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Occurrence and spread of influenza A(H1N1)pdm09 virus infection in Norwegian pig herds based on active sero surveillance from 2010 to 2014

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The incursion of influenza A(H1N1)pdm09 virus was detected by Norway's active sero surveillance of its pig population in 2009. Since then, surveillance data from 2010 to 2014 revealed that 54% of 5643 herd tests involving 1567 pig herds and 28% of 23036 blood samples screened positive for antibodies against influenza A virus. Positive herds were confirmed to have influenza A(H1N1)pdm09 virus infection by hemagglutination inhibition test. In 50% of positive herd tests, $\geq 60\%$ of the sampled pigs in each herd had antibodies against influenza A(H1N1)pdm09 virus. This within-herd animal seroprevalence did not vary for type of production, herd size or year of test. The overall running mean of national herd seroprevalence and annual herd incidence risks fluctuated narrowly around the means of 45% and 32%, respectively, with the highest levels recorded in the three densest pig-producing counties. The probability of a herd being seropositive varied in the five production classes, which were sow pools, multiplier herds, conventional sow herds, nucleus herds and fattening herds in descending order of likelihood. Large herds were more likely to be seropositive. Seropositive herds were highly likely to be seropositive the following year. The study shows that influenza A(H1N1)pdm09 virus is established in the Norwegian pig population with recurrent and new herd infections every year with the national herd seroprevalence in 2014 hovering at around 43% (95% confidence interval (40-46%).

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Burden of acute lower respiratory tract infection caused by influenza virus among children in Egypt

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Background: Influenza virus is one of the most important causes of acute lower respiratory tract infections (ALRTI) in children. We aimed to assess the burden of influenza among hospitalized children less than 5 years in Egypt.

Methods: We enrolled 3075 patients, of which 77.8% were children less than 5 years old diagnosed with ALRTI admitted to Cairo University Hospitals during five-year period from 2010 to 2014. Nasopharyngeal aspirates were obtained from the patients and tested for influenza among 16 respiratory viruses by multiplex PCR.

Results: Patients had a mean age of 4 months, 53.4% were males. Average hospitalization duration was 5 days, 35% were positive for one or more virus. Influenza A and influenza B were detected in 6.2% and 3.2% of children respectively. All influenza patients presented with cough and fever. More than 80% had tachypnea and nasal flare. Complications were associated with chronic lung and heart conditions. The most common complications were ARDS (81.8%), requiring ICU admission (12%) and death in 8.2%; though seasonal distribution was not consistent, yet 80% of influenza cases occurred in winter and early spring seasons ($p < 0.001$). Nosocomial transmission occurred in 2 outbreaks in a Surgical Pediatric Intensive care units, affecting 7 children.

Conclusion: Influenza is an important etiology of ALRTI in children below 5 years of age. As it is more prevalent in winter and tends to cause severe infection in high risk group, vaccination, rapid diagnosis and early start of antiviral therapy are essential.

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