Awareness of bird flu amongst young college students.

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Abstract

Objective: To assess the awareness among students about the disease, their attitude during the outbreak, along with their perceptions about treatment, and severity of disease.

Methods: A cross sectional study was conducted among 220 intermediate students .The data was collected through a self filled questionnaire after taking verbal consent. The variables included in this study were age, gender and department (medical/non-medical).

Results: A total of 220 students participated with mean age of 17± 1 year. There were 132 (61%) males and 84 (39%) females. The students were divided into pre-medical 110(50%) and non-premedical 110 (50%).About 211 (96%) students said that they had heard about bird flu but only 86 (39%) correctly identified it as a disease of birds and humans both. One hundred and fifty-four (70%) participants said that virus causes it and the most common source of knowledge was media (T.V) by 153 (70%) followed by newspaper 113 (51%) respondents. Flu like symptoms were identified by 77 (35%) and 160 (73%) considered birds to human as the most likely route of transmission. Regarding vaccine, 133 (70%) replied that it is not available and 80 (41%) said that there is a treatment for the disease. About 143 (73%) thought that it is life-threatening.

According to 105(48%) the suitable preventive measure taken by the government would be to kill susceptible chickens.

Conclusion: The awareness regarding bird flu was quite low among students. As bird flu is a world wide public health problem therefore increasing awareness would be a solution to avoid its spread and complications (JPMA 58:466;2008).

Introduction

Avian Influenza is an infectious disease of birds caused by Influenza A (H5N1) virus, affecting mostly poultry animals, and pigs.[1-3] The first reported case of Avian Influenza was reported in Hong Kong in 1997.[3,4]

The world has so far seen three pandemics of influenza caused by three different virus strains. In 1918 the Spanish Influenza due to the H1N1 virus, in 1957 the Asian influenza due to the H2N2 virus and the last pandemic Hong Kong Influenza due to the H2N3 virus in 1968.[1]

In 2003, a change in the strain of the virus into a novel Z strain was observed with human to human transmission which was contrary to the earlier belief that avian influenza virus could not affect humans.[3,5] Hong Kong isolated the first human case due to H5N1 in 1997.[1,6] Since then WHO has reported that avian flu has spread to a number of countries with laboratory-confirmed human cases of 327 and 199 deaths till 31st August 2007.[7] It was observed that H5N1 virus is more similar to the 1918 pandemic so therefore in 2005 WHO announced that the world is close to another influenza pandemic.[8,9]

When sustained human-to-human transmission of H5N1 becomes a reality then the world could be dealing with a disease that can spread everywhere.

Preparation for protection against this new influenza requires global influenza surveillance and development of practical strategies for containing an outbreak. These strategies include increasing general awareness and knowledge about prevention of this disease.

The objective of this study was to assess the awareness among students about the disease, their attitude during the outbreak, along with their perceptions about treatment, and severity of disease.

Methods

This was a cross-sectional survey conducted among first year intermediate-college students. The data was collected from four different colleges in Karachi during May - July 2007. Through convenience sampling the data was collected on a sample of 220 students divided into pre-medical and non-pre-medical group through self filled questionnaires. Verbal consent was taken from the students. The research was reviewed by the ethical committee of Ziauddin University. Variables assessed were age, gender, pre-medical/non-pre-medical. The data analysis was done using SPSS version 11.0.

Results

The total number of students included were 220 with mean age of 17 $\pm$ 1 year. There were 132 (61%) males and 84 (39%) females. The fathers of 132 (82%) students were graduates or above, 99 (52%) had their own business while the rest 92 (48%) were related to profession/job. Mothers of 96 (60%) were graduates or above and only 26 (15%) were

Table 1. Knowledge about bird flu (n=220).

Heard about Bird flu	n	%
Yes	211	96%
Knowledge about bird flu*		
Disease of Birds	104	47%
Disease of humans	9	4%
Disease of birds and human both	86	39%
Don't know	21	10%
Caused by		
Bacteria	25	11%
Virus	154	70%
Parasite	10	5%
Fungi	14	6%
Don't know	17	8%
Source of information*		
Newspaper	113	51%
Internet	49	22%
People	66	30%
T.V	153	70%
Signs and Symptoms*		
Cough	44	20%
Fever	117	53%
Nausea\vomiting	33	15%
Flu	77	35%
Dizziness\Blurred vision	33	15%
Breathing Difficulty	43	20%
Stomach pain	42	19%
Nose bleed	41	19%
Routes*		
Birds to Humans	160	73%
Birds to Birds	82	37%
Human to Human	25	11%
Human to Birds	12	5%
Carrier of Bird Flu*		
Chicken	123	56%
Wild Ducks	38	17%
Parrots	18	8%
Turkey	27	12%
Transmission of bird flu*		
Handling infected birds	70	32%
Consuming infected bird	131	60%
Infection through air	58	26%

* denotes that more than one option could be marked, thus does not add up to 220.

Table 2. Opinion and knowledge about treatment and prevention: n= 220.

Vaccine available	56	26%
Treatment available	80	36%
Can cause death	143	65%
Cases reported in chicken in Pakistan	143	65%
No case reported in humans in Pakistan	65	30%
Travel restriction	69	31%
Life style modification*		
Minimize intake of chicken	88	40%
Eat properly cooked chicken	137	63%
Reduce exposure to poultry	37	17%
Preventive measure that should be taken*		
Provide vaccination to susceptible humans	87	40%
Provide vaccination to chickens	105	48%
Chlorination of water	27	12%
Arrange awareness programs	87	40%
Use of frozen poultry	25	11%
Killing of infected birds	66	30%
Severity rating		
1 Least dangerous	11	13%
2 Mildly dangerous	27	15%
3 Moderately dangerous	71	30%
4 Severely dangerous	34	19%
5 Fatal	39	21%

* denotes that more than one option could be marked, thus does not add up to 220.

working. The students were divided into pre-medical 110 (50%) and non-premedical 110 (50%).

About 211 (96%) students said that they had heard about bird flu but only 86 (39%) correctly identified it as a disease of birds and humans both. One hundred and fifty-four (70%) participants said that virus causes it and the most common source of knowledge was media (T.V) by 153 (70%) followed by newspaper 113 (51%) respondents. Flu like symptoms were identified by 77 (35%) and 160 (73%) considered birds to human as the most likely route of transmission.

Chickens were identified by 123 (56%) as the most likely carrier of bird flu and 70 (32%) said that handling birds was the commonest mode of transmission. Regarding vaccine, 133 (70%) replied that it is not available and 80 (41%) said that there is a treatment for the disease. About 143 (73%) thought that it is life-threatening.

According to 143 (73%) students, cases of bird flu among chickens were reported in Pakistan while 128 (65%) believed human cases existed in Pakistan as of July 2007. Eating properly cooked chicken was considered by 137 (62.5%) as the preferred life style modification adopted during the outbreak. According to 105 (48%) the suitable preventive measure taken by the government would be to kill susceptible chickens. Travel restrictions were deemed necessary by 69 (36%) students. In severity rating scaling from 1-5 (where 1= least severe and 5= most severe), 71 (30%) rated bird flu at a level of 3 (moderately dangerous).

Discussion

Avian influenza viruses circulate among birds worldwide.[1] In 2003, infection in human beings by this virus was observed so therefore it is considered as a disease of birds and humans both.[3,5] which is caused by Influenza A (H5N1) virus.[1-3] Majority, more than two-thirds of the people were able to identify both facts correctly.

In a study done in Saudi Arabia regarding knowledge and concern of bird flu, 70% of the participants reported that media (T.V\ radio) was their source of knowledge.[10] Similarly in this study T.V was recognized as the most common source for knowledge.

In humans, the clinical spectrum of influenza (H5N1) varies from milder illness, sub clinical infection to atypical presentation in the form of encephalopathy or gastroenteritis.[11-14] Most patients have an initial common complaint of high grade fever and influenza-like symptoms.[15] Less common reported symptoms are diarrhoea, vomiting, abdominal pain and bleeding from nose and gums.[16]

For influenza A (H5N1) infections, evidence is consistent with bird-to-human and bird to bird transmission. Human-to-human transmission of H5N1 exists but has not been reported in Pakistan as of April 2007.[1,17] In this study, majority identified bird to human as the only route of infection indicating a lack of knowledge regarding other modes of transmission.

Direct contact with infected poultry or with surfaces and objects contaminated by their faeces, is considered the main route of human infection.[1]

More than two thirds of the participants thought that consuming chicken is the major mode of transmission. Hence this became the common misconception during the outbreak but to date no evidence indicates that anyone has been infected following consumption of properly cooked poultry (cooked > 70^{o} Celsius) or poultry products, even when these foods were contaminated with H5N1 virus.[1,18]

Vaccination is the primary strategy for the prevention of influenza in the community; however, no influenza A (H5) vaccines are currently commercially available for humans. Even for other strains, vaccination may be inadequate during influenza season due to antigenic drift rendering the vaccines less protective. Besides, in the course of a pandemic, vaccine supply is predicted to be inadequate.[19] Majority of the students were aware of the

non-availability of vaccines.

According to WHO Oseltamivir is used for both treatment and prophylaxis of avian influenza.[20] Treatment should be started within 48 hours of occurrence of fever, without waiting for laboratory reports,[17] whereas in this study 59% of the participants reported that there is no treatment.

Avian influenza A (H5N1) results in high death rate amongst infants and young children with case fatality rate of 89% under 15 years of age.[21] Deaths occur at an average of 9 or 10 days after the onset of illness and most patients die of progressive respiratory failure.[17,22,23] Awareness regarding fatality of bird flu was found to be good among the students.

According to WHO, in Pakistan there have been cases reported among chickens but no cases reported among humans. The participants had the impression that cases have also been reported both among humans and chickens. In 2006, Pakistan confirmed the deadly H5N1 strain of avian flu on 28 small poultry farms. But there have been no reports of bird-to-human or human-to-human cases of bird flu in Pakistan at the time of this study.[24]

Life style modifications that were adopted during the outbreak by participants included either eating properly cooked chicken or avoiding consumption. But life style modification recommended by WHO and CDC included avoiding contact with infected or contaminated birds. Handling should be careful and thorough cooking of poultry is recommended. Hands should be washed properly with soap and hot water before and after handling raw poultry. Surfaces in contact with the poultry products should also be cleaned. Raw meat should be kept separate from cooked. Raw eggs should not be consumed. All parts of the poultry should be fully cooked (no "pink" parts) and that eggs, too, should be properly cooked (no "runny" yolks). Travelers should avoid poultry farms, contact with animals in live food markets, and any surfaces that appear to be contaminated with faeces from poultry or other animals.[1, 20]

In Pakistan the poultry farmers were recommended that they should vaccinate chicken stocks every two to three months. They should also maintain bio security and there should be no tree in a 3km radius of a poultry shed. They should be extra careful when adding new bird flocks to the old ones during the outbreak.[24] In this study the students perceptions of prevention were similar.

The Centers for Disease Control and Prevention (CDC) does not recommend any travel restrictions to affected countries presently. CDC advises the travelers to take measures of prevention mentioned above.[25] In this study the participants were of the same opinion.

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