Original Research Article

A study of clinical profile of Influenza A (H1N1) pdm09 patients at a tertiary care hospital

Nilima K. Shah[1], Kamlesh J. Upadhyay[2*], Bhavik Prajapati[3], Vipshyana Manwar[4], Dileep Gamit[5], Khyati Rathwa[6]

[1]Associate Professor, [2]Professor, [3]Assistant Professor, [4,5,6]Resident
Department of Medicine, B.J. Medical College, Ahmedabad, Gujarat, India
[*]Corresponding author email: **drkjupadhyay@hotmail.com**

Abstract

Background: WHO announced influenza A H1N1 as pandemic (commonly known as swine flu) in 2009; but every year there is increase in influenza A H1N1 positive cases causing epidemics of febrile respiratory illness due to genetic re-assortment in influenza virus. This study aimed for clinical profile of patient with influenza A H1N1 and its outcome admitted at civil hospital Ahmedabad.

Materials and methods: Present study was included 50 patients with influenza A H1N1; admitted in B.J. Medical College and Civil Hospital, Ahmedabad. This study was carried out for one year from June 2018 to June 2019. Patients were studied and managed as per standard Government of India protocol.

Results: Total 50[19 (38%) males and 31 (62%) females] patients were studied for clinical spectrum, complications and outcome. All patients had fever (100%), dry cough in 92% of patients, throat pain in 88% of patients, breathlessness in 54% of patients, headache in 48% of patients, sputum production in 40% of patients and hemoptysis in 6% of patients. 35 (70%) patients had comorbidity. Total13 (26%) patients were complicated; out of which 4 (8%) patients required ventilatory support.

Conclusion: Early case detection, categorizations according to symptoms prevention of treatment has better outcome and decreases disease related morbidity and mortality and burden of disease in community and voluntary early reporting should be encouraged through various health campaigns.

Key words

Clinical profile, Influenza A, H1N1.

Introduction

Influenza is unpredictable. It spreads across the world since centuries. Influenza is highly contagious respiratory infection and constitutes a significant public health problem due to its rapid transmission and the high associated morbidity and mortality [1]. On 10th August 2010, the pandemic was declared to be an end with more than 18,449 deaths reported worldwide out of which 2728 death in India by end of the month [2]. The virus spreads by droplet infection or droplet nuclei during sneezing, coughing or talking with average incubation period 1to 7 days with high transmission in monsoon season. Clinical spectrum varies from mild infection LRTI, Pneumonia to ARDS and MODS [3, 4, 5]. Effective early case detection and treatment as per WHO guideline is necessary to reduce morbidity and mortality. Special measures taken during pre-monsoon season reduces risk of transmission of disease.

Materials and methods

A study was done of 12 months duration. 50 Patients were admitted in Medicine Department, Isolation ward, Medical and Intensive Care Unit of Civil Hospital, Ahmedabad.

Inclusion criteria
Age more than 12 years with nasopharyngeal swab positive with H1N1 Influenza.
Exclusion criteria
Age less than 12 years with nasopharyngeal swab positive with H1N1 Influenza.

Study procedure
The patients were selected according to inclusion and exclusion criteria. All information about diagnosis based on clinical presentation, laboratory values, radiological findings, and confirmed cases by nasopharyngeal swab (RTPCR for H1N1), duration of hospital stays, and patient outcome in form of oxygen requirement, need of non-invasive and invasive mode of ventilation, discharge and deaths. All patients were treated as per standard treatment protocol.

Results

Study of 50 patients of H1N1 positive cases showed following results. Age and gender wise distribution of H1N1 positive cases was as per **Table – 1**. Comparison of sex wise distribution with various studies [6, 7, 8] was as per **Table – 2**. Clinical manifestations in various studies [8, 9] were as per **Table – 3**. Association of co-morbidities in influenza A H1N1 was as per **Table – 4**. Different comorbidities in various studies [9] were as per **Table – 5**. ICU admission required in various studies [10] was as per **Table – 6**. Dose for treatment was as per **Table – 7**. Dose for chemoprophylaxis was as per **Table – 8**.

Table - 1: Age and gender wise distribution of H1N1 positive cases.

Age group (years)	Male (19)	Female (31)	Total (50)
13-20	01	01	02
21– 30	01	02	03
31-40	01	05	06
41-50	09	05	14
51-60	04	09	13
61-70	03	08	11
71-80	00	01	01

Discussion

Total 50 patients were studied. There were 19 males (38%) and 31 females (62%) were observed. It is clear that majority of the cases having infection belong to the age group of 41-50 years. Total 13(26%) patients were complicated; 4 cases required ventilatory support (8%); and remaining 9 cases were having systemic complications in form of acute kidney injury and septicaemia (18%). No mortality was there during this study.

Table - 2: Comparison of sex wise distribution with various studies.

Sex	Dhawale (2017) [6]	Revdiwala (2017) [7]	Srinivasa R (2011) [8]	Present study
Male (%)	37.5	50.19	30	38
Female (%)	62.5	49.81	70	62
Total (%)	100	100	100	100

Table - 3: Clinical manifestations in various studies.

Signs and symptoms (%)	Sharma V (2010) [9]	Srinivasa R (2011) [8]	Present study
Fever	18	90	100
Dry cough	88	100	92
Throat pain	16	25	88
Breathlessness	80	50	27
Headache	58	25	48
Haemoptysis	07	09	06

Table - 4: Association of co-morbidities in influenza A H1N1.

Co-morbidity	No. Patients	%
Diabetes mellitus type 2	9	25.71
Hypertension	7	20
COPD	5	14.28
Ischaemic Heart Disease	3	08.57
Diabetes Mellitus type 2	2	05.71
Pregnancy	2	05.71
Cerebral Vascular Attack	2	05.71
Bronchial Asthma	2	05.71
Chronic Kidney Disease	1	02.85
Hypothyroidism	1	02.85
Anaemia	1	02.85
Total	**35**	**100**

Table - 5: Different comorbidities in various studies.

Comorbidity	Sharma V (2010) [9]	Present study
Hypertension	14	20
Diabetes	31	5.71
Ischaemic heart disease	08	8.57
COPD	25	14.28
Pregnancy	14	5.71
Bronchial asthma	06	5.71
HIV	03	00
Chronic kidney disease	00	2.85

Table - 6: ICU admission required in various studies.

ICU admission (No. of patients)	CL Nawal (2019) [10]	Present study
YES	97	4
NO	19	46
Total	116	50

Table - 7: Dose for treatment.

Weight (Kg)	Dose (Mg) BD For 5 days
<15	30
15-23	45
24-40	60
>40	75

Table - 8: Dose for chemoprophylaxis.

Weight (kg)	Dose (Mg) OD For 10 days
<15	30
15-23	45
24-40	60
>40	60

All patients were isolated in isolation ward; given oseltamivir according to weight and given symptomatic treatment according to standard protocol. All personal protection measures (PPE) were taken and contacts of cases were given chemoprophylaxis according to standard protocols. We had conducted retrospective study of 50 Influenza A H1N1 positive patients admitted in tertiary care hospital. We observed Hospitalization rates were more common in the

age group of 31-50 years .Out of 50 patients, 35 patients (70%) was having underlying co-morbidity, out of this Diabetes Mellitus and Hypertension (51.75%) were major contributor. But early detection, isolation, prompt treatment reduces complications and mortality in these co-morbid patients and had good outcome. There were 4 patients who required ventilatory support (8%); out of 4, 3 patients were discharged and 1 took leave against medical advice. There was no mortality in present study.

Conclusion

The most common age group affected was 41-50 years with female preponderance, maximum cases were associated with underlying co-morbidity. Early detection of symptoms and consultation to nearest health care facility, isolation and treatment reduce complications and mortality. Finally, social education regarding patient quarantine should be emphasized upon by using mass media and health campaign in order to prevent influenza epidemics and proper use of personal protection equipment reduces transmission in health care personnel [11].

Limitation of the Study

This study was basically conducted as a retrospective study in a tertiary care institute. Hence, the milder forms of the infection as well as the index case which occurred at the community level could have been missed out. Hence, this analysis may not reflect the actual distribution of the cases at the population level. Further community-based studies are required to analyze the actual impact of H1N1 infection in the community.

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