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‘Influenza: The same virus but a very different illness if you are young or old’

Respiratory viruses are among the most common causes of hospitalisation and are a particular threat to vulnerable populations such as the elderly. In this study the Human Viral Challenge Model of infection was used to investigate the immune response to a GMP produced wild-type A/Perth/16/2009 (H3N2) Influenza virus in healthy adults of different age classes. After completion of the pre-clinical phase, a dose ranging titration clinical study was carried out in young healthy adults to select the most suitable safe titre of virus with a reproducible profile of pathogenicity. In the next phase the chosen dose was used to address the relationship between the age of infected subjects and the profile of influenza illness. Sero-suitable volunteers were inoculated with A/Perth/16/2009 virus in a quarantine facility and divided into two age groups: 18 to 45 and 46 to 64 years old. The development of symptoms and progression of infection were monitored for 8 days to assess parameters such as safety, clinical symptoms and virus shedding. Seroconversion was evaluated during a follow up visit at day 28 post infection. The progression of the influenza disease was found to be different between the younger and older subject groups in terms of the profile of infection and the time of onset, time to peak, intensity and resolution of symptoms either by self-assessment using a standardised diary card (which has been used for over 15 years and in approximately 2000 subjects) or through diagnosis by a study physician, and in terms of virus shedding, measured by cell infectivity and molecular assays. Results from this study will allow better understanding of the influenza virus in the community and will help in the development of new vaccine strategies and therapeutics for populations at risk, such as the elderly.

Biography

Nicolas Noulin has completed his PhD in Immunology and Molecular Biology from Orleans University (France) and Post-doctoral studies from Institut Pasteur in Paris. He is a Principle Virologist at hVIVO, a company pioneering a technology platform which uses human models of disease.

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