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Highly Pathogenic Avian Influenza (HPAI) H5N1 Virus in Asia: Evolution and Vaccination

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Abstract

HPAI (H5N1) is still an important emerging disease posing threat on both human and animal health. The causative agent continues to evolve rapidly within various poultry populations and may cause unpredictable outcome. Evolution of the virus will continue until it reaches equilibrium. At present, the HPAI (H5N1) viruses still possess avian virus characteristics. However, if the viruses gain opportunities to infect and evolve in human, it may accelerate adaptation of the avian viruses to be more human preference and thus acquires ability to infect and transmit efficiently among human population. This review aims to elucidate crucial issues regarding to role of vaccination in virus evolution including influence of immune response after vaccination and adaptation of virus to cross species. Additionally, role of vaccination in HPAI (H5N1) control and drawback of vaccine usage are discussed.

Keywords: Avian influenza virus, H5N1, evolution, interspecies transmission, vaccination, disease control.