

1134. Characteristics of Hospital-Acquired Influenza in Adults in Southern Ontario, 2005-2012

Alon Vaisman, MD¹; Kazi Hassan, MD, MSc²; Karen Green, MSc²; Andrew E. Simor, MD, FRCPC, FACP³; Kevin Katz, MD CM, MSc⁴; Alicia Sarabia, MD⁵; Jeff Powis, MD, MSc, FRCPC⁶; Allison McGeer, MD, MSc, FRCPC⁷; Toronto Invasive Bacterial Diseases Network¹; ¹Medicine, Mount Sinai Hospital, Toronto, ON, Canada; ²Mount Sinai Hospital, Toronto, ON, Canada; ³Sunnybrook Health Sciences Centre, Toronto, ON, Canada; ⁴Infection Prevention and Control, North York General Hospital, Toronto, ON, Canada; ⁵Laboratory Medicine, Toronto Invasive Bacterial Diseases Network Influenza Study Group, Mississauga, ON, Canada; ⁶Infectious Disease, Toronto East General Hospital, Toronto, ON, Canada; ⁷Department of Microbiology, University of Toronto, Toronto, ON, Canada

Session: 133. Viral Infections: Epidemiology

Friday, October 10, 2014: 12:30 PM

Background. Influenza poses a particular threat to vulnerable hospitalized patients. We reviewed the characteristics of hospital acquired influenza identified by surveillance in Toronto from 2005 to 2012.

Methods. The Toronto Invasive Bacterial Diseases Network has performed population based surveillance for laboratory confirmed influenza associated with hospitalization in south central Ontario since the 2004/5 influenza season. Eligible patients were those with influenza identified by EIA, DFA, culture, and/or RT-PCR who either required hospitalization for the illness associated with the positive test, or were admitted to an acute care hospital when the specimen was obtained. Acute care hospital acquired influenza (HAI) was defined as influenza with symptom onset >72 hours after hospital admission.

Results. Between January 2005 and May 2012, 3130 adult influenza cases were identified, of which 318 (10%) were HAI. Of these, 268 were Influenza A (54 H1N1, 112 H3N2, and 103 not subtyped) and 50 were Influenza B. The median rate of HAI was 1.15 per 100,000 patient days (range 0.47-1.93) with no discernible trend. 22% of cases were associated with declared hospital outbreaks. Compared to community acquired cases, patients with HAI were older (70 vs 66 years old, $p < 0.01$), more likely to have prior chronic illness (95.3% vs 90.6%, $p < 0.01$), and more likely to be infected by influenza A (84% vs 77%, $p < 0.05$). At diagnosis, only 40% of hospital acquired cases met the CDC definition for Influenza-like illness. Patients with hospital acquired influenza were more likely to require ICU admission (26% vs 20%, $p < 0.001$) and more likely to die within 15 days of diagnosis (18% vs 9%, $p < 0.001$). Median time from admission to onset of symptoms was 12 days (range 3-209 days). 192/318 (60%) patients were treated with antibiotics, and 217/318 (68%) with antivirals (compared to 84% and 59% in community acquired cases, respectively). Median time from symptom onset to antiviral therapy was 48 hours.

Conclusion. Hospital acquired influenza has atypical presentations and results in a significant number of ICU admissions and deaths. Our surveillance identified only a fraction of cases. Active surveillance studies are needed to further define clinical criteria for influenza testing, and to identify cases occurring after hospital discharge.

Disclosures. A. McGeer, Hoffman LaRoche: Grant Investigator, Investigator and Scientific Advisor, Research grant and Research support; GSK: Grant Investigator, Investigator and Scientific Advisor, Research grant and Research support; Novartis: Grant Investigator, Investigator and Scientific Advisor, Research grant and Research support; Sanofi Pasteur: Grant Investigator and Scientific Advisor, Research grant and Research support