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O1215 Respiratory syncytial virus infection in hospitalised adults with severe acute respiratory infection during four influenza seasons in Belgium: prevalence, subtype distribution, risk factors and outcomes

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Background: Respiratory syncytial virus (RSV) infection is recognized as an important cause of hospitalization in the elderly and adults with risk factors. Various RSV vaccines are in clinical phase evaluation. However, the required prevaccination data about risk groups, burden of disease and baseline epidemiology in adults are scarce in Europe. We aim to provide these data from an already existing surveillance of severe acute respiratory infections (SARI).

Materials/methods: We used data of influenza seasons 2012-2013, 2015-2016, 2016-2017 and 2017-2018 from the 6 sentinel hospitals of the Belgian SARI surveillance, to assess RSV prevalence, subtype distribution, risk factors and outcome among adults hospitalised because of SARI (fever >38°C or history of fever, dyspnoea and/or cough). Naso-pharyngeal swabs from all subjects were screened for Influenza and RSV by multiplex PCR. Socio-demographics, risk factors and complications were prospectively collected

Results: The overall prevalence of RSV infection among SARI cases for the 4 seasons was 5.5% (165/3001). RSV prevalence varied highly between seasons (8.25%, 2.05%, 9.15% and 3.01% in 2012-2013, 2015-2016, 2016-2017 and 2017-2018 respectively). RSV-A was predominant in 2012-2013 and 2015-2016 and RSV-B in 2016-2017 season while both strains circulated in 2017-2018. RSV-infected subjects were older as compared to non-RSV SARI cases (71.3 vs 68.8 years, p=0.036). As compared to influenza infected subjects, RSV-infected subjects reported less frequently a history of fever (70.3% vs 82.6%, p<0.001) but more frequently complained of dyspnea (74.3% vs 64.2%, p=0.01). Presence of heart disease was more frequent in RSV patients as compared to influenza patients (39.9% vs 31.1%, p=0.04) and was the only risk factor associated with RSV among all SARI cases (OR 1.45, 95% CI 1.03-2.04). Complication rates (ICU admission, ARDS, pneumonia) and mortality were similar between influenza and RSV-infected subjects but length of stay was longer in RSV-infected subjects (12.7 days vs 11.6 days, p= 0.04). RSV-infected subjects >80 years and with ICU admission had higher risk of death (OR 4.9, 95% CI 1.3-24 and OR 6.1, 95% 1-37.3, respectively).

Conclusions: If timed appropriately**,** surveillance networks using the SARI case definition allow surveillance of RSV seasonality, subtype distribution, severity and burden in an adult population.