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Original article

Influenza Virus Illness: Dhaka National Medical College Hospital Experience

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Abstract:

Background : Influenza is a contagious respiratory illness caused by influenza virus that infects nose, throat and lungs. A surveillance study is undergoing in Dhaka National Medical College to characterize the clinical features of influenza viral illness. Objective : To recognize the diversity of strain of influenza virus in circulation in this part of country. Methodology : This prospective surveillance study is undergoing from June 2007. Cases are selected from among the patients visiting this hospital with fever and cough. Throat swab and nasal swab specimens are tested for presence of various influenza virus subtypes. Result : Between June 2007 to March 2012 we collected specimen from 1054 patients. Among them 141 (13.4%) were positive for influenza virus. 87 (62%) cases were influenza type A and 54 (30%) were type B. Among the 87 influenza A cases, 15 (17%) were A/H_1, 24 (28%) were A/H_3 and novel A/H_1 (Pandemic H_1N_1) were 48 (55%). None of our cases were H_5 N_1 (Bird-Flu). Conclusion : This study confirms that influenza is prevalent in this region, causing considerable morbidity and hospital care

Introduction:

Influenza is a contagious respiratory illness caused by Influenza virus that infect the nose, throat and lungs. People who have influenza or 'Flu' often feel some or all of the features like fever, chill, cough, sore throat, running or stuffy nose, muscle or bodyaches, headache, fatigue & vomiting. Influenza virus spreads mainly by droplets made when people with flu cough, sneeze or talk. Complications of flu can include bacterial pneumonia, ear infection, sinus infection, dehydration and worsening of co-existing medical conditions like asthma, diabetes, heart disease etc. The Government of Bangladesh, with technical support from the World Health Organisation and the Food and Agricultural Organisation, has developed a national avian influenza and human pandemic influenza preparedness and response plan. As part of this plan, under direct collaboration of ICDDR,B and IEDCR, Mohakhali, Dhaka a surveilance study is underway in Dhaka National Medical College Hospital to characterise the clinical features of influenza viral illness and to recognise the diversity of strain of influenza virus in circulation as part of a nation-wide study in twelve hospitals across the country.

Methodology: Cases were selected from among the patients visiting our hospital outdoor having fever with cough or sore throat (Influenza-like-illness) or those who are hospitalised with cough or difficult breathing. After obtaining written informed consent a throat swab and a nasal swab specimen were collected from each study case and also demographic and clinical informations were recorded. Samples were transported to ICDDR,B where those were tested for presence of influenza virus by real time reverse transcriptase polymerase chain reaction (rRT-PCR . Observational data was analysed by statistical software SPSS.

Results: Between June 2007 to March 2012 we collected specimen from 1054 case patients. Among them 141 (13.4%) were positive for Influenza (Table-I). Both the strains of influenza A & B were detected during this surveillance. 87

(62%) case were influenza type A and 54 (30%) case were type B (Table-II). Among the 87 Influenza A cases, 15 (17%) case were A/H_1, 24 (28%) cases were A/H_3 and novel A/H_1 (Pandemic H_1N_1) were 48 (55%) case (Table-III). None of our cases were Influenza A/H_5 (H_5N_1-Bird-flu).

Table-I

Description	No.	Percent
Sample collected	1054	
Influenza positive	141	13.4%

Table-II
Influenza Types

Description	No.	Percent
Influenza A	87	62%
Influenza B	54	38%

Table-III
Influenza A Sub-Types

Description	No.	Percent
Influenza A/H_1	15	17%
Influenza A/H_3	24	28%
Influenza A/H_5	0	0
Influenza (H_1N_1) 2009	48	55%

Discussion:: This study revealed that influenza virus is prevalent in our country as a causative agent of febrile illness and acute respiratory tract infection. In this study it was found that both of strains of influenza virus, type A and Type B, which are circulating in the Asian countries are present in Bangladesh[1,2]. The higher virulence of influenza A/H_3 over influenza A/H_1 and influenza B is well established in studies from temperate regions[3]. Influenza may be introduced to our country through air-ports or land-port and then flare up during appropriate environmental conditions[4]. In terms of spatial spread, it is possible that influenza spread rapidly between Chittagong and Dhaka because of the frequent travel between these two densely populated cities; similar pattern of spread is found in USA, Brazil and Japan[5]. Our study did not identify human infection with InfluenzaA/H_5 (Bird-flu). Although a significant proportion of Bangladeshis do not seek medical care for respiratory illness which means that the vast majorities of febrile and respiratory illness patients (ILI-influenza like illness) escaped over study, we can assume that human infections with A/H_5 virus were not occurring during the study period. The seasonality of human influenza does not coincide with the seasonality of H_5N_1 in poultry in our country, which might reduce the opportunity of reassortment of avian strain with a human strain in Bangladesh[6].

Conclusions:

This study confirms that influenza is prevalent in this region, causing considerable morbidity and hospital care. Further studies are required to explore the epidemiology of influenza in our country to address influenza prevention measures at national level.

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