



AVIAN INFLUENZA - UPDATE

Avian influenza A (H5N1) has been circulating among Asian birds since 1996. By 2005, the virus had spread to birds in a few European countries, and since 2006 cases have been observed in birds of most European countries. Recent reports include bird cases in Ukraine, Turkey and Great Britain during January 2008. In 2006, the first cases of avian influenza in African birds were recorded, and more recently the virus has been observed among birds in Egypt, Benin and Nigeria. Information on the international occurrence of avian influenza A (H5N1) in birds is available at www.oie.int. For more information on Danish conditions, please see www.fugleinfluenza.dk (Danish language).

Occurrence in humans

The first cases of avian influenza A (H5N1) in humans were observed in connection with an outbreak in Hong Kong in 1997, EPI-NEWS 1-2/98. As from 2003, further cases have been detected, and currently 357 confirmed human cases have been reported world-wide, including 223 fatalities. The 2003 cases were limited to Hong Kong, China and Vietnam. In 2004 cases were also reported from Thailand, and 2005, furthermore, saw Cambodian and Indonesian cases. Additionally, cases have occurred in several other Asian countries. In 2006, Egypt reported the first African case. African reports now comprise a total of 43 Egyptian cases, including 19 fatalities, one Djiboutian case and one fatal Nigerian case. The highest number reported by any country is the 124 Indonesian cases, including 100 fatalities. The cases were typically young and otherwise healthy persons, and infection was primarily transferred via contact with infected poultry. In a limited number of cases where infected persons had close contact with family members, human-to-human transmission could not be excluded; however, infection has not spread beyond this group of persons. The occurrence of avian influenza A (H5N1) in humans is monitored at www.ssi.dk.

Virus

The A (H5N1) influenza virus currently in circulation was originally found in wild birds, but mutated into a form which is highly pathogenic in chickens. The virus then returned to

the wild bird population where some birds, e.g. geese, are non-symptomatic carriers capable of spreading the disease over considerable distances. Since 1997, a total of 14 subtypes (clades) of avian influenza A (H5N1) have been detected. Six clades have been identified as the cause of A (H5N1) infection in humans.

Clinic

The incubation time is generally two to five days. The initial symptoms are frequently related to the respiratory system, but diarrhoea may be the dominant symptom. In fatal cases, severe pneumonia and ARDS (Adult Respiratory Distress Syndrome) are seen. Lympho and thrombocytopenia, and elevated aminotransferases are indications of a serious course. The virus is detectable in airway secretion and frequently also in blood and faeces. In one patient, the virus was also detected in the brain. For information on diagnostics in Denmark, please see EPI-NEWS 11/06.

Also refer to the guidelines issued by the National Board of Health on prophylactic measures in humans in the event of special kinds of avian influenza, March 2006, available at www.sst.dk (Danish language).

Treatment

Oseltamivir seems to be effective. It is important to initiate treatment as early as possible; the effect of oseltamivir occurring in cases with severe pneumonia is equivocal. Several patients have become resistant during the treatment, probably due to elevated virus replication. The European subtype (clade 2) is susceptible to oseltamivir, zanamivir and amantadin; combination therapy may be an option. Glucocorticoid treatment has been associated with increased mortality.

Travels to avian influenza areas

No infection has been observed in travellers to areas with avian influenza and currently there are no restrictions on travels to endemic areas. However, travellers are advised to avoid contact with poultry, e.g. from markets where live animals are sold. There is no risk from eating cooked poultry provided that the meat has been boiled or cooked thoroughly.

Commentary

Avian influenza virus A (H5N1) has

presently spread to the birds of three continents, which has turned it into a panzooty, but still, only a limited number of persons have become infected. Infection has primarily occurred in third world contexts where lacking knowledge or resources have impeded preventive measures. Several vaccines against avian influenza A (H5N1) are currently being tested. Such vaccines may be used if the current risk of human infection increases.

(S. Glismann, Dept. of Epidemiology, L.P. Nielsen, Dept. of Virology)

ORNITHOSIS 2007

Ornithosis (parrot fever, psittacosis) is a zoonosis caused by *Chlamydo-phila* (*C. psittaci*) bacteria. Ornithosis may transfer to humans via inhalation of atomised faeces or secretion, by mouth-to-beak contact, or via contact with the plumage and tissue of infected birds. Infection is primarily by birds kept as pets, e.g. parrots and pigeons (dovecots), but persons with occupational contact with birds are also at risk. Ornithosis typically presents as flu-like symptoms that are frequently accompanied by a dry cough which may co-occur with chest pain and dyspnoea. In some cases the infection causes severe pneumonia and affects additional organs (liver, spleen, heart, etc.).

Notified cases

2007 saw eleven notified ornithosis cases, nine males and two females. The patients were aged between 25 and 75 years. Six patients were admitted to hospital in connection with the infection; one patient died. A possible source of infection was stated for ten patients, all of whom had private flocks of birds including parrots, budgerigars, pigeons, and chickens or had come into contact with birds via other non-occupational activities, including the feeding of wild birds. One private bird keeper, who had 24 parrots, was infected for the third time.

Diagnostics

In all cases the diagnosis was confirmed by PCR-testing. For further information on ornithosis diagnostics, please see EPI-NEWS 10/06. Human cases are notifiable on form 1515; any possibly infected birds should be tested in connection with the investigation of transmission modes. (C. Kjelsø, K. Mølbak, Dept. of Epidemiology)

Individually notifiable diseases

Number of notifications received in the Department of Epidemiology, SSI (2008 figures are preliminary)

Table 1	Week 4 2008	Cum. 2008 ¹⁾	Cum. 2007 ¹⁾
AIDS	1	4	5
Anthrax	0	0	0
Botulism	0	0	0
Cholera	0	0	0
Creutzfeldt-Jakob	1	5	2
Diphtheria	0	0	0
Food-borne diseases	5	17	28
of these, infected abroad	1	4	5
Gonorrhoea	0	13	27
Haemorrhagic fever	0	0	0
Hepatitis A	0	5	3
of these, infected abroad	0	1	2
Hepatitis B (acute)	0	0	0
Hepatitis B (chronic)	1	8	21
Hepatitis C (acute)	0	0	1
Hepatitis C (chronic)	5	17	31
HIV	5	17	25
Legionella pneumonia	2	10	9
of these, infected abroad	0	4	2
Leprosy	0	0	0
Leptospirosis	0	0	3
Measles	1	1	0
Meningococcal disease	2	3	5
of these, group B	2	2	0
of these, group C	0	1	4
of these, unspec. + other	0	0	1
Mumps	0	1	1
Neuroborreliosis	2	8	12
Ornithosis	1	1	0
Pertussis (children < 2 years)	3	9	8
Plague	0	0	0
Polio	0	0	0
Purulent meningitis			
Haemophilus influenzae	0	0	0
Listeria monocytogenes	0	0	4
Streptococcus pneumoniae	1	8	8
Other aethiology	4	7	2
Unknown aethiology	1	1	0
Under registration	3	10	-
Rabies	0	0	0
Rubella (congenital)	0	0	0
Rubella (during pregnancy)	0	0	0
Shigellosis	2	7	2
of these, infected abroad	1	5	0
Syphilis	0	6	9
Tetanus	0	0	0
Tuberculosis	1	21	27
Typhoid/paratyphoid fever	0	1	1
of these, infected abroad	0	1	1
Typhus exanthematicus	0	0	0
VTEC/HUS	2	10	3
of these, infected abroad	0	1	2

¹⁾ Cumulative number 2008 and in corresponding period 2007

Selected laboratory diagnosed infections

Number of specimens, isolates, and/or notifications received in SSI laboratories

Table 2	Week 4 2008	Cum. 2008 ²⁾	Cum. 2007 ²⁾
Bordetella pertussis (all ages)	3	11	16
Gonococci	9	25	33
of these, females	0	2	5
of these, males	9	23	28
Listeria monocytogenes	0	1	9
Mycoplasma pneumoniae			
Resp. specimens ³⁾	4	14	101
Serum specimens ⁴⁾	5	16	58
Streptococci ⁵⁾			
Group A streptococci	8	18	10
Group B streptococci	0	8	8
Group C streptococci	2	3	1
Group G streptococci	3	15	10
S. pneumoniae	26	153	115
Table 3	Week 2 2008	Cum. 2008 ²⁾	Cum. 2007 ²⁾
MRSA	4	30	-
Pathogenic int. bacteria ⁶⁾			
Campylobacter	33	46	101
S. Enteritidis	10	11	5
S. Typhimurium	5	8	3
Other zoon. salmonella	23	26	23
Yersinia enterocolitica	3	4	7
Verocytotoxin- producing E. coli	2	2	4
Enteropathogenic E. coli	4	5	7
Enterotoxigenic E. coli	4	5	3

²⁾ Cumulative number 2008 and in corresponding period 2007

³⁾ Resp. specimens with positive PCR

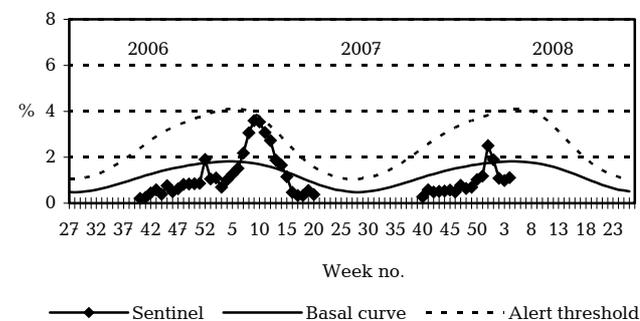
⁴⁾ Serum specimens with pos. complement fixation test

⁵⁾ Isolated in blood or spinal fluid

⁶⁾ See also www.germ.dk

Sentinel surveillance of the influenza activity

Weekly percentage of consultations, 2006/2007/2008



Sentinel: Influenza consultations (as percentage of total consultations)

Basal curve: Expected frequency of consultations under non-epidemic conditions

Alert threshold: Possible incipient epidemic

30 January 2008