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Original Research

Evaluation of cases of swine flu in patients- A clinical study

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ABSTRACT:

Background: The hemagglutinin type 1 and neuraminidase type 1 (H1N1) virus popularly known as swine flu virus. The present study was conducted to evaluate cases of swine flu in patients. **Materials & Methods:** This study was conducted on 46 cases of swine flu of both genders. Patients were examined and clinical manifestations at presentation, investigations (complete blood count, renal function test, liver function test, chest X-ray, and arterial blood gas analysis), and outcome were recorded. **Results:** out of 46 patients, males were 32 and females were 14. Common symptoms were fever in 40, cough in 38, breathlessness in 24, coryza in 28 and sore throat in 32 patients. The difference was non- significant (P> 0.05). Auscultatory findings were crepitations in 2, both crepitations and wheeze in 32, wheeze in 5 and clear in 7 patients. The difference was significant (P< 0.05). **Conclusion:** Authors found that swine flu is increasing day by day. Common symptoms were fever, cough, breathlessness, coryza and sore throat.

Key words: Influenza, Swine flu, Sore throat

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INTRODUCTION

The hemagglutinin type 1 and neuraminidase type 1 (H1N1) virus popularly known as swine flu virus is a type of influenza A virus which resulted from a triple genetic re-assortment of human, avian, and swine influenza viruses. During the 2009 pandemic, there was an outbreak in India as well. A re-emergence of H1N1 influenza cases has been noted since 2015, and the number of cases continues to rise.[1] The number of swab-positive cases has increased in the year 2017 compared to yesteryears. Since the current circulating strain is different from the previous pandemic strains, a look into the clinical profile seemed imperative.[2]

Influenza (H1N1) is very sensitive and newly emerged pandemic. Influenza (H1N1) pandemics are caused by new influenza viruses that have recently adapted to humans and resemble major natural disasters both in terms of recurrence and magnitude.[3] The influenza virus known to be circulating as a pathogen in the human population since at least the 16th century is notable for its unique ability to cause recurrent epidemics and global pandemics.[4] Genetic re-assortments in the influenza virus cause fast and unpredictable antigenic change. During Influenza (H1N1) Pandemic 2009, the first case in India was reported on 15th May 2009 from Hyderabad and first death in India was reported on 6th July 2009 from Pune.[5] The present study was conducted to evaluate cases of swine flu in patients.

MATERIALS & METHODS

This study was conducted in the department of Medicine. It comprised of 46 cases of H1N1 infection

of both genders. The study protocol was approved from institutional ethical committee. All patients or their relatives were informed regarding the study and written consent was obtained.

Patient information such as name, age, sex etc. was recorded. Patients were examined and clinical manifestations at presentation, investigations (complete blood count, renal function test, liver function test, chest X-ray, and arterial blood gas analysis), and outcome were recorded. Results thus obtained were tabulated and subjected to statistical analysis. P value<0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 46		
Gender	**Males**	**Females**
Number	32	14

Table I, graph I shows that out of 46 patients, males were 32 and females were 14.

Table II Symptoms in patient

Symptoms	Number	P value
Fever	40	0.12
Cough	38	
Breathlessness	24	
Coryza	28	
Sore throat	32	

Table II, graph I shows that common symptoms were fever in 40, cough in 38, breathlessness in 24, coryza in 28 and sore throat in 32 patients. The difference was non- significant (P> 0.05).

Graph I Symptoms in patient

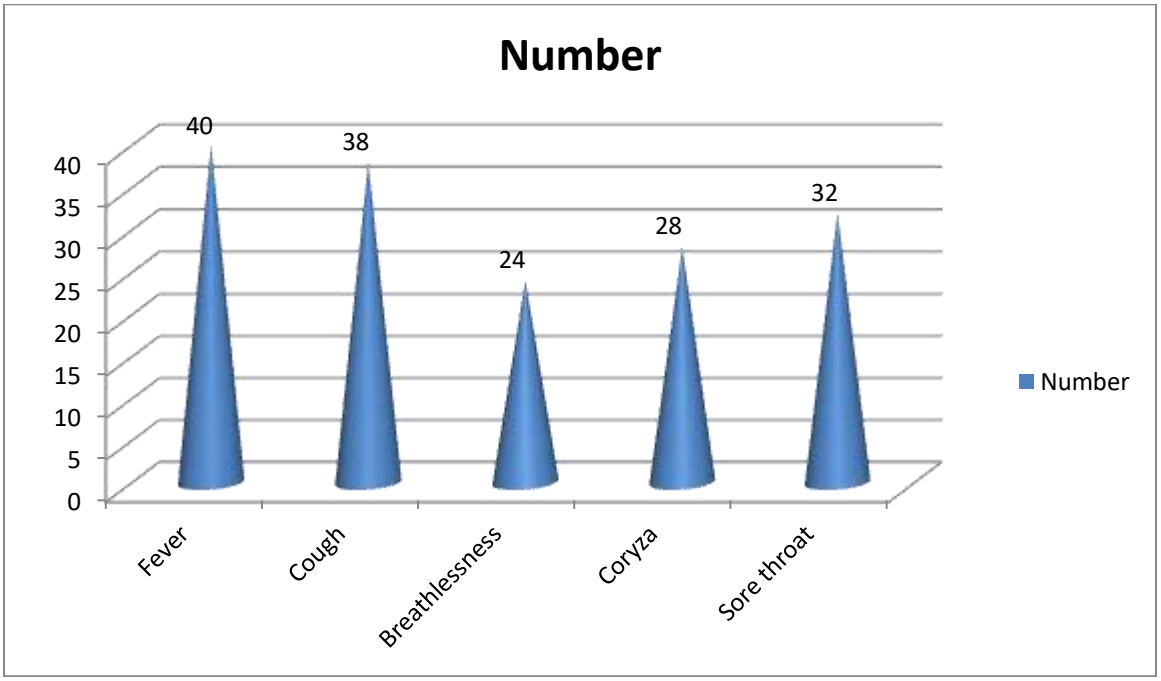
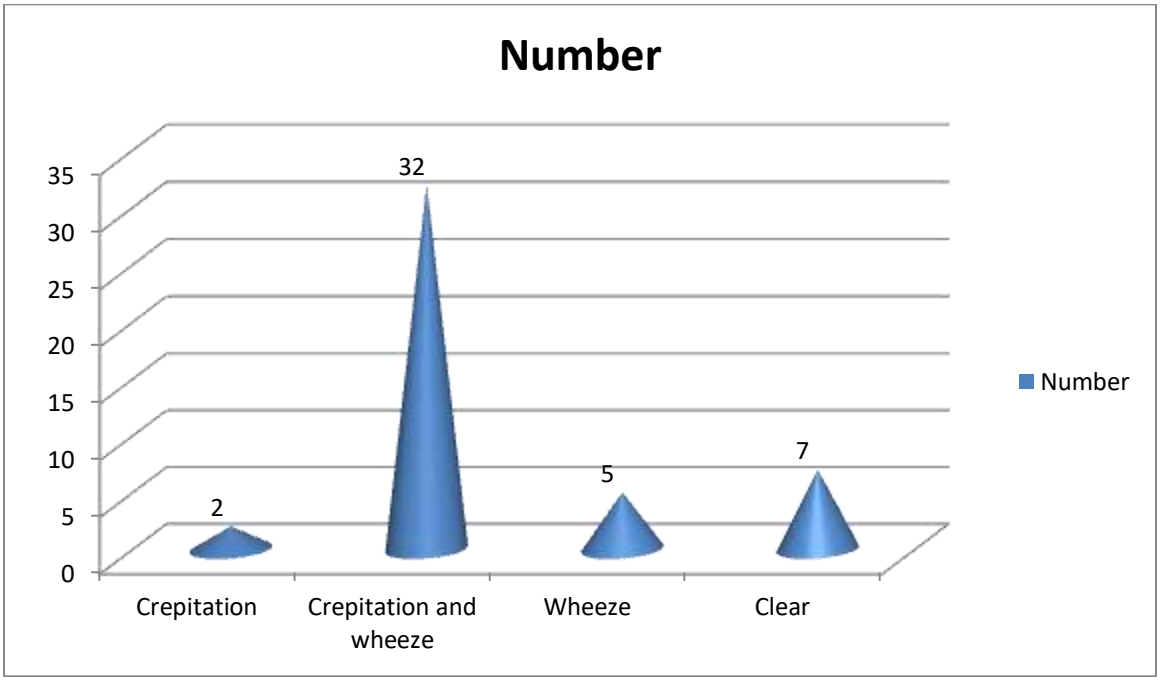


Table III Auscultatory findings



Graph II shows that auscultatory findings was crepitations in 2, both crepitations and wheeze in 32, wheeze in 5 and clear in 7 patients. The difference was significant (P< 0.05).

DISCUSSION

Influenza virus belongs to the orthomyxoviruses family and has three types named A, B and C. Influenza virus type A and B cause epidemic disease and the associated antigens are included in influenza vaccines.[3] Type C influenza virus is associated with mild influenza-like illness and causes sporadic disease. It is estimated that, every year 15-42% of preschool and school-age children are infected with influenza virus. The severe disease is associated with low-income settings in children and 99% of deaths in children occur in developing countries.[6]

After control of the 2009 H1N1 pandemic, the number of cases across the world has reduced. But unfortunately, India has seen a continuous rise in the number of H1N1-positive cases since 2015. Although the survival rates have improved compared to the pandemic period, the number of swab-positive cases continues to rise.[7] A review of the statistics in India can give a gross idea about the picture. The year of 2016 saw 1786 swab-positive cases with 265 deaths. However, in 2017, 12,460 swab-positive cases have been detected till July 9, 2017. Out of these cases, 600 patients succumbed to the disease. While the numbers are definitely much larger than figures of 2016, the death rate seems to have reduced from 14.8% (2016) to 4% (2017). Although the worst outbreak in India was in 2009–2010 (50,000 affected people and 2700 deaths), a re-emergence of H1N1 is equally alarming.[8] The present study was conducted to evaluate cases of H1N1 infection in patients.

In present study, out of 46 patients, males were 32 and females were 14. The common symptoms were fever in 40, cough in 38, breathlessness in 24, coryza in 28 and sore throat in 32 patients.

Van et al[9] found that a total of 76 confirmed cases of H1N1 influenza were detected during the study period of which 36 required Intensive Care Unit admission. Most patients were between 51 and 60 years (25%). The predominant presenting symptoms were fever (98.7%), dry cough (61.8%), breathlessness (53.9%), and the most common auscultatory finding being bilateral crepitations (64.47%). Around 32.89% of cases presented with bilateral lung infiltrates on X-ray. Sixty-nine of 76 patients (90.79%) survived the disease. Vaccination, early recognition of the disease, and prompt initiation of treatment seem to be the only way to reduce H1N1 disease progression and associated mortality. Patients with risk factors require additional attention as clinical course can be unpredictable.

We observed that auscultatory findings were crepitations in 2, both crepitations and wheeze in 32, wheeze in 5 and clear in 7 patients. Choudhry et al[10] found that a total of 132 hospitalized children was studied. At least one respiratory virus was found to be positive by RT-PCR in 78 (59%) patients, influenza A

(H3N2) was detected in only 8 (6%) patients. In 54 (41%) patients samples no respiratory viral pathogen was detected and in 70 (53%) patients, one non-influenza A virus was detected. The respiratory viral pathogens detected in decreasing rates were: RSV (n = 46, 35%), HCoV (n = 10, 7.5%), adenovirüs (n = 7, 5%), rhinovirüs (n = 6, 4.5%), HMPV (n = 5, 4%), Influenza B (n = 4, 3%) ve human Bocavirus (n = 2, 1.5%). In 10 patients, co-infection was detected, however none was with H3N2. In the H3N2 (+) group, the following risk factors were identified: age older than three years ($p < 0.05$), asthma history ($p < 0.05$) and chronic lung diseases.

CONCLUSION

Authors found that swine flu is increasing day by day. Common symptoms were fever, cough, breathlessness, coryza and sore throat.

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