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HONG KONG BIRD FLU

by

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BACKGROUND¹

Hong Kong returned to her motherland on 1 July 1997. She is now formally known as Hong Kong Special Administrative Region (HKSAR) of People's Republic of China (PRC). Under the one-country-two-system scheme, the city enjoys a high degree of autonomy aside from diplomacy and military. Specifically, policies for animal health and public health of the SAR are set independently by her own Government.

INTRODUCTION

Some 95% of the SAR's 6.8 million population are Chinese who have great affection for fresh food. It is still the culture for housewives to pick their chickens from live poultry retail markets, have them slaughtered on site and then bring the dressed carcasses back home for cooking.

Avian influenza (AI), whether in the mildly pathogenic (MP) or highly pathogenic (HP) form, has a long history dated back to time immemorial. What made the Hong Kong story unique was the cross species transmission of the virus from live chickens to man on 20 occasions in 1997 and 1999, resulting in six fatalities in the 1997 incident. Never before had deaths been reported in human AI infection cases although isolated casualties were not unheard of. An account of the events is presented below.

THE 1997 HPAI OUTBREAK

There are some 100 000 live chickens going into HKSAR's retail markets every day. Not all are sold. It was a trade practice then to keep some stocks in the stores, often closely packed together with waterfowl (e.g. ducks and geese) and game birds (e.g. chukers, guinea fowl, pheasants and quails) even now.

In August of 1997, Department of Health was notified of the unexpected finding of H5N1 avian influenza virus in the tracheal aspirate of a three-year old child who died of pneumonia in May.

Looking back, Agriculture and Fisheries Department received reports of unusual mortality patterns in some local chicken farms that April. But whether the cause was AI could not be confirmed.

Veterinary and public health surveillance for influenza were immediately tightened up. Towards the end of that year, unusual mortalities due to H5 HPAI were again noted in some poultry farms and the wholesale market, to be followed shortly by 17 more human cases of H5N1 avian influenza infection. Eventually, five more patients succumbed to the infection.

1.4 million chickens and other poultry in farms, wholesale and retail markets were depopulated. This action had successfully prevented further cases of avian influenza in man and, more importantly, averted recombination between the avian and human influenza strains which could result in the emergence of a new virus capable of causing a fourth pandemic.

Since then, the SAR Government has adopted the strategies of precluding introduction of the virus and exposure of chickens to the hazard as the dual means to prevent H5 AI. All imported or local poultry have to be tested for H5 avian influenza virus antibodies before they are released to retail markets for sale. In addition, since ducks and geese are natural carriers of the virus, they are segregated from chickens and other birds at all levels, from import to slaughtering. Sanitary and disinfection practices of poultry works and stalls are also enhanced.

THE 1999 MPAI IN MAN

The influenza surveillance system detected two children had influenza caused by H9N2 avian influenza virus. Both made full recovery. There were no associated MPAI outbreaks in birds. But the findings revealed that the interspecies transmission potential of AI viruses has no relationship with their respective abilities to be MP or HP for chickens.

¹ This paragraph aims to help readers to understand Hong Kong's relationship with the PRC.

THE 2001 HPAI OUTBREAK

In early May, H5N1 virus was detected in faecal samples collected from some poultry retail markets. No clinical signs were observed among the chickens.

Gene sequence analysis of the virus showed that it was an H5 virus though not the same as the 1997 one.

Then, unusual mortalities were noted in some of the poultry retail markets. Post-mortem examination indicated that the findings were compatible with HPAI. 1.25 million chickens and other birds in the SAR were depopulated to curb the outbreak.

To better prevent a third HPAI in Hong Kong, the Government added that quails should also be segregated from live chickens since quail genes were found in the 1997 H5 AI virus. Ducks and geese intestines have to be packed when being sold in live chicken stalls for fear of contaminating the birds. Moreover, overcrowding of animals in stalls must not be allowed and, once every month, all retail markets will be cleared of chicken stocks for thorough cleansing and disinfection.

On a longer term, centralized slaughtering or even suspension of supply of live chickens needs to be considered if the society agrees that HKSAR does not want further association with AI.

CONCLUSION

Influenza is one of the oldest and most fatal of all infectious diseases. The fact that migratory wild birds act as the reservoir for the spread of avian influenza virus which has the potential to cross species to infect man points to the importance of maintaining high vigilance in both veterinary and public health surveillance.