

ORIGINAL ARTICLE

Study of Clinical Profile in Patients with H1N1 Influenza in New Civil Hospital Surat, January 2015-September-2015

Tinkal Patel^{1*}, Amit Gamit², Ketan Patel³, Ashvin Vasava⁴, Sweta Gamit⁵

^{1,4}Associate Professor, ^{2,5}Assistant Professor, ³Resident Doctor, Department of Medicine, Government Medical College, Surat

ABSTRACT

BACKGROUND: We describe the clinical profile of patients who were found H1N1 Positive in new civil hospital Surat from 1st January 2015 to 30 September 2015. **MATERIAL & METHODS:** Retrospective data of 152 patients from New Civil Hospital Surat who were suspected with influenza like illness was collected. They were subjected to throat swab testing for H1N1. Out of them 60 were positive for H1N1 virus with use of real time reverse transcriptase polymerase chain reaction assay. (TAQ MAN real time PCR CDC protocol). Clinical parameters of these 60 patients were analyzed. **RESULTS:** Out of 152 suspected H1N1 influenza patients, 60 (39.47%) patients were confirmed (positive) for H1N1. Male 33(55%) were affected more than females 27(45%). 23(37.66%) patients had underlying Co-Morbid condition. Fever (98.70%) and cough (100%) were the most common presenting symptom. Total 18 (30%) patients were put on mechanical ventilator. Out of the 60 patients, 20 patients who received oseltamivir within 72 hour of onset of illness, 18 (90%) were cured and 2(10%) expired. 40 Patients who had received oseltamivir after 72 hrs 30(75%) cured and 10(25%) expired. We observed no significant adverse effect of oseltamivir 150 mg twice day dose for 5-7 days. **CONCLUSIONS:** Maximum patients were between age group of 14-50 year. Fever and cough were most common presenting symptoms. Mechanical ventilatory support had role in reducing mortality. Patients seemed to be benefited more from antiviral therapy if started within 72 hour of onset of symptom. There were no significant adverse effects of Oseltamivir observed in this study. Development of ARDS, requirement of Mechanical ventilation and having co-morbid condition were poor prognostic factors.

Keywords: H1N1 Influenza, Clinical Profile.

INTRODUCTION

Influenza virus is a common human pathogen that has caused serious respiratory illness and death over the past century. It always had potential to cause widespread pandemics whenever a new type of Influenza strain appeared in the human population and then spread easily from person to person¹. In April 2009, a new strain of Influenza virus A H1N1, commonly referred to as “swine flu,” began to spread in several countries around the world. The recent H1N1 virus strain has been found to be closely related to the swine flu virus, but with a genetic composition that is quite different from the earlier known isolates. This novel virus presented genetic characteristics that had

Not been previously identified in Influenza A in humans, swine or poultry^{2,3}. India confirmed its first case on 16 May 2009, when a man travelling from New York via Dubai and Delhi tested positive for the H1N1 Influenza virus in Hyderabad.⁴The second case was reported by the National Institute of Virology (NIV), Pune, in a mother and son duo from Chennai on 1 June 2009.¹

The U.S. centre for Disease control and Prevention has released guidelines for the use of Antiviral in the treatment of H1N1 influenza and has emphasized that therapy should be started as soon as possible, since evidence of benefits is strongest for seasonal influenza when treatment is started within 48 hr. of illness onset. In this study we had analyzed the clinical profile, risk factor, effect of Oseltamivir, role of Mechanical ventilator in treatment of novel 2009-H1N1 Influenza infection.

*Corresponding Author:

Dr. Tinkal C. Patel
35, Suyog Nagar Society,
B/h Althan Tenament,
Bhatar, Surat-395017
Mobile: 09898713223/ 09825054370
Email: pateltinkal@yahoo.com

AIMS AND OBJECTIVES

To study the clinical profile, effects of oseltamivir, role of mechanical ventilators in management and to analyze significant adverse effects of oseltamivir in H1N1 Influenza patients of >14 years in New Civil Hospital, Surat.

MATERIALS AND METHODS

Retrospective data of 152 patients from New Civil Hospital Surat who were suspected with influenza like illness was collected. They were subjected to throat swab testing for H1N1. Out of them 60 were positive for H1N1 virus with use of real time reverse transcriptase polymerase chain reaction assay. (TAQ MAN real time PCR CDC protocol).Clinical parameters of these 60 patients were analyzed.

Inclusion Criteria:

- Age more than 14 year.
- Both sex.
- Laboratory confirmed case for novel influenza H1N1 by RT-PCR assay (TAQ MAN real time PCR CDC protocol).

Exclusion Criteria: Laboratory confirmed negative for novel influenza H1N1 by RT-PCR assay (TAQ MAN real time PCR CDC protocol).

Study Design: From January 2015, to September 2015, data of all suspected H1N1 (positive H1N1 confirmed by RT-PCR) patients were sequentially reviewed and medical-chart abstractions were performed which includes demographic data, underlying medical conditions, clinical signs and symptoms, selected laboratory tests, Radiographic findings and treatment course (time of starting oseltamivir after symptom onset.)

We had observed for any major side effect of Oeltamivir in dose 75 mg 2BID in cat-C patients We had also observed for role of Mechanical ventilator Support requirement and mortality relation and common site of pneumonia in positive patients.

RESULTS

Table 1: Age And Sex Wise Distribution of H1N1 Positive Cases

Age	Male	Female	Total
14-50 Year	22	21	43
51-65 Year	05	06	11
>65 Year	06	-	06
Total	33	27	60

Age and sex distribution (Table 1)

Total 152 patients with suspected H1N1 were screened and tested with RT-PCR for H1N1 out of them 60 patients were found H1N1 positive.

43(71.67%) pt were of age ≥14-50year.

11(18.33%) were of 51-65 year 6(10%) were above 65 years of age maximum 43 (71.66%) patients are in age group 14-50 year.

Total 33 (55%) are male and 27 (45%) patients are female, Male have higher chance to get H1N1 infection than Female.

Table 2: Symptomatology in H1N1 positive patients

Symptoms	Number of Patients	Percentage
Fever	59	98.33
Cough dry/with expectoration	60	100
Breathlessness	54	90
Running nose	48	80
Throat pain	52	86.66
Headche/body ache	58	98
Nausea/vomiting	42	70

Our study shows fever present in 59 (98.70%) and cough is present in 100% case other symptom were throat pain, breathlessness, running nose, Headche, Bodyche, Nausea and vomiting.

X-ray findings: 73.33 %(44) patients had abnormal X-ray suggestive of pneumonia/ARDS and 26.66 % (16) pt had normal X-ray. Most common site of pneumonia bilateral, mid zone and lower zones. Simultaneous involvement of both lungs was found to be more common than single lung involvement.

Table 3: Ventilator requirement and outcome

Type of Ventilator	No. of patient	Survived	Expired
Non invasive (BiPAP)	3	3	0
BIPAP followed by invasive ventilator	12	3	9
Invasive ventilator	3	0	3
Total	18	6	12

Total 18(30%) patients were put on Mechanical ventilator Out of these, 3(16.16%) patients were put only on non-invasive ventilator, all were survived. 3(16.16%) patients were put directly on invasive Mechanical ventilator, all were expired, 12 (66.66%) patients were initially put on non-invasive ventilator followed by invasive ventilator, and 9 pts. were expired.

Profile of H1N1 positive patients expired (Table)

In 12 expired patients 5 (45.83%) were male and 7(54.16%) are female. So female mortality is more than male. Statistically no age specific survival seen (p=.33). Out Of 12 expired patients 9 (70.83%) patients had co-morbid medical condition and 3(29.16%) patients had no co morbid condition, so co-morbid medical condition were associated with poor prognosis in H1N1 infection.

Table 4: Effect of Oseltamivir

Duration of Starting Oseltamivir	No. of Patients	Cured	Expired
≤ 72 hrs	20	18	2
>72 hrs	40	30	10
Total	60	48	12

Out of 60 patients 20 (33.11%) patients received oseltamivir within 72 hours of onset of illness. Out of them 2(10%) were expired and 18 (90%) patients cured from H1N1.

Out of 60 patients 40(66.66%) received oseltamavir more than 72 hour of onset of illness. Out of them 10(25%) pts. were expired.

So, antiviral therapy is more effective when started early (within 72 hrs of symptom onset). Statistically we applied chi squ are test to this findings

DISCUSSION

In our study Total 152 patients with suspected H1N1 were screened and tested with RT-PCR for H1N1 out of them 60 patients were found H1N1 positive. 43(71.67%) pt were of age ≥14-50 year. 11(18.33%) were of 51-65 year. In our study total 33 (55.%) are male and 27 (45%) patients are female, Male have higher chance to get H1N1 infection than Female.

In our study 98.3% patients had fever and 100% had cough which is similar to study done by Asmita A Mehta, V. Anilkumar, Suresh G. Nair et al ⁵ where fever and cough was present in 97.7 and 86.4% respectively.

In our study X-ray findings of bilateral lung field involvement was present in 73.33% patients while in study of Asmita A Mehta et al ⁵ it was in 58% of patients. This may be because their study include patients treated on OPD and Indoor

patients while we included only indoor patients.

In our study 30% patient require mechanical Ventilator and mortality was 20%. In study of Asmita A Mehta et al ⁵ 16% require mechanical ventilator and mortality was 6.8%. This may be because their study include patients treated on OPD and Indoor patients while we included only indoor patients.

In our study Out of 60 patients 20 (33.11%) patients received oseltavimiv within 72 hours of onset of illness. Out of them 2(10%) were expired and 18 (90%) patients cured from H1N1 which is similar to study of kn bhatt at el ⁶ where out of 154 (33.11%) patients received oseltavimiv within 72 hours of onset of illness. Out of them 3(5.88%) were expired and 94.11% (48) patients cured from H1N1.

In our study Out of 60 patients 40(66.66%) received oseltamavir more than 72 hour of onset of illness. Out of them 10(25%) pts. were expired. Which is similar to study of kn bhatt at el ⁶ where Out of 154 patients 103 (66.89%) received oseltamavir more than 72 hour of onset of illness. Out of them

21(20.38%) pts. were expired. So, antiviral therapy is more effective when started early (within 72 hrs of symptom onset). statistically we applied chi square test to this findings.

CONCLUSIONS

Male were more affected than female. Most common age group of affection was 14-50 years. 37.66% (23) patients had at least 1 underlined medical co-morbid condition. Fever and cough were most common presenting symptoms. Most common site of pneumonia was bilateral mid zone and lower zone. Simultaneous Involvement of both lungs was more common than single lung involvement. Upper lobe involvement was very uncommon. Mechanical ventilator had role in reducing the mortality. Development of ARDS, requirement of mechanical ventilation and having co-morbid condition were poor prognostic factors. Female having higher mortality than male. Statistically there was no age or sex specific mortality seen. (p= 0.33). 20

patients had received oseltamivir within 72 hrs and out of these 2 patients expired. 40 patients had received it in more than 72 hrs duration and out of these 10 patients expired. ($p=0.007$) This findings are suggestive that oseltamivir therapy effective when started within 72 hours of onset of symptoms.

Clinicians should consider influenza, including H1N1 infection, in the differential diagnosis for patients presenting with fever and respiratory illness or pneumonia. Empirical antiviral treatment for patients with suspected influenza or pneumonia. The present study definitely proves that there is a better outcome in patients of H1N1 influenza when treated with Oseltamivir within 48 hours of onset of symptoms. It is also effective even up to 72 hrs of illness. Ventilator has role in reducing mortality from H1N1 so poor prognostic factors are co-morbid medical condition, development of ARDS, and delay in starting antiviral therapy (more than 72 hrs).

REFERENCES

1. Khanna M, Kumar P, Choudhary K, Kumar B. Emerging influenzavirus: A serious global threat. *J Biosci* 2008;33:475-82.

2. Centers for Disease Control and Prevention (CDC). Swineinfluenza A (H1N1) infection in two children- SouthernCalifornia, March-April 2009. *MMWR Morb Mortal Wkly Rep* 2009; 58:400-2.

3. Novel Swine-Origin Influenza A (H1N1) Virus Investigation Team, Dawood FS, Jain S, Finelli L, Shaw MW, Lindstrom S, Garten RJ, Gubareva LV, Xu X, Bridges CB, Uyeki TM. Emergence of a Novel Swine-Origin Influenza A (H1N1) Virus in Humans. *N Engl J Med* 2009; 360:2605-15.

4. Available from: <http://timesofindia.indiatimes.com/india/Firstconfirmed-case-of-swine-flu-in-India/articleshow/4538930.cms>. [Last accessed on 3rd June 2009 at 19:05].

5. Asmita A Mehta, V. Anilkumar, Suresh G. Nair et al. Clinical profile of patients admitted with swine origin Influenza A (h1n1) virus Infection. An Experience from a tertiary care hospital *Journal of clinical and diagnostic Research* 2013 Oct.

6. K N Bhatt, Shaileshkumar C. Jethwa et al. Study of clinical profile in patients with H1N1 Influenza in Surat District, June 2009-March-2010.