

20<sup>th</sup> Global Summit & Expo on  
**VACCINES, IMMUNIZATION & B2B** & International Conference & Expo on  
**CLINICAL VIROLOGY AND INFECTIOUS DISEASES**  
September 18-19, 2017 Houston, USA

## What drives the cause of the synergistic infections like *Legionellosis* and *influenza*

Eleni Magira

National and Kapodistrian University of Athens, Greece

*Legionella* and *Influenza* types A and B viruses can cause either severe community-acquired pneumonia with respiratory failure or *Legionella* infection could attribute to *influenza* infection with potentially fatal prognosis. Distinguishing viral from bacterial pneumonia can be difficult. This is particularly important since the signs and symptoms of pandemic *Influenza* and *Legionellosis* infection are similar. Highly pathogenic influenza strains cause severe dysregulation of the host innate immune response, resulting in release of proinflammatory cytokines and chemokines. This cytokine-chemokine storm then leads to 'collateral' damage to the lung tissue. Resistant mechanisms of the host are in jeopardy and therefore the burden of influenza will increase. This altered cytokine response may also strip sialic acid from the lung, thus exposing receptors for bacterial adherence. This bacterial adherence, in the case of *Legionella* pneumonia deteriorates the patient. This dual infection (*Influenza* and *Legionella*) affects negatively not only resistance but also tolerance mechanisms. Influenza virus does not exert a protective effect over *Legionella* like the  $\alpha$ -thalassaemia patients who have less severe malaria. This further means that early treatment with neuraminidase inhibitors, which interrupts the cleavage of sialic acids, may increase resistance mechanisms and facilitates clearance of virus. This may also increase the tolerance properties. Co-pathogenesis between pandemic influenza and bacteria is characterized by complex interactions between co-infecting pathogens and the host. Understanding the underlying reason of the emersion of the secondary bacterial infection during the influenza infection is a very challenging issue. The dual infection impacts viral control and may delay viral clearance. Effective vaccines and antiviral therapy during influenza epidemics are crucial to increase resistance towards influenza, to decrease the prevalence of influenza and possibly, ultimately to interrupt the potential secondary bacterial infections. The immune counteractions between *Influenza* and *Legionella* and particularly their interactions with the host are crucial regarding the prognosis of the dual infection. Manipulation of the immune system either by producing effective pan-influenza stains vaccines or by administrating timely appropriate antiviral and antimicrobial medicines could possibly increase resistance and tolerance in favour of the host.

### Biography

Eleni Magira has completed her MD at the University of Thessaloniki and her Post-doctoral studies from University of Pennsylvania School of Medicine. She is an Assistant Professor of Internal Medicine and Critical Care. She is working in Evangelismos Hospital the hopsital with the largest Intensive Care unit in Greece. She has published more than 30 papers in reputed journals and has been serving as an Editorial Board Member of reputed.

elmagira@yahoo.com

### Notes: