

Research Article

Clinical profile, morbidity and mortality among swine flu (H1N1) infected patients: 2015 Gwalior, Madhya Pradesh pandemic, India

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ABSTRACT

Background: Influenza is known to cause annual seasonal epidemics in Asian subcontinent. Our study assessed the clinical profile, factors influencing the response, prognosis and outcome in H1N1 positive patients during February-March 2015. We aimed to understand the epidemiology and patterns of the disease so that the high risks groups could be identified.

Methods: Medical records of the patients who were admitted during Feb-March 2015, as a suspected case to the swine flu ward of J A Hospital and G R Medical College, Gwalior, India were manually retrieved and retrospectively studied. H1N1 positive patients, who were diagnosed clinically and confirmed by RT-PCR method, were included for analysis.

Results: Out of 208 patients were admitted for suspicion of swine flu influenza and underwent testing out of which 88 (42.30%) were found to be positive for H1N1. Most common (37.40%) affected age group was 20-30 years. Females were more involved (62.5%), out of which 20% were antenatal. The common presenting symptoms were cough, fever, breathlessness. Overall case fatality ratio was 4.45%.

Conclusions: Patients with influenza like illness should not panic as many of them become negative for H1N1. In our area prevalence of H1N1 was high in young and females. Most of the patients recovered with symptomatic treatment and oseltamivir therapy. Proper prevention steps, personal hygiene and admission to designated swine flu ward can be helpful in preventing the spread in the community.

Keywords: Influenza infection, H1N1, Swine flu

INTRODUCTION

The H1N1 is a novel strain of *Influenza A* virus that evolved by genetic reassortment.¹ The WHO declared H1N1 as a pandemic on 11th June 2009.¹ Swine influenza A virus can be transmitted to humans either via contact with infected pigs or environmental contamination with some influenza virus.²

In India, on May 16, 2009 first confirmed case of H1N1 was found in Hyderabad. By July 2010, a total 34,669 confirmed cases were reported leading to death of 1692 patients.³

Symptoms like chills, sore throat, fever, cough, severe headache, muscle pains, weakness and fatigue are the usual presenting complaints. In more serious cases, H1N1 causes pneumonia (can be fatal) particularly in the young and the elderly.⁴

Patients who are having other co-morbid conditions like asthma, neurological disorder, diabetes, immunosuppression, cardiovascular disorder, chronic renal disorder and chronic obstructive pulmonary disease are more susceptible for getting H1N1 infection.⁵

METHODS

We retrospectively studied all suspected as well as confirmed cases of swine flu who were admitted to the swine flu ward of J A Hospital and G R Medical College, Gwalior, India during February - March 2015.

The test for H1N1 was done from Defence Research & Development Establishment (DRDE), Gwalior. The H1N1 positive patients were included in the study for analysis. The data was collated and analysed.

Data obtained was analyzed for age, gender, location, duration of admission, symptoms, status of patient on admission and the final outcome. The effect of presence of co morbidities and pregnancy on outcome was studied.

RESULTS

Our study assessed the clinical profile, factors influencing the response, prognosis and outcome in H1N1 positive patients during February- March 2015. We aimed to understand the epidemiology and patterns of the disease so that the high risks groups could be identified.

A total of 208 patients who presented with symptoms and signs suggestive of influenza like illness were admitted to the separate Swine Flu ward. Out of these 208 patients, 88 (42.30%) patients were found to be positive for H1N1 by RT-PCR from Defence Research and Development Establishment, Gwalior.

Table 1: Distribution of patients characteristic.

Parameters	No of patients	Percentage (%)
Age (years)	< 20	6.81
	20 -30	37.5
	31-40	25
	41-50	15.90
	51-60	10.22
	>60	4.54
Gender	Male	37.50
	Female	62.50
Place	Gwalior	59.09
	Bhind	12.5
	Dabra	3.40
	Datia	5.68
	Jhansi	2.27
	Morena	4.54
	Shivpuri	3.40
	Tikamgar	2.27
	Others	5.68

Distribution of 88 H1N1 positive patients according to age showed that patients age range from 5 to 75 years with mean age of 35.00 ± 13.36 years. Most of the patients 33 (37.40%) were from the age group of 20-30. Table 1

shows the distribution of different patient's characteristics.

In present study, females were more affected by swine flu (male: female ratio was 3:5).

Status of patients on admission showed that majority of patients (75%) patients were stable at the time of admission and only 22 (25%) patients were critical.

The mean duration of stay was 1.880 ± 1.2 days. A total 42 (47.72%) patients stayed for ≥ 2 days in the hospital and 45 (51.13%) patients stayed for < 2 days ($p > 0.05$).

The most common presenting symptom was cough in 86 (97.72%) patients followed by fever in 68 (77.27%). 26 (29.54%) patients had breathlessness and 9 (10.22%) patients had sore throat. Only 5 (5.68%) patients complained of body aches.

Out of 88 patients, most of the patients 44 (36.36%) were discharged in stable condition either by the hospital or on request of the patient. 18 (20.45%) patients left against medical advice (LAMA), 10 (11.36%) patients were managed with symptomatic treatment on outdoor basis.

Out of 55 female patients, 36 (65.45%) were having pregnancy of varying duration. Out of these 11 (30.55%) were under regular antenatal care whereas 25 (69.45%) were not having regular antenatal checkups.

Out of total 88 Influenza A H1N1 cases 4 expired, with an overall case fatality ratio of 4.54%. Out of 4 patients who expired, 2 (50%) were male and 2 (50%) were female and all 4 patients were critical. All expired patients had cough and breathlessness and were managed with respiratory support. Tamiflu (Oseltamivir) was given in the recommended doses to all the patients. 3 (75%) patients had high grade persistent fever as presenting symptoms.

Other co morbidities seen in our patients were asthma, COPD, diabetes mellitus, hypertension, coronary artery disease, hyperlipidaemia etc.

DISCUSSION

Influenza A H1N1 is a highly contagious pathogen which made headlines in 2009, as the so called swine flu, by causing a worldwide influenza pandemic.¹

In India, Influenza virus had been generally ignored in public health and in healthcare. Etiology-specific diagnosis requires laboratory tests that are not widely available everywhere.⁶ Therefore what we know about epidemiology and clinical features are entirely from research studies only.

Out of 208 patients who were screened for H1N1, 42.30% patients were found to be positive for H1N1. Tanna et al reported 58.55% patients to be positive for H1N1 which is almost similar to our study.⁷ Choudhry et al found 23.5% patients and Prakash G reported 35.87% patients positive for H1N1 their studies.^{1,8}

Adults were affected more and positive cases were reported more in female than in male in present study. The same findings have been reported from other parts of India.^{7,8}

Age-wise analysis of positive cases per total number of samples screened revealed that, maximum positivity for H1N1 viruses belonged to the age group of <50 years 74 (84.09%) ranging from 5 years to 75 years. The mean age was 35.00±13.36 years. This indicates that infection of H1N1 is seen more in young adults but can affect almost all age groups. Singh et al reported that age range in their population was from 6 month to 85 years with mean age of 31.3 years, which is similar to our findings.¹ Mukherjee et al in his study done in 2010 reported almost similar results.⁶ The most common age group which was affected was 20 to 30 years of age. Gurav et al in their study conducted in Maharashtra reported almost similar age group (20-39 years) in concordance with our findings.⁹

Females were more affected with H1N1 in present study. Singh et al also reported female predominance in their study but Choudhry et al has found involvement of males more in their population.^{1,8} Prakash G has also reported similar results.²

In present study majority of cases were from Gwalior (59.09%) and rest of the patients from nearby districts like Bhind (12.50%) and Datia (5.68%).

Most of the women (80%) in present study had no antenatal care. This may be the reason why females were more affected with H1N1, due to late diagnosis of symptoms.

Transmission of virus usually takes place via human to human involving exposure to large virus containing air droplets or contaminated surface. For preventing swine flu spread our hospital has established a separate ward for swine flu patients. It is equipped with all kind of facilities for managing critically ill patients.

Cough (97.72%) and fever (77.27%) were the most common presenting symptoms in present study, followed by, breathlessness in 29.54% patients. Choudhry et al and Broor et al also reported fever as the most common presenting symptoms in their studies.^{8,10} In the study done by Prakash G in 2013, cough (100%) was most common presenting symptoms followed by fever (96.46%), sore throat (80.53%) and difficulty in breathing (72.56%).²

In the present study 4.45% patients expired. Singh et al reported that out of 304 cases of H1N1 58 expired (mortality rate of 19.08%) in their study.¹

Early detection of H1N1 infection is important and steps to control the spread are very essential to limit the transmission of H1N1.

CONCLUSION

The H1N1 virus is still active in the area of present study. The incidence and mortality in recent outbreak of H1N1 influenza was higher in young and females. All patients who are having influenza like illness are not H1N1 and most of the patients recovered with symptomatic treatment.

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