
Focus on Health

Special Edition
May 2006, Revised

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TREATMENT/PREVENTION OF AVIAN INFLUENZA

There is at present a widespread epidemic of H5N1 influenza in domestic fowl as well as wild birds. In the past decade numerous instances of bird to human transmission have been recognized. Lessons can be learned from the 1918 pandemic of influenza that killed 50 million people in 24 months as compared to 50 million who have died of HIV-AIDS in 24 years. The mortality rate is 50% in infected individuals. No effective vaccine is presently available. The drug Tamiflu is in short supply and may prove ineffective, if not now, soon, due to viral mutation.

The 1918 influenza virus is 100 times as lethal in mice as any other influenza virus. It replicates rapidly so that high titers are found in the lungs of infected mice as early as three days after exposure. The 1918 human influenza virus was associated with rapid onset of purulent bronchitis leading to asphyxiation, marked cyanosis, and death in about three days.

The body's immune response to viral infection is mediated through a specific cytokine, tumor necrosis factor alpha (TNF alpha) which mobilizes killer lymphocytes to the involved site, in this case the pulmonary tree. Another cytokine, interferon alpha, attaches to the wall of the virus, and is transported into bronchial epithelial cells. The resultant purulent bronchitis literally drowns the victim in his own secretions. Compounds that block the action of these specific cytokines can thus be effective as therapeutic agents to reduce the mortality associated with pandemic influenza.

The H5N1 virus is included in a group of viruses which are susceptible to a potent antiviral combination of two drugs, presently available in any U.S. pharmacy. Ultram, currently marketed for postoperative pain, combined with Valtrex, currently marketed for treatment of herpes, when combined have an antiviral effect five times as great as either drug alone, and treat or prevent a wide spectrum of viral diseases.

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