Letter

A case with non-typical clinical course of H7N9 avian influenza

To the editor: H7N9 avian influenza is a new subtype to be seen in the world. An 87-year-old male, had decreased food appetite for half a month with fever and dyspnoea for 10 days.[1] The patient began to feel poor appetite and loss of strength from April 4, 2013. At that time, his body temperature was normal and he had no cough, sputum or dyspnoea. On April 6, examination at the referring hospital revealed that his body temperature was 37°C, white blood count (WBC) 5.57×10^9/L, neutrophile granulocyte (N%) 53.5%. Inflammation of the lower lobe of the right lung was seen by chest CT. He was then treated with cefuroxime against possible bacterial infection for 3 days. On the night of April 9 he showed obviously increased dyspnoea after activity and had a body temperature of 38.4°C. These symptoms became much more serious after another day. On April 10, chest CT was conducted again and the result indicated that large areas were infiltrated with inflammatory cells in both lungs. Then he was treated with oseltamivir anti-viral and levofloxacin anti-bacterial agents. At the same time, his respiratory secretions were sent to Shanghai Municipal Center for Disease Control and Prevention for nucleic acid tests and tested H7N9 positive. He was admitted to ICU in the referring hospital at once to begin assisted breathing by noninvasive mechanical ventilation, and was treated with oseltamivir (75 mg bid), cefoperazone, moxifloxacin, and methylprednisolone (40 mg/d) until he was transferred to our hospital on April 19, 2013. On physical examination: body temperature 36°C, pulse 101/min, respiratory rates 25/min, blood pressure 165/99 mmHg, semi-consciousness, percussion dullness and weak breath sounds in the lower lobes of the both lungs, some moist rales in the whole lung, heart and abdomen (–). The results of the patient's laboratory examinations are shown in Table 1. Chest CT images are shown in Figure 1. We continued anti-viral treatment (oseltamivir 150 mg bid), anti-infection treatment (piperacillin and tazobactam), symptomatic and supportive treatments (immune human serum globulin, amino acids, and human serum albumin), plus noninvasive mechanical ventilation. But eventually, because of the disease aggravation and his poor physical condition, he died on April 21, 2013.

Table 1. Laboratory test results

Parameters	On the day of admission (April 19)	The first day after admission (April 20)	The second day after admission (April 21)
WBC ($\times10^9$/L)	27.42	26.41	26.91
Neutrophils (%)	92.70	92.20	93.30
Lymphocytes (%)	2.50	2.70	2.50
Neutrophil ($\times10^9$/L)	25.41	24.37	25.13
Lymphocyte ($\times10^9$/L)	0.69	0.71	0.67
Hb (g/L)	80.00	83.00	81.00
C-reactive protein (mg/L)	128.00	186.00	194.00
ALT (U/L)	27.00	23.00	163.00
AST (U/L)	21.00	19.00	335.00
TBIL (μmol/L)	15.10	15.90	16.00
Urea (mmol/L)	5.99	6.43	9.63
Cr (μmol/L)	88.2	98.40	110.50
H7N9 nucleic acid test	Negative	Negative	Negative
CD4 (cell/μl)	278		
CD4 (%)	43		

WBC: white blood count. Hb: hemoglobin. ALT: alanine transaminase. AST: aspartate transaminase. TBIL: total bilirubin. Cr: creatinine.

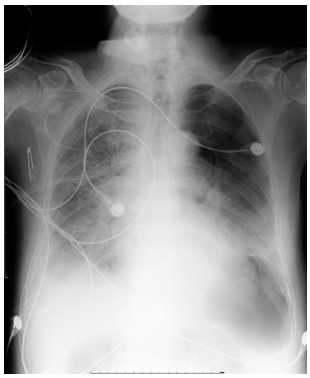

Figure 1. Chest X-ray on the day of admission to Shanghai Public Health Clinical Center (April 19, 2013): inflammation in both lungs.

This patient was old, male, reporting with loss of appetite and strength as the main features but no fever, cough, or expectoration. Obvious shortness of breath 4 days after onset, prompted the chest CT that revealed inflammation of both lungs and a much more serious condition than expected. Fever began emerging at this time, but there was still no cough or expectoration. Flu infection was not immediately suspected. Clinicians often tend to ignore the etiology screening for such patients. Therefore in the early days after onset, antiviral drugs may not be given, raising the risk of death as the infection progresses.

This case history serves to remind us that we need timely use of antiviral treatment, even for the patients whose clinical manifestations are not typical but whose lung inflammation may be developing rapidly.[1,2] Careful clinical observation needs to be carried out so that appropriate treatment can begin as early as possible and progression culminating in death is minimized.[3]

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