. Infection by RNA virus induces oxidative stress in host cells, which depletes glutathione in the epithelium of the oral, nasal and upper airway -

Selenium - the influenza virus has been shown to demonstrate increased virulence in the presence of selenium deficiency -

Influenza & Aging

Aging is accompanied by a series of structural and functional changes in the respiratory system, some of which depend on declining performance of the immune system. The dominant risk for morbidity and mortality lies in respiratory infections with pneumococci and influenza virus. These risks are increased by immunosenescence, either intrinsic due to aging or secondary to underlying diseases, poor diet, medication etc. Adaptive responses are further degraded by post vaccination responses to influenza virus antigen.

After the age of 50 several abnormalities develop in the lungs: reduced muco-ciliary clearance, loss of elastic fibres and low-grade inflammation. There are also alterations in the mononuclear cells with an increase in activated T-lymphocytes. The defects in humoral immunity are, in part, attributed to a functional deficiency of zinc and selenium. These two minerals are therefore the most clinically significant in the protection of the elderly against influenza and pneumonia.

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