

## SHORT COMMUNICATION

**Diseases transmitted from animals to humans – the ever-lasting challenge for medicine**

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Zoonoses are ancient problem of the mankind (plague, rabies, murine typhus etc.). Recently, a new problem — avian influenza — emerged and was recognized. Till now, the pathogenic agents causing this disease belong to the influenza type A viruses possessing haemagglutinins H5, H7 and H9. The subtypes H5 and H7 viruses exist as high pathogenic and low pathogenic ones. Their main natural hosts are migratory birds, especially ducks, which can transmit the infection to the poultry. The migratory birds are mostly infected with low pathogenic viruses which can change in the poultry into high pathogenic agents and also be life-threatening for men.

The for human beings most dangerous avian viruses belong to the subtype H5N1. The history of human diseases caused by agents of this subtype began in Hong Kong in 1997 (18 diseased persons, out of them 6 fatal cases). Since, between December 2003 and January 2006, other 147 cases and 75 deaths occurred (the overall case-fatality rate being approximately 50 %) in some countries of the South – East Asia, China and Turkey. Up to this time, no inter-human transmission of the H5N1 virus has been proved.

Recently, the presence of this virus in migratory birds and poultry was also detected in Russia, Mongolia, Rumania and Ukraine.

The threat of the pandemic occurrence of avian influenza in humans may only arise if the avian strain acquires new properties enabling its human-to-human transmission. This can be achieved either by the reassortment of one or more viral genomic segments in the case of simultaneous infection of pigs or men by the avian and human viruses, or by the adaption (mutation) of the avian virus. The time of the rise of pandemic viral strain and its biological properties cannot be foreseen. The preparation of an effective vaccine against such a pandemic strain will be only possible after its emergence and isolation. Till then, there are newer antiviral drugs as oseltamivir (Tamiflu) and zanamivir (Relenza) at disposal.

Nowadays, the most effective preventive measures are avoiding all direct contact with sick or dead poultry, swans and migratory birds; careful hand-washing especially when preparing raw poultry for cooking; thorough cooking all foods from poultry including eggs and poultry blood.

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This work was presented on the Society of the Slovak Physicians in Slovak Medical Society in Bratislava on the January 30, 2006.