Reviewer's report

Title: A case report of avian influenza H7N9 killing a young doctor in Shanghai, China

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Reviewer: Beatrix Kapusinszky

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Dear Editor,

The paper by Hao Pan and co-authors “A case report of avian influenza H7N9 killing a young doctor in Shanghai, China” investigates the possible transmission routes in lethal avian influenza virus (H7N9) case of health care worker, by screening of close contacts and the environment.

The paper has to be improved with major as well as minor modifications to meet journal criteria before being accepted for publication.

Major Compulsory Revisions

1. Results on health care workers (HCW) screening are inconsistent. Is there any overlap between HCW blood samples tested by rRt-PCR and HAG?
   a. Ten HCW samples were screened for H7N9 by rRt-PCR. Indicate the collection date, line 140.
   b. Additional 35 close contacts, including 26 HCW were tested with HAG. Indicate the collection date, line 149.
   c. It has to be emphasized, that there is no evidence that COPD-1 and SP-1 had avian influenza, since no tests were performed, line 155.

2. The serotiter (blood pair HAG test) of Y and Z doctors should have been performed at a later time point from a second blood sample in order to see, if there is an elevation in HAG serotiter, confirming the acute infection. Also, it would have been extremely important to get rRt-PCR results of their blood samples, since they were withdrawn 3 days after contact with Dr. X for doctor Z and 4 days after the X’s onset of illness in case of doctor Y, in order to detect possible active viremia. Blood samples were taken too early for serology, therefore the link between their seropositivity and exposure with X seems just a speculation. They (Z and Y) might have been exposed at an earlier time point from different source; therefore the conclusion on possible human-to-human transmission is based on a very weak experimental data, line 227.

3. Important to mention when explaining phylogenetic relationships, that: HA, NA, PB2, NP virus genes from surgeon X are clustering together with an environmental sample A/environment/ShanghaiPD-JZ-012014, originating from
LMP-B. Please define the exact source and GenBank Accession numbers, line 174. Also, this material was collected in current study and suggests a potential infectious source for X; therefore, it is unclear why authors excluded this possibility from their Discussion, lines: 219-222.

4. Avian influenza virus from patient X was deposited in the Genbank and compared to influenza viruses from two live poultry markets and other human cases from the past. Were these cases lethal as well, what are they GenBank Accession numbers? Lines: 174, 178.

Minor revisions:
1. Provide the reference for rRt-PCR, line 119.
2. The 16 environmental samples collected from ICU, what are they exactly? Line 158.
3. The abbreviations have to be consistent, like SH-PDH and PDH indicates the same thing, lines: 87, 96. LMP, HCW has to be explained in the abstract, lines: 66 and 60. Unnecessary abbreviations, if they are not repeating in the text one more time, has to be removed (example U-ER, line: 123), as they make the text congested and hard to read.
4. For clarity, PPE (Personal Protective Equipment), has to be used all other the text instead of personal protective measures (PPMs).
5. It needs noting, that prophylactic (per-exposure ) treatment of health care workers with oseltamivir or other available drugs, during epidemics, provides better protection than post exposure measures., line 236.

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests.