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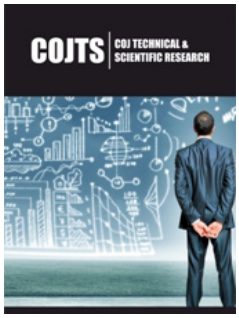
Opinion

Modern Approaches to Non-Specific Prevention of Viral Respiratory Infections

Vladimir Kolesnik*

Founder of Laboratory LATTA, Russia



***Corresponding author:** Vladimir Kolesnik, CEO & Founder of Laboratory LATTA, Russia

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Opinion

Global urbanization and the events of the COVID-19 pandemic have revealed problems related to the consequences of disturbed ecology and weakened immunity of residents of megacities. According to experts of the International Monetary Fund, the financial losses of the global economy from the effects of the pandemic for the period 2020-2023 amounted to $3.7 trillion. According to the World Health Organization, at least one in three people in the world carries SARS or flu every year. According to official statistics, about 500 million people get sick with SARS and influenza every year in the world, of which 2 million people die from this infection and/or their complications. The main danger of being infected is in confined spaces, public places where cross-infection occurs. Widely used methods of air disinfection aimed at breaking the mechanism of transmission of infections using ultraviolet light and aerosol disinfection have limitations on use in the presence of people. Also, some modified genotypes of viruses and bacteria have become resistant not only to ultraviolet radiation and toxic chemicals, but also to antibiotics and various combinations of vaccines. Accordingly, science faces new challenges in the search for alternative means of protection against respiratory viruses and bacteria with targeted effectiveness of their suppression and at the same time safe for humans. The scientifically studied and confirmed properties of phytoncides of wild plants to resist airborne infections of various origin have become the basis for a scientific initiative [1].

Long before the outbreak of the pandemic, the LATTA Laboratory scientific group, together with scientists from leading scientific institutions, conducted a number of studies in chemistry, microbiology and medicine with one of the developed prototypes, which subsequently formed the basis for effective methods and means of protection against respiratory infections of various origins. The first stage of research in analytical chemistry using high-precision gas mass spectrometry made it possible to study and adjust technologies for the isolation of active essential biocomponents with bactericidal, fungicidal and antiviral properties. To identify and remove allergens dangerous to humans from the composition of the active substance. The second stage is microbiology: approbation of the active substance on various tests of bacteria, fungi, and resistant flora. The test results confirmed the active properties and a wide range of suppressive effects against infections of various origins. The third stage is medicine, in the conditions of randomized groups of patients, including children from 3 to 17 years old, studies were conducted in leading medical institutions with the participation of accredited state laboratories. Special attention should be paid to the study of the first stage, where the peculiarity of the effect of the drug on creating conditions capable of preventing respiratory morbidity is revealed: inactivation of pathogens in the oropharynx, reduction of carriage in the gastrointestinal tract of rotaviruses and cryptosporidia [2].

Successful results of clinical studies indicating a 2.2-fold reduction in the risk of morbidity in the category of frequently ill children, in specific patients by 3.34 times, improvement of microbiocenosis of the oropharyngeal mucosa, immunotropic effect on the cellular link of

immunity, as well as proven safety and hypoallergenic properties of the drug, created prerequisites for testing the effectiveness of the aerosol disinfection of air with natural phytoncides in conditions of organized collectives [3]. An exhaustive evidence base has been collected for clinical testing and pilots in conditions of children's educational institutions, bank service offices, as well as implementation acts for the prevention of nosocomial infections in large medical institutions .The developed method of air disinfection, unlike the use of ultraviolet light, does not deprive the air of its living content, due to saturation with bioactive components, it cleanses it from bacteria and viruses by 95-98%, prevents cross-infection. When spraying the product in the air and particles enter the respiratory tract, the production of a person's own interferon is activated, and the protective functions of the immune system are enhanced. The high target effectiveness, hypoallergenic composition and clinically proven safety of the techniques received the support of the medical community and at the legislative level consolidated the use of AirFit (trademark) as a means of protection against SARS, influenza, coronavirus and bacterial infections in 10 client categories, including children's educational, administrative, public institutions and all types of passenger transport. Modifications and a wide range of AirFit applications: protection against bacteria in air conditioners, anti-epidemic measures and prevention of acute respiratory infections in medical and educational institutions, public places and transport, meets modern safety and efficiency requirements. AirFit is also relevant for individual use, especially in small spaces, for example in cars, where a person is most at risk of infection. The scientific evidence base and methods of application (including in medical practice) determine the prospects for using funds based on active natural phytoncides not only to break the mechanism of transmission of infections through the air, but also to carry out non-specific prevention of acute respiratory infections aimed at strengthening the protective functions of the human immune system.

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