



A STUDY OF CLINICAL PROFILE OF 100 CASES OF INFLUENZA A H1N1 PNEUMONITIS (SWINE FLU) ADMITTED IN P.D.U. CIVIL HOSPITAL, RAJKOT IN THE YEAR 2019

Medicine

Manisha D. Panchal

Associate Professor, Department Of Medicine, P.D.U. Civil Hospital, Rajkot

Bhavik Ashokbhai Chauhan*

Third Year Resident, Department of Pulmonary Medicine, P.D.U. Civil Hospital, Rajkot
*Corresponding Author

ABSTRACT

Background: We Describe The Clinical Characteristics Of Patients Hospitalized With H1n1 (swine Flu) Pneumonitis In Pdu Civil Hospital, Rajkot.

Material And Methods: From January 2019, We Observed 100 Cases Of Rt-pcr Confirmed Influenza A H1n1 (swine Flu) Admitted In Seasonal Flu Ward Of P.d.u. Civil Hospital, Rajkot And Clinical Profile And Outcome Of The Disease Monitored.

Results: Of 100 Cases, 55 Were Males. Median Age Was 48 Years, With Majority Of Cases Within 45 To 60 Years Agegroup. One Third Of Patients Expired. Most Common Symptoms Were Cough (98%), Fever (93%) And Breathlessness (92%). The Most Common Comorbidity Associated With Swine Flu Is Type Ii Diabetes Mellitus (41%) Out Of Which 70% Were First Time Incidentally Diagnosed, Followed By Hypertension And Ihd. patient Who Neded Ventilatory Support Throught The Course, 95% Of Them Discharged.

Conclusion: Diabetes Mellitus Type Ii Is Found To Be A Significant Risk Factor For Swine Flu. As The Associated Coexisting Conditions Increases, The Outcome Will Be Poorer. Need Of Ventilator Is A Risk Factor Associated With Poor Outcome.

KEYWORDS

H1n1, swine flu, clinical profile, diabetes mellitus, ventilator

INTRODUCTION

H1N1 Swine Flu is a subtype of Influenza A Virus which can cause contagious infection in Humans if antigenic characteristics of virus change through re assortment(1). Through efficient Person-to-Person transmission, it is capable of making dreadful Pandemics such as in 1918 and 2009(2). The "2009 swine flu" strain, which originated in Mexico, was termed Novel H1N1 flu since it was mainly found infecting humans and exhibits 2 main surface antigens, hemagglutinin type 1 and neuraminidase type 1(3). H1N1 Virus that caused that Pandemic is now a regular Human Virus and continues to circulate seasonally worldwide(4). The influenza A and B viruses that routinely spread in people (human influenza viruses) are responsible for seasonal flu epidemics each year(5).

MATERIAL AND METHODS

In order to study the Clinical Profile of Influenza A H1N1 Cases, A Cross-sectional, Descriptive Study was carried out at Pandit Deendayal Upadhyay Government Civil Hospital, Rajkot, Gujarat, India which is a Tertiary Health Care Centre. Data of Randomly selected 100 RT-PCR (Reverse Transcriptase Polymerase Chain Reaction) confirmed Positive cases of Influenza A H1N1 (Swine Flu) admitted in Seasonal Flu Ward of P.D.U. Civil Hospital from 1st January 2019 collected with the help of Hospital Case Records. Data were analysed using Microsoft Excel Software. Citation and bibliography done using Mendeley.

RESULTS

A total of 100 cases of RT-PCR Confirmed Influenza A H1N1 Pneumonitis (Swine Flu) were included in study(6). Though all the age groups seem to be affected by the infection, Majority of the patients belonged to the age group of 45 to 59 Years (39%). The Mean Age is 47.78 Years. Both the Genders are equally affected with slight Male Preponderance (Male=55%, Female=45%). The Predominant symptoms at presentation were Cough (98%), Fever (93%), Breathlessness (92%), Chest Pain (36%) and Sorethroat (29%). Other Symptoms have been listed in the Table 1.

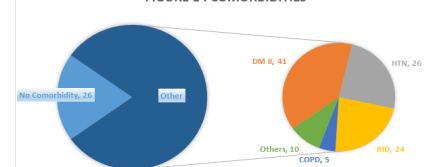
TABLE 1 : SYMPTOMS

No.	Symptom	Number of Patients (%)
1	Cough	98 (98%)
2	Fever	93 (93%)
3	Breathlessness	92 (92%)
4	Chest pain	36 (36%)
5	Sorethroat	29 (29%)
6	Common cold	6 (6%)
7	Hemoptysis	3 (3%)
8	Headache	3 (3%)

Regarding Time of Presentation, Majority of Patients presented after 5 Days of onset of illness (54%) and only 5% presented within 3 Days of Onset of Illness. Majority of the patients (50 %) have oxygen saturation on room air at the time of admission was between 71 to 90%. Only one case was having significant history of travelling before getting the disease.

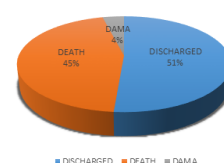
Most Common Comorbid conditions associated with Influenza A H1N1 were Diabetes Mellitus (41%), Hypertension (26%), Ischaemic Heart Diseases (24%) and Chronic Obstructive Airway Disease (5%). Other less common but significant preexisting conditions were Congenital Poliomyelitis (3%), Thyroid Disorders (3%), Old Pulmonary Tuberculosis(2%) and Bronchiectasis (1%). 26% Cases were having not a single comorbid Condition and there was also not a single case of PLWHA (People Living with HIV AIDS) or Active Pulmonary Tuberculosis or any long term steroid / Immunosuppressant user. Among the Total Diabetic Cases only 29% were already diagnosed or Known cases of DM II whereas Majority (71%) were first timely diagnosed of having DM II after admission in the Hospital. Graph/Figure 1 summarizes all the Comorbidities.

FIGURE 1 : COMORBIDITIES



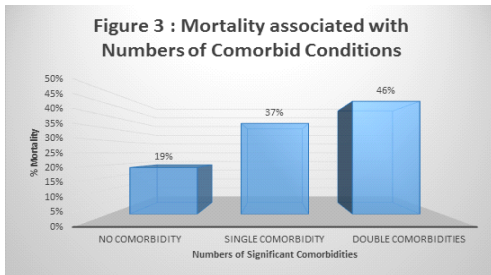
During the course of Admission 78%, patients needed Mechanical Ventilatory Support and Remaining 22% did not require Mechanical Ventilation through admission and could be managed with Oxygen Support by Simple Mask or Rebreathing Mask. Among the cases who required noninvasive or Invasive Type of Mechanical Ventilator, Half of the patients later on Expired and only 45% were discharged. Whereas among the cases who never required Ventilatory support at any point of Time during the hospital stay, Outcome was very Good (95 % Discharged). Outcome of the patients who needed ventilatory support showed in Graph/Figure 2.

FIGURE 2 : Outcome in the Patients who needed Mechanical Ventilatory Support
"Need of Mechanical Ventilator itself is a risk factor affecting outcome of the disease"

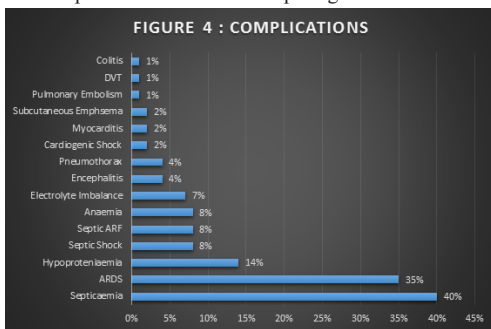


Majority of Patients who expired needed Intensive care and Ventilatory Support. Average length of stay on Ventilator for patients who had been discharged was 5.2 Days. A Single Death was reported in a 25 years antenatal female with 7 months of Amenorrhoea who was presented with acute onset of Gabharaman and Chest pain of 2 days of onset and hypotension and complicated with IUFD (Intra Uterine Fetal Death).

Considering the effect of comorbid conditions on Mortality, out of the cases who was not having a single Comorbidity (26 Cases), only 19% Expired. Out of 35 Cases who were having any one significant Comorbid condition, 37% Expired. Whereas out of 28 Cases who were having two significant Comorbid conditions simultaneously, 46% expired. Better to be understandable from Graph/Figure 3.



Most common complications in the cases of Influenza A H1N1 Pneumonitis were Septicaemia (40%), Acute Respiratory Distress Syndrome (35%), Hypoproteinaemia (14%). Other considerable complications includes Septic Acute Kidney Injury (8%), Anemia (8%), Electrolytes Imbalance (7%), Viral Encephalitis(4%), Viral Myocarditis (2%), Pneumothorax (4%), Ventilator associated Subcutaneous Emphysema (2%), Cardiogenic shock (2%), and Deep Vein Thrombosis (1%). All Complications are listed in Graph/Figure 4



Out of Total 100 cases, 61% of patients discharged, 35 % of patients succumbed and met to death and 4 % of cases took DAMA (Discharged against Medical Advice). In majority of the Expired cases, the primary cause of death was Type 1 respiratory failure due to acute respiratory distress syndrome.

DISCUSSION

This study included total 100 patients with confirmed influenza A H1N1 pneumonitis (Swine flu) of category C admitted in Seasonal Flu Ward of P.D.U. government civil hospital, Rajkot from 1st January, 2019. The cases were almost equally distributed in both the genders. This was similar to results of previous Indian studies(7)(8). H1N1 influenza can infect population of any age but most commonly, people of age group of 45 to 60 years were affected. The Median age of patients was 48 years. Although the survival rate have improved compared to the pandemic period, the cases of swab positive swine flu pneumonitis continued to be occurring in the community seasonally and so now “swine flu” is renamed as “Seasonal Flu”(4) . Travel History need not to be necessarily present for the occurrence of infection as only one case was having history of travelling outside. Most common presenting symptoms of H1N1 infection were cough, fever, breathlessness, chest pain and sorethroat which is also similar to many previous studies(8)(9)(10)(11). Common cold or coryza, hemoptysis and headache occurred in some of cases. Incidence of Sorethroat was found to be low in our study as compared to various studies done in Pandemic period were sore throat was most common presenting chief complaint(9). Both genders were found to be equally affected in our study.

Regarding coexisting comorbid illnesses, diabetes mellitus,

hypertension and ischaemic heart disease were found to be most commonly associated(9). Among all these Diabetes Mellitus Type II was found to be most important and statistically most significant comorbid condition which was having high impact on both the occurrence as well as outcome of the disease(7)(11). Most of the cases who were already diagnosed cases of DM II came out to be POSITIVE in throat swab testing by RT-PCR for Influenza AH1N1 infection. Very interestingly almost 70 % of the total DM II patients with positive H1N1 infection in our study were the cases who found to be having diabetes for the first time from routine investigations after the admission in the hospital. This suggest that Diabetes mellitus is the most important risk factor for the occurrence of swine flu. Diabetes has been reported as the common comorbid condition in the previous studies also(7)(10). Respiratory failure is the commonest cause of death in diabetic patients with swine flu(12).

Of all the patients, 61 % survived the disease while 35 % succumbed and 4 % took DAMA. According to our findings, the most common cause of death were respiratory failure due to pneumonia progressed to ARDS complicated with septicaemia which is similar to other studies (7)(8). In these patients the virus directly infects the lungs causing severe respiratory failure(10). Case fatality rate from our study was 35 %.That is higher than other studies(8)(9)(7). The patients included in our study were mostly referred cases and they were more critically ill , which would have contributed to increased mortality in present study.

In our study, 78% of patients had prolonged illness and they required mechanical ventilation. The discharge ratio was higher in those patients who never needed mechanical ventilator support through the hospital stay. Out of those patients who required ventilator support, almost half of them expired and half of them discharged. Whereas those patients who not required ventilator, almost all of them discharged .This data suggest that need of mechanical ventilator itself is a significant risk factor affecting the outcome of the disease. Pregnancy is one of the important risk factor for H1N1 infection(7)(11)(8). Complications related to H1N1 were Septicaemia (40%), Acute Respiratory Distress Syndrome (35%), Hypoproteinaemia (14%), Septic Acute Kidney Injury (8%), Anemia (8%), Electrolytes Imbalance (7%), Viral Encephalitis(4%), Viral Myocarditis (2%), Pneumothorax (4%), Ventilator associated Subcutaneous Emphysema (2%), Cardiogenic shock (2%), and Deep Vein Thrombosis (1%).

LIMITATIONS:

The data was collected only from the indoor patients in seasonal flu ward. Patients belonging to category B and who were not tested by RT-PCR were not included. All findings were from clinical experience. Despite the use of standardized data collection, not all the information collected from all the patients. Further, such large community-based studies are required to analyses the actual profile the disease. HFOV and ECMO are not available at our centre.

CONCLUSIONS

We have demonstrated that Influenza A H1N1 (Swine flu), now “Seasonal Flu” can infect person of both the sexes equally of any age group but most commonly of 45 to 60 years with survival rate of 61%. Diabetes mellitus Type II is found to be a significant risk factor affecting both the occurrence as well as outcome of the disease. More the number of associated significant comorbid conditions, the poorer will be the outcome. The need of mechanical ventilation itself is a significant risk factor increasing the mortality of the disease.

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