

Original ARTICLE

Evaluation Of Clinical Profile and outcome of H1N1 (Swine Flu) Patients at A Tertiary Care Hospital – MAMC Agroha

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ABSTRACT

Background: The hemagglutinin type 1 and neuraminidase type 1 (H1N1) virus known as swine flu virus resulted from a triple genetic re-assortment of human, avian and swine influenza viruses. It can lead to mild flu to life-threatening pneumonia, bronchitis, acute respiratory distress syndrome and even death. Aim of this study is to assess clinical profile and outcome of patients infected with H1N1 Virus. **Material and Methods:** This retrospective study was performed at Maharaja Agarsen Medical College, Agroha from December 2018- February 2019. Data of all the patients including clinical history and relevant investigations was collected from Indoor Files. Samples of suspected patients were collected and tested for real time PCR. **Results:** Out of 69 suspected patients, samples tested for RT-PCR 32 (46.4%) cases were identified as positive for H1N1. Overall swine positivity was higher in females than males. Fever was the most common clinical symptom affecting 31(96.8%) patients followed by cough 28 (87.5%) and breathlessness 17(65.6%). Of all the positive patients, 23 (71.9%) patients survived the disease while 6 (18.8%) patients expired. **Conclusion:** Fever, cough and breathlessness were the common presenting symptoms of swine flu. Early diagnosis and prompt initiation of treatment is the only way to reduce the disease progression and mortality. Patients with comorbid conditions require attention as clinical course can be unpredictable.

Key Words: Swine Flu, H1N1, Fever, Cough, Breathlessness

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INTRODUCTION

Influenza is commonly referred to as the flu. It is an infectious disease caused by RNA viruses belonging to Orthomyxoviridae family (the influenza viruses), that affects birds and mammals.¹ The hemagglutinin type 1 and neuraminidase type 1 (H1N1) virus known as swine flu virus resulted from a triple genetic re-assortment of human, avian and swine influenza viruses. The earliest cases were identified in Mexico and southern California in April 2009. In the same year there was an outbreak in India as well. A re-emergence of H1N1 influenza cases has been noted since 2015.^{2,3} Diagnosis of H1N1 is established by reverse transcription polymerase chain reaction (RT-PCR), viral culture and increasing neutralizing antibodies. Prevention and treatment includes patient quarantine, universal

precautions, infection control practices, supportive care and use of antiviral drugs⁴. This study aimed to study the clinical profile and outcome of swine flu patients admitted at a tertiary care Centre MAMC, Agroha.

MATERIAL AND METHODS

This retrospective study was performed at Maharaja Agarsen Medical College, Agroha after taking permission from Ethical Committee (IEC-19/26) from December 2018- February 2019. All patients admitted in swine flu ward were screened during this period. Diagnosis was confirmed by collecting throat swabs using RT-PCR assay for H1N1. Data like Relevant history, clinical manifestations, laboratory investigations and outcome of all the cases were recorded from Indoor Files. Treatment details

including antiviral drugs (oseltamivir) and use of other supportive measures were also recorded. Clinical profile and outcome of H1N1 cases was analysed with reference to age distribution, sex distribution, clinical manifestations, risk factors, complications etc.

RESULTS

Total 69 samples were tested for RT PCR from December 2018-February 2019. 32 (46.4%) cases were identified as positive for H1N1 and 37 (53.6%) were negative. (Table 1, Figure 1)

Table 1: Distribution of cases according to H1N1 positivity.

| H1N1 | Number | Percent |
|--------------|-----------|------------|
| Positive | 32 | 46.4 |
| Negative | 37 | 53.6 |
| Total | 69 | 100 |

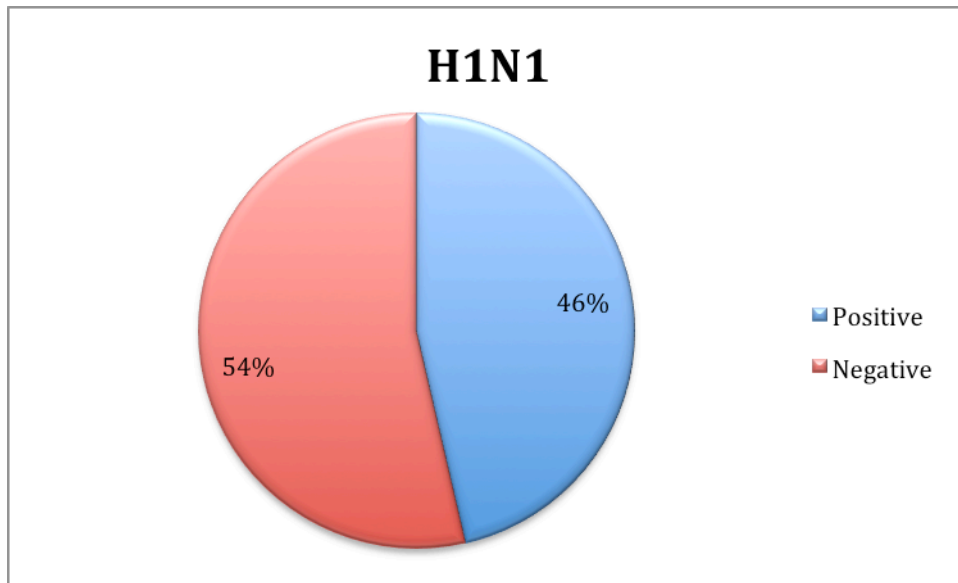


Figure 1: Distribution of cases according to H1N1 positivity

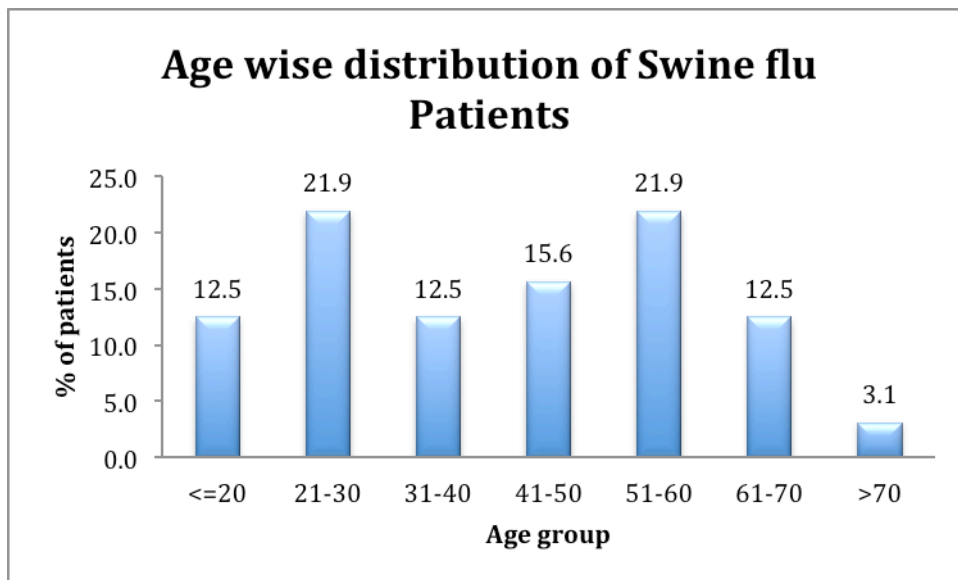


Figure 2: Age wise Distribution of cases

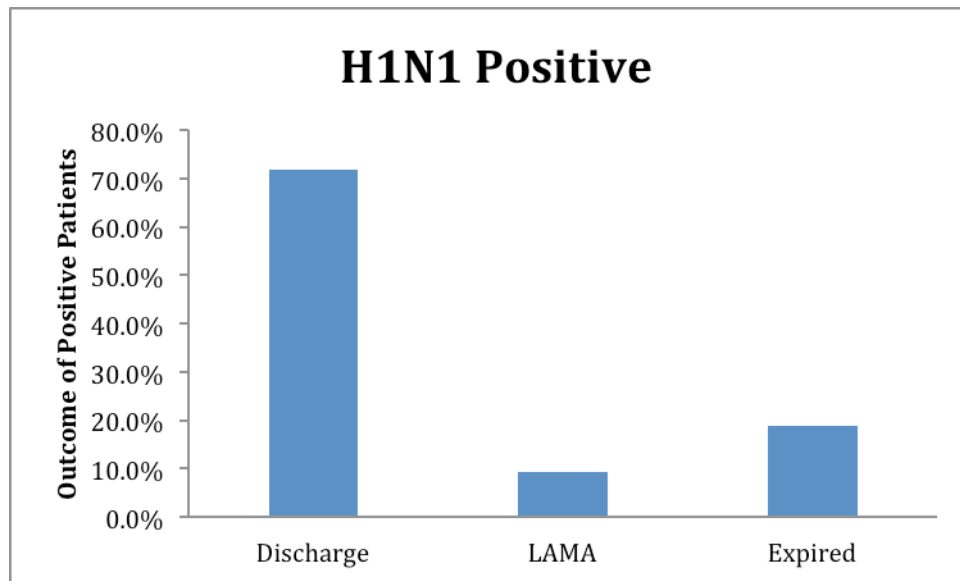


Figure 3: Outcome H1N1 Positive cases

Female patients 18 (56.2%) showed more Swine Flu positivity.(Table 3)

Maximum swine positive patients 7 (21.9%) were from the age group of 21-30 year and 51-60.(Table2, Figure 2)

Table 2: Age wise Distribution of cases

| AGE | Number | Percent |
|--------------|-----------|------------|
| <=20 | 4 | 12.5 |
| 21-30 | 7 | 21.9 |
| 31-40 | 4 | 12.5 |
| 41-50 | 5 | 15.6 |
| 51-60 | 7 | 21.9 |
| 61-70 | 4 | 12.5 |
| >70 | 1 | 3.1 |
| Total | 32 | 100 |

Table 3: Sex wise Distribution of Swine Flu cases

| SEX | Number | Percentage |
|--------------|-----------|------------|
| Male | 14 | 43.8 |
| Female | 18 | 56.2 |
| Total | 32 | 100 |

Table 4 shows that among all swine positive patients fever was the most common clinical symptoms affecting 31(96.8%) patients followed by cough (87.5%) and breathlessness 17(65.6%).

Table 4: Distribution of patients according to clinical symptoms in confirmed patients of H1N1 (n=32).

| Symptoms | Number | Percentage |
|----------------|--------|------------|
| Fever | 31 | 96.8 |
| Cough | 28 | 87.5 |
| Breathlessness | 21 | 65.6 |
| Sore Throat | 8 | 25 |
| Headache | 6 | 18.8 |
| Expectoration | 5 | 15.6 |
| Vomiting | 2 | 6.3 |
| Haemoptysis | 1 | 3.1 |

Of all the positive patients, 23 (71.9%) patients survived the disease while 6 (18.8%) patients succumbed (Table 5, Fig 3).The average stay of patients was 5 days ranging from minimum one day to maximum twelve days.

Table 5 : Outcome H1N1 Positive cases

| H1N1 Positive cases Outcome | Discharge | LAMA | Expired |
|-----------------------------|-----------|------|---------|
| No | 23 | 3 | 6 |
| % age | 71.9% | 9.4% | 18.8% |

DISCUSSION

Influenza starts during pre-winter period and ends With start of summer season. Diagnosis of influenza is confirmed by PCR from throat swab.⁵ Number of patients found to be swine positive were

32 (46.4%). In comparison to a study conducted by Singhal et al swine positivity was 39.37% , our study reported higher positivity.⁶ In our study Females (56.2%) showed more swine flu positivity compared to males(43.8%). Similar results were seen in study by Dhawale et al and Singhal et al.^{6,7} Maximum swine flu positive patients 7 (21.9%) were from the age group of 21-30 year and 51-60 whereas study by Singhal et al swine positivity was seen in the age group of 16-30 years.⁷ Fever and cough were the most common presenting symptoms in our study they were seen in 96.8% and 87.5% respectively, which were similar to reports from Japan, and Mexico.^{8,9} Similar results were seen in Indian studies done by Sighal YS et al and Malkar et al.^{7,10} In our study, 6 (18.8%) patients expired as compared with other study by Singh et al which had a mortality rate of 19.08%, whereas Kshatriya et al. reported mortality rate of 15.38%^{11,12}. Expired Patients who were H1N1 positive were associated with comorbid conditions like Type 2 Diabetes Mellitus, Hypertension and one case was of pregnant female.

CONCLUSION

Fever, cough and breathlessness were the common presenting symptoms of swine flu. Thus, patients with above features coming in winter season, we should suspect swine flu and management must be rationalized as early as possible. Vaccination, early diagnosis and prompt initiation of treatment is the only way to reduce the disease progression and mortality. Patients with comorbid conditions require attention as clinical course can be unpredictable.

LIMITATION

Limitation of this study is small sample size and status of patients who left hospital against medical advice was not known.

BIBLIOGRAPHY

1. Taubenberger JK, Morens DM. The pathology of influenza virus infections. *Annu. Rev. Pathmechdis. Mech. Dis.* 2008 Feb 28;3:499-522.
2. Baden LR, Drazen JM, Kritek PA, Curfman GD, Morrissey S, Champion EW, et al. H1N1 influenza a disease – Information for health professionals. *N Engl J Med* 2009;360:2666-7.
3. Belshe RB. Implications of the emergence of a novel H1 influenza virus. *N Engl J Med* 2009;360:2667-8
4. Poon LL, Chan KH, Smith GJ, Leung CS, Guan Y, Yuen KY, et al. Molecular detection of a novel human influenza (H1N1) of pandemic potential by conventional and Real-time quantitative RT-PCR assays. *Clin Chem.* 2009; 55:1555–8.
5. George KS. Diagnosis of influenza virus. *Methods Mol Biol.* 2012;865:53–69.
6. Singhal YK, Kothari N. A clinico-epidemiological profile of patients with influenza A H1N1 attending a tertiary care hospital in southern Rajasthan region of India. *Int J Res Med Sci* 2019;7:1877-81.

7. Dhawale S, Jayant S. Clinical profile, morbidity and mortality among swine flu (H1N1) infected patients: 2015 Gwalior, Madhya Pradesh pandemic, India. *Int J Adv Med* 2017;3:324-7.
8. Human infection with new influenza A (H1N1) virus: Clinical observations from a school-associated outbreak in Kobe, Japan, May 2009. *Wkly Epidemiol Rec.* 2009;84:237–44.
9. Human infection with new influenza A (H1N1) virus: Clinical observations from Mexico and other affected countries, May 2009. *Wkly Epidemiol Rec.* 2009;84:185–9.
10. Malkar VR, Joge US, Raut MM. Clinicoepidemiological profile of patients of H1N1 influenza (swine flu) virus infection at a tertiary care hospital in Maharashtra. *Int J Biol Med Res.* 2012;3(3):2116-20.
11. Singh M, Sharma S. An epidemiological study of recent outbreak of influenza A H1N1 (Swine Flu) in Western Rajasthan region of India. *J Med Allied Sci* 2013;3:48.
12. Kshatriya RM, Khara NV, Ganjiwale J, Lote SD, Patel SN Paliwal RP. Lessons learnt from the Indian H1N1 (swine flu) epidemic: Predictors of outcome based on epidemiological and clinical profile. *J Family Med Prim Care.* 2018;7(6):1506–1509.