

Clinical Profile of Adult Swine Flu Patients in A Tertiary Infectious Disease Hospital in Kolkata During the 2014—15 Outbreak

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Abstract

Objective: H1N1 (swine flu) outbreak is a major health problem particularly in patients with co morbid illness. The study was designed to assess various clinical presentations and outcomes.

Methods: This retrospective study was done in a tertiary Infectious Disease Hospital (ID & BG Hospital) in Kolkata among H1N1 infected patients during recent outbreak December 2014 to March 2015. Adult cases above age 18 years were included in this study. Clinical presentations, laboratory parameters and outcome were assessed.

Results: Out of 96 adult cases majority were male (53.12%). Most commonly affected age group was 18 to 27 years (33.33%). About 48.95% cases were associated with co morbid illness. Fever was the major presenting symptom (93.75%) followed by sore throat and shortness of breath (79.16%). Leukopenia and pneumonitis were important abnormalities (10.41%). Among the cases 16.66% patients were treated in critical care unit and 5 patients (5.21%) succumbed to death in spite of best effort.

Conclusion: Patients presenting with Influenza Like Illness (ILI) should be investigated for H1N1 infection according to guidelines. Strong clinical suspicion, isolation, early diagnosis and prompt treatment are important for patients and the community.

Keywords: Swine Flu, Clinical presentations, Complications

I. Introduction

Influenza is a common illness characterised by fever, cough, sore throat, respiratory distress, headache, bodyache, myalgia, malaise etc. Spectrum of illness may be mild to severe. The H1N1 infection (swine flu) pandemic of 2009 is still ongoing as of March 2015^[1]. Pathogenicity of H1N1 influenza differs from seasonal influenza in some aspects. It affects lower respiratory tract and can cause severe pneumonia, particularly in children and young adults^[2]. In late 2014 to early 2015, H1N1 (swine flu) outbreak created a great panic in India. During that outbreak, the virus had a change in its amino acid sequences linked to enhance virulence^[3]. The most affected states in India were Gujrat, Rajasthan, Delhi, Maharashtra, Madhya Pradesh, Telengana, Karnataka and West Bengal. During that outbreak total number of cases crossed 30,000 with a death toll near about 2000^[4,5].

The virus spreads by droplet infection or droplet nuclei during sneezing, coughing or talking and average incubation period is 18 to 72 hours^[6]. Illness starts with systemic symptoms like fever, malaise, myalgia, sore throat, cough etc and improves within 7 days. Chronic pulmonary or cardiac disease, immunosuppression, diabetes, renal dysfunction, haemoglobinopathies, pregnancy, extremes of age are the important risk factors^[7]. Pneumonia is the most significant complication. It may be viral, secondary bacterial or mixed. Other complications like myocarditis, encephalitis, polyneuropathy, myositis, hepatitis Reye's syndrome may also occur.

II. Methods and materials

This study was done in an Infectious Disease Hospital in Kolkata during the period of December 2014 to March 2015. Ethical clearance was taken from the Institute. Cases of ILI (influenza like illness) of category B & C were investigated for Swine Flu (H1N1) infection by RTPCR, performed by National Institute of Cholera and Enteric Diseases, Kolkata^[8]. Confirmed cases above 18 years of age were included in this study. Relevant data were collected from patients' bed head tickets. Information regarding clinical presentations, investigations, course, outcome, comorbid illness, age and sex distribution, race, addiction, socioeconomic status, residence were analyzed. Socioeconomic status was judged by APL/BPL (above and below poverty line) card issued by

Government authority. Patients of non municipality area were designated as rural and of municipality area as urban.

III. Results

During the outbreak of Swine Flu (2014—2015) total 96 confirmed adult patients were admitted in our Institute. Among them 51(53.12%) were male and 45(46.87%) were female. Total 16 patients (16.66%) were treated at critical care unit (8 male, 8 female). Total number of death was 5(5.21%, male 3, female 2). Socioeconomically, 70(72.91%) were above poverty level and 26(27.08%) below poverty level. About 59(61.65%) cases came from urban population and 37(38.54%) of rural origin. Majority of the cases were Hindu (93.75%, n=90). Most commonly affected age group was 18 to 27 years (n=32, 33.33%). Occupation wise most affected people were those working outside (67.70%, n=65) followed by housewives (20.83%, n=20), students (10.41%, n=10). One doctor was infected. Total 47(48.95%) cases were associated with co morbid illness, among them 12(12.5%) had more than one. Diabetes (15.95%, n=15), chronic obstructive pulmonary disease (11.45%, n=11), hypertension(10.41%, n=10) were common co-morbidities. Fever was associated with 93.75% cases followed by cough (79.16%), sore throat(46.87%), shortness of breath(46.87%). One patient presented with influenza like illness with right 7th cranial nerve palsy(negative for Herpes and Varicella Zoster antibody IgM)(Pic.1).

Two male patients were smoker (0.02%), five were alcoholic (5.2%). One (1.04%) had history of contact with swine flu cases. All 5 deaths were of urban origin, 2 were above 67 years, 2 were associated with co morbid illness (rheumatic heart disease with cirrhosis of liver, chronic obstructive pulmonary disease with diabetes mellitus). Laboratory parameters showed leucopenia in 10 cases (10.41%), elevated liver enzymes in 6 cases (6.25%), elevated blood urea nitrogen in 3 cases (3.12%), thrombocytopenia in 2 cases (2.08%). Radiological evidences of pneumonia were detected in 10 (10.41%) cases of which 7 were unilateral and 3 were bilateral.

IV. Discussion

During the period of 2014—2015, Swine Flu was a major health problem in India. More than two thousand deaths occurred during that period. Total 96 adult cases were admitted in our Institute. Male to female ratio was 1.3 : 1, APL to BPL ratio was 2.61 : 1. These findings collaborates with similar study during 2009 epidemic^[9]. Majority of patients were of urban origin (urban to rural ratio was 1.59 : 1) and Hindu(93.75%). Only one health personal (doctor) was infected. Bassetti M et al found chronic lung disease (34%), BMI>30 (25%), immunosuppression (21%), cerebrovascular disease (21%), central nervous system disorder (16%), chronic kidney disease (11%), diabetes mellitus (99%) as major co- morbid illness for bad prognosis.⁽¹⁰⁾ We found diabetes (15.95%), chronic lung disease (11.45%), hypertension (10.41%) as major comorbid illness. Hypothyroidism, chronic liver disease and ischemic heart disease was associated with 2.08% cases. Total 48.95% cases had comorbid illness. Common presenting symptoms were fever (93.75%), cough (83.33%), sore throat (46.87%), shortness of breath (46.87%). Bhatt KN et al documented H1N1 cases associated with 37.60% co morbid illness. Fever (98.60%), cough (94.15%) were the major presenting symptoms^[11]. Most commonly affected age group was 18 to 27 years and only one case had known history of contact. Nancy F et al noticed in their study that median age was 21 years. Fever was universal symptoms followed by cough (96%), myalgia (57%), sore throat(51%), 70% had history of contact^[12]. In our study only two cases (2.08%) were smoker and one patient had right 7th cranial nerve palsy. Common laboratory abnormalities were leucopenia (10.41%), thrombocytopenia (2.08%), elevated liver enzymes (6.25%), elevated blood urea nitrogen (3.12%). 10.4% of cases had significant radiological changes in lung parenchyma. Only 5 cases (5.20%) were put on ventilator. Meheta AA et al observed leucopenia in 4% cases, radiological changes of lungs in 17.77% cases and 6.8% patients needed ventilatory support^[13]. In our study mortality rate was 5.20%.

V. Conclusion

Swine Flu outbreak is an important health problem in the community. Co morbid ailments are associated with poor outcome. Early diagnosis, isolation and prompt treatments are of utmost importance.

Acknowledgement

Prof. U. K. Bhadra (Principal), Prof. S. P. Mitra (Vice Principal) and record section of Infectious Disease Hospital, Kolkata.

Conflict of interest: nil

Table:1 Major symptoms and investigation parameters

Features	No. of cases	Percentage
Fever	90	93.75
Cough	76	79.16
Sore throat, rhinorrhoea	45	46.87
Shortness of breath	45	46.87
Nausea, vomiting	35	36.45
Mayalgia	33	34.37
Headache	30	31.25
Diarrhoea	20	20.83
Headache	19	19.79
Leukopenia	10	10.41
Thrombocytopenia	02	02.08
Elevated liver enzymes	06	06.25
Elevated BUN	03	03.12

Table: 2 Co-morbid illness during presentation

Disease	No. of cases	Percentage
Diabetes	15	15.62
Chronic lung disease	11	11.45
Hypertension	10	10.41
Hypothyroid	02	02.08
Chronic liver disease	02	02.08
Ischemic heart disease	02	02.08
Rheumatic heart disease	01	01.04
Down's syndrome	01	01.04

Pic.1: Bell's phenomenon



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To
The Editor
Journal of Dental and Medical Sciences (JDMS)
Subject : CLINICAL PROFIL OF ADULT SWINE FLU PATIENTS IN A TERTIARY INFECTIOUS DISEASE HOSPITAL IN KOLKATA DURING THE 2014 – 2015 OUTBREAK.

Respected Sir,
This is for kind information that we have studied the CLINICAL PROFIL OF ADULT SWINE FLU PATIENTS IN A TERTIARY INFECTIOUS DISEASE HOSPITAL IN KOLKATA DURING THE 2014 – 2015 OUTBREAK.

We want to publish our studies through your journal.

We shall be highly obliged if you kindly consider our application & publish our study through your well circulated journal.

Thanking you.

Yours faithfully

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To,
The Principal & Chairperson,
Ethical Committee,
I.D. & M. Hospital,
Kolkata 700010.

(Through proper channel)

Sub: Ethical approval for the retrospective study entitled as "CLINICAL PROFILE OF ADULT SWINE FLU PATIENTS IN A TERTIARY INFECTIOUS DISEASE HOSPITAL IN KOLKATA DURING THE 2014-2015 OUTBREAK."

Respected Sir,

With due respect, this is to inform you that, we, the undersigned, want to conduct a hospital based, retrospective study as mentioned above in the Department of Medicine in your Institution. We earnestly request you for ethical permission of the above mentioned research proposal.

Date: *30/8/15*

Thanking You,

Your sincerely,
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