



A Study on Pulmonary Manifestations and Clinical Outcome of Patients Hospitalized with H1N1 Infection

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INTRODUCTION

H1N1 fever (swine flu) is caused by a triple reassorted influenza virus which has got antigenic elements from swine, avian and human influenza virus. The first case of current pandemic was reported from Mexico in March 2009 since then it has affected more than 214 countries and killed about 18000 people In India first case was reported from Hyderabad. In India total number of deaths is 1494 out of 30554 reported cases. The clinical profile, severity and outcome of H1N1infectionwas not uniform in different parts of the world. There are very few detailed studies about the hospitalized patients with H1N1 Infection from our country.

AIM OF THE STUDY

To study the pulmonary manifestation and clinical outcome of patient with H1N1 infection referred for tertiary care management.

MATERIALS AND METHODS

This observational study was conducted in Institute of chest diseases Calicut Medical College. All the cases were H1N1 confirmed byrt-PCR (reverse transcriptasepolymerase chain

reaction). Total 20 cases were admitted with positive throat swab for novel H1N1 influenza virus. All of them were diagnosed from outside and referred to this tertiary care centre for tertiary care support (category C cases). All the twenty proven cases were admitted in a separate isolation ward with facilities for intensive care support.

Detailed history was taken from each patient that included contact history, time of onset of various symptoms time of starting Oseltamiviretc Detailed clinical examination was also done Complete blood count, RFT, LFT, ECG, CXR were taken at the tune of admission. All the patient were closely monitored. Broad spectrum antibiotics-I.V inj. ceftriaxone and oral azithromycin were given to all patients.

Injection amoxicillin- clavulanicacid was added to those who were more symptomatic and had persistent fever. Oseltamivir phosphate (Fluvir) was given orally to all patient in a doseof 75mg twice daily. Those who had severe symptoms were given higher dose (150mg BD).

OBSERVATIONS AND RESULTS

The first confirmed case was a male who had just returned from Gulf. He was admitted on 8th August 2009. Following this we had 19 positive cases up to January 2010. Out of 20 confirmed cases, 11 were males and 9 females. Most of the patients 10 (50%) were in the age group of 20-30yrs. 6 patients were in the (30%) 30-40 yrs and 2 patients (10%) each were below 20 and above 40 years. Maximum cases were reported from Malappuram district. History of contact with positive or suspected case was obtained only in the 10 patient (50%). All of the patients were on Oseltamivir before admission. Most of them 13(65%) took it within 48 hrs of the onset of symptom, 6 patients (30%) within 4 days and 1(5%) after a period of 1 week.

Contact history

History of contact	No. of patients	Percentage
Present	10	50%
Absent	10	50%

Age distribution

Age group	No. of patients	Percentage
10-19	2	10%
20-30	10	50%
31-40	6	30%
>40	2	10%

Month wise Distribution

Month	No. of patients	Percentage
August	2	10%
September	1	5%
October	1	5%
November	10	50%
December	6	30%

Symptoms of admitted patients

Symptoms	No. of patients	Percentage
Fever	18	90%
Cough	16	80%
Sorethroat	4	20%
Dyspnoea	8	40%
Hemoptysis	3	15%
Chest pain	6	30%
Myalgia	3	15%
Vomiting	3	15%
Diarrhea	1	5%

Clinical Findings

Clinical Findings	No. of patients	Percentage
Elevated Temperature	18	90%
Tachypnoea	15	75%
Tachycardia	16	80%
Cyanosis	2	10%
Hypotension	2	10%
Crepitations	14	70%
Wheeze	11	55%

Most common symptoms were fever (90%), cough (80%), followed by breathlessness (40%), chestpain (30%) vomiting (15%), headache(15%), myalgia (15%), hemoptysis (15%), diarrhea(5%). Upper respiratory tract symptom in the form of sore throat and running nose were present only in 20% of cases. The median time from the onset of illness to hospitalization was 7 days (range 1-14days). Clinical examination revealed fever in 18 (90%), tachypnoea 15(75%) tachycardia 16(80%) hypotension 2(10%) cyanosis 2(10%) crepitations 14(70%) and rhonchi in 11(55%). On admission majority of cases (65%) showed normal leukocyte count, leucocytosis was present in 25% and leucopenia in 10%. Most of the patients were having non-productive cough and sputum culture showed growth of *Strep. pneumoniae* in 2 patients. Chest x-ray was normal in 50% of patients and showed bilateral infiltrates in 4 cases (20%), and unilateral infiltrates in 6 cases (30%). Two patients who had normal CXR at the time of admission later showed evidence of pneumonia. Clinical diagnosis of pneumonia was made in 11 cases (55%). 19 patients were successfully treated and discharged. One patient had fatal outcome (5%), 2 patients needed ventilatory support, one in the form of NIV and other had invasive mechanical ventilation One who died was a 50 year old male who had no co-morbidities, but had taken anti viral treatment only one week after the onset of fever.

Initiation of Oseltamivir treatment

Initiation of Oseltamivir treatment	No. of patients	Percentage
Within 48hrs	13	65%
2-5 days	6	30%
After 5 days	1	5%

CXR Findings

CXR Findings	No. of patients	Percentage
Normal	10	50%
Unilateral	6	30%
Bilateral Infiltrates	4	20%

CONCLUSION

This study supports the observation that H1N1 commonly affects young adults. The higher number of cases from Malappuram District can be accounted to the fact that there, are a large number of people from this area who are working abroad, We got contact history only in half of the patient which may be an indicator of role of sub clinical infection in the spread of H1N1 infection. This study also shows that URT symptoms like sore throat and rhinitis which are commonly associated with influenza infection were not present in majority of our patients. As the chest X ray showed unilateral infiltrate in majority of patients it can be assumed that secondary bacterial pneumonia is common compared to viral pneumonia. Hence the role of antibiotics in management of these cases has to be kept in mind. Two of our patients with normal CXR at the time of admission showed infiltrate 3 days after admission, which shows the role of repeat CXR in deteriorating patient. The patient who had fatal outcome was started on anti viral treatment only one week after onset of symptoms which shows the importance of early initiation of treatment for a successful outcome.

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