Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

20.020

Swine influenza A serology: ELISA *versus* HI test

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Purpose: In this study we evaluate the performances of a commercial ELISA kit for Influenza A virus (IAV) serology by comparison with hemagglutination inhibition test (HI), gold standard test according to OIE and able to detect early and late antibody response, on swine sera collected in Northwestern Italy in 2014.

Methods & Materials: Briefly, 1086 sera from 43 swine herds were analysed in HI assays using H1N1, H3N2, H1N2 and H1N1pdm reference antigens (cut-off titer≥20) and with a competitive multi-species ELISA kit detecting anti-nucleoprotein IAV antibodies. ELISA accuracy and the concordance between the two assays were evaluated.

Results: HI positivity to at least one antigen was registered in 864 sera. In ELISA, 639 sera resulted positive, 393 negative and 54 inconclusive. The 20% (44/222) HI seronegative sera resulted positive in ELISA, while the 26% (224/864) HI positive samples were ELISA negative and so considered as false negative. Interestingly, the 50% of them had a HI titer between 20-40; in the remaining sera, titers were distributed uniformly among 80-5120 values. ELISA performances *vs* HI were: sensitivity 72.65% (95%CI:69.46-75.68), specificity 63.01% (95%CI:58.44-67.41), PPV 73.08% (95%CI:69.46-76.49) and NPV 43.00% (95%CI:38.05-48.06) with K=0.3961 (95%CI:0.3405-0.4516). Considering the subtype-specific assays separately, the best ELISA performances resulted in comparison with H1N1pdm HI test with 87.89% (95%CI:83.25–91.62) sensitivity, 46.65% (95%CI:43.09-50.23) specificity, 35.21% (95%CI:31.51-39.05) PPV and 92.11% (95%CI:88.99-94.58) NPV. The best concordance was shown with H3N2 HI assay (K=0.4601, 95%CI:0.4059-0.5144).

Conclusion: One hypothesis for the higher ELISA positivity rate may be indicative of a seroconversion against another IAV strain, but the different target antibodies of the two tests might be also taken into account. The false negative sera may be due to an early immune response in some animals, not detectable by the commercial kit. Infact, as suggested by some authors, ELISA test may not identify positive animals at the early stage of infection effectively as the HI, particularly when the virus is introduced to a naive swine population. In conclusion, the ELISA performances need to be improved, but the commercial kit can be used in SIV infection serodiagnosis. However, caution may be used since the test could miss recently exposed animals.

http://dx.doi.org/10.1016/j.ijid.2016.11.263

20.021

Prevalence of respiratory virus infections using multiplex real-time PCR in Korean nationwide reference laboratory (2015 annual report)

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Purpose: Respiratory virus (RV, Influenza, RSV, parainfluenza, adenovirus, etc) cause a significant community health concern. Treating cold like symptom and managing severe lower respiratory infection are common in children and old age. Active monitoring of prevalence of specific respiratory virus is carefully follow up and monitored by hospital based laboratories and nationwide reference laboratories. We use sensitive and validated real-time PCR assay for reporting clinically important respiratory virus prevalence rate during 2015.

Methods & Materials: Seegene Medical Foundation (SMF) had nationwide local branch offices networks which collect specimen and transport in Korea. More than 4,000 clinics sent nasopharyngeal swab (NPS) and/or nasopharyngeal aspiration (NPA) everyday and the results were reported next working day. From January 1, 2015 to December 31, 2015 36,281 samples (17,062 male and 19,219 female) were tested and analyzed in SMF using Anyplex II RV16 (Seegene, Seoul, Korea). This multiplex real-time PCR (Anyplex II RV16) could detect sixteen respiratory infection causing pathogens, Adenovirus (AdV), Influenza A (FluA) and B (FluB), Parainfluenza 1, 2, 3, 4, Rhinovirus A/B/C (HRV), Respiratory syncytial virus A and B (RSV A and B), Bocavirus (HBoV), Metapneumovirus (MPV), Coronavirus 229E, NL63, OC43 (CoV), Enterovirus (HEV) in two PCR tube.

Results: During twelve months of study period, overall prevalence rates of Adenovirus (AdV), Influenza A (FluA) and B (FluB), RSV A and B, MPV and Rhinovirus were 19.1, 5.2, 2.5, 4.6, 11.6, 5.3, and 26.0% respectively. Typical seasonal peak is demonstrated in summer with parainfluenza (May to September), winter with RSV (January and December) and Influenza A and B (from January to March).

Conclusion: Multiplex real-time PCR shows robust and consistent results in study times. It could be a cost-effective and give a rapid diagnostic tool for the detection of multiple respiratory viruses and frequently used for health care surveillance of flu season. These results have a limitation because these data are come from mostly symptomatic patients but detail medical history could not review. In clinical reference laboratory, high throughput multiplex PCR is convenient and epidemiologic data provides useful information to clinicians.

http://dx.doi.org/10.1016/j.ijid.2016.11.264

20.022

Knowledge, attitudes and practices of parents towards childhood influenza vaccination in Singapore

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Purpose: Seasonal influenza vaccination is recommended in children <5 years, but little is known about vaccination coverage