eP398
ePoster Viewing
Influenza, from bench to bedside

2012-2013 WINTER HOSPITALIZATIONS AT A UNIVERSITY HOSPITAL: HIGH MORBIDITY ASSOCIATED WITH INFLUENZA AND OTHER ACUTE RESPIRATORY VIRAL INFECTIONS IN ADULTS

M. Bourgeois[1], V. GÈrard[2], N. Ausselet[1], X. Muschart[2], I. Michaux[3], T.-D. Huang[4], P. Bogaerts[4], Y. Glupczynski[4], I. Thomas[5], **B. Delaere**[1]

[1]Infectious Diseases, University hospital UCL Mont-Godinne, Yvoir, Belgium ; [2]Emergency Unit, University hospital UCL Mont-Godinne, Yvoir, Belgium ; [3]Intensive Care Unit, University hospital UCL Mont-Godinne, Yvoir, Belgium ; [4]Laboratory of microbiology, University hospital UCL Mont-Godinne, Yvoir, Belgium ; [5]Communicable and Infectious Diseases, Scientific Institute of Public Health, Brussels, Belgium

Objectives
Winter hospitalizations for acute respiratory infections related to viral pathogens are underestimated. Influenza can lead to severe acute infection, but other respiratory viruses may also contribute to morbidity and mortality, especially in patients with risk factors. Our descriptive observational cohort study was aimed to assess the impact of respiratory viruses during the 2012-2013 influenza epidemic season.

Methods
From week 51 to week 17, all adult patients admitted to the emergency department (ED) and requiring an hospitalization for a severe acute respiratory infection (SARI) were included and managed according to recommended infection control measures (transmission-based precautions). The case definition of SARI was defined as (within the previous 7 days): fever > 38°C or history of fever associated to cough and/or dyspnea. Nasopharyngeal swabs collected in transport medium underwent multiplex PCR assays targeting influenza, respiratory syncytial virus (RSV), metapneumovirus, rhinovirus (RhV), enterovirus, coronaviruses (CoV), parainfluenza, adenovirus, bocavirus, paraechovirus. Patient clinical data were prospectively recorded and retrospectively reviewed.

Results
From December 17th (2012) to April 22th (2013), 195 (17%) out of 1160 adult medical admissions to ED matched with the SARI case definition. Among these, 115 (59%) had a documented viral infection. Seventy-two out of 195 (37%) were positive for an influenza virus, with 34 influenza A: 20 (2009) A/H1N1, 10 A/H3N2, 4 not subtyped; 37 influenza B; 1 co-infection (2009) A/H1N1 and B. Fifty out of 195 (26%) were positive for another respiratory virus, mostly including RSV (n=19), CoV (n=10) and RhV (n=7). Co-infection by two respiratory viruses was documented in 11 out of 115 patients (10%). As major comorbidities in our SARI population, 70 (36%) had a chronic obstructive pulmonary disease (COPD) and 10 (5%) had a pulmonary transplantation. Other main risk factors were cardiovascular conditions and cancer-associated immunodeficiency. Among COPD patients, 40 (57%) out of 70 were positive for at least one virus (21 influenza, 19 other viruses), with 4 co-infections and 4 deaths. Of the 10 pulmonary transplanted patients, 4 were positive for an influenza virus, one of these being rehospitalized further for a SARI with a documented RhV infection. Globally, 13 (11%) infected patients required intensive care, with 6 deaths. One 30 year-old woman died of fulminant myocarditis due to (2009) influenza A/H1N1. Crude all-cause mortality rate for patients with a documented viral infection was 11%. Among influenza-infected patients with an immunization status available (n=58), 53% were vaccinated.

Conclusions
This surveillance project confirms the impact of viral pathogens in adult hospitalizations for severe acute respiratory infections, especially in patients with severe underlying comorbidities. In our population, influenza is the predominant virus, followed by RSV. As one of the seasonal strains, (2009)

influenza A/H1N1 can still lead to major complications and be associated with worse clinical outcome.