

**798. Hospitalization due to Respiratory Syncytial Virus (RSV) and Influenza Infection in Adult Patients: a Retrospective Cohort Study**

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**Background.** A better understanding of the characteristics and outcomes of adult patients hospitalized with RSV as compared to influenza infection is needed.

**Methods.** We conducted a retrospective cohort study of adult patients admitted to four hospitals in Toronto, Canada, between September 2012 and June 2013 with RSV or influenza infection diagnosed by RT-PCR. Main outcomes were hospital length of stay (LOS), need for intensive care (ICU) or mechanical ventilation (MV), and all-cause mortality. Chi-square and Fisher's exact test were used for analysis.

**Results.** 86 patients with RSV and 231 with influenza were included. Median age was 74y in RSV and 73y in influenza patients. Patients with RSV had more underlying illness ( $P = 0.03$ ) with a trend toward greater underlying cardiac disease ( $P = 0.054$ ), but no difference in rates of underlying lung disease, malignancy or

immunosuppression. Most common symptoms and signs in both groups were cough, dyspnea, sputum production, fever, weakness and wheezing. 56% of influenza and 50% of RSV patients met CDC criteria, and 12% of influenza and 16% of RSV patients met PHAC criteria for influenza-like illness. Dyspnea, sputum production, weakness and wheezing were all more common in RSV patients ( $P = <0.01$  for all). There were no significant differences in main outcomes, or overall lower respiratory tract or cardiovascular complications. CHF exacerbation was more common in RSV patients ( $P = 0.01$ ). Mean and median hospital LOS was 11 and 6 days for both groups. 15% with RSV and 13% with influenza required ICU care, and 9% in both groups required MV. 6% with RSV and 9% with influenza died during hospitalization. Need for MV and ICU were associated with mortality in both groups ( $P = 0.01$ ). More co-pathogens were identified in RSV patients (11/86 vs 14/231,  $p = 0.048$ ), with greater associated mortality in influenza patients. 78% of RSV and 72% of influenza patients were treated with antibiotics.

**Conclusion.** Adults hospitalized with RSV or influenza infection experience similar hospital LOS, need for ICU and MV, and mortality. While presenting signs and symptoms are nonspecific, patients with RSV have greater dyspnea, sputum production, weakness and wheezing. Patients with RSV and influenza often receive antibiotics. There is need for development of RSV vaccines and treatments for adults.

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