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INFLUENZA A H1N1 CHARACTERISTICS ON HAJJ OCCASION 2018 MAKKAH REGION, KSA.

Imran Nazir[1], Muhammad Ajmal Farid[2], Hammad Tufail Chaudhary[3], Iffat Imran[4], Rizwan Rasul Khan[5], Ali Saqib[6], Ahmad Turkistani[7], Ahmad Asiri[8], Abdullah Swida[9]

1. FCPS
Medical Specialist. Security Forces Hospital Makkah, KSA. Ex- Assistant Professor Department of Medicine UMDC.
2. MBBS. MD (Nephrology)
Consultant Nephrologist
King Abdul Aziz Hospital, Taif.
3. FCPS
Consultant Hematologist
College of Medicine Taif University.
4. FCPS
Assistant Professor
College of Medicine Taif University.
5. MBBS, FCPS
Associate Professor
Department of Medicine
Aziz Medical and Dental College, Faisalabad.
6. MBBS, FCPS
Associate Professor
Department of Medicine
Independent Medical College, Faisalabad.
7. MBBS
Security Forces Hospital
Makkah (SFHM), KSA.
8. MBBS
Security Forces Hospital
Makkah (SFHM), KSA.
9. Consultant
Department of Internal Medicine & Pulmonologist
Security Forces Hospital Makkah (SFHM), KSA.

Correspondence Address:
Dr. Imran Nazir Ahmad
278- Jinnah Colony Faisalabad.
Pakistan.
imrannazir40@gmail.com

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ABSTRACT… Objectives: To see the clinical characteristics and laboratory parameters of influenza A (H1N1) infection on hajj occasion 2018. **Introduction:** World Health Organization in 2009 declared H1N1 as pandemic, when about 70 countries documented approximately 30,000 cases of H1N1 infection. Saudi Arabia is representing a hot zone for influenza virus epidemics especially during Hajj gathering. Commonly H1N1 infection presents with flue like symptoms. Influenza infection is a major public health threat especially area like Makkah. **Study Design:** It was observational study. **Setting:** Done in Security Forces Hospital Makkah. **Period:** On hajj occasion from July to August 2018. **Material and Methods:** Total 50 admitted patients in isolation were included in study. Data was collected and analyzed using SPSS version 24. **Results:** In this study 08% patients had H1N1 +ve out of total patients included in study. Predominantly (75%) were < 14 years with 75% males. The most common presenting symptoms of these patients were Cough (100%), Fever (100%), breathlessness (75%), throat pain (50%), runny nose (75%), headache and lethargy (50%). Twenty five percent patients had hypoxia. Leukopenia was seen in 50% patients and thrombocytopenia was not documented in any patient. Liver Function Tests were deranged in 75% patients and Renal Function Tests were normal in all patients. Number of complications (pneumonia) was 25%. **Conclusion:** Clinical features and serological markers of influenza A +ve patients were same as reports globally and in KSA.

Key words: Clinical Features, HINI, KSA, Serological Characters.

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INTRODUCTION

H1N1 was declared by the World Health Organization (WHO) in 2009 as pandemic. When about 70 countries documented H1N1 +ve cases about 30,000.[1,2] H1N1 pandemic globally caused deaths about 575,400.[3]

Saudi Arabia is representing a hot zone for influenza epidemics, due to the Hajj gathering.[4] Human infection with influenza virus is expected through human-to-human transmission especially during Hajj gatherings where peoples are visiting from different countries and different climates.

Common clinical presentation of influenza infection is fever, cough, dyspnea, myalgia, headache and upper respiratory symptoms. Commonly cases has mild symptoms and self-limited, although small percentage of patients have a severe course that may end in respiratory failure and death.[5] Such severe course and fatal outcome is more in patients with concomitant chronic diseases. Sometimes seen in previously healthy people.[6] Bacterial pneumonia is expected as secondary complications of H1N1infection.[7]

Rapid and sensitive diagnostic tests for influenza is an important tool that is considered in future influenza pandemic planning.[8]

Final diagnosis of H1N1 infection depends on Clinical decision and influenza RT-PCR in any setting.[9]

Ministry of Health KSA, declared 15850 laboratory-confirmed cases of H1N1 in 2009.[10]

Few studies (Altayep KM et al.[4], Agha A et al.[11], Herzallah HK et al.[12], Affifi RM et al.[13], Bin Saeed AA et al.[14]) done for H1N1 from whole Saudi Arabia.

In 2009 Khdary et al[15] did study in Makkah (data collected from primary health centers of MOH. A total of 1138 patients were included in the study. Among the study population, H1N1 positive case were 25%.

Influenza is a major public health threat especially area like Makkah. Annually millions of pilgrims are coming from different regions of World.

So this study was conducted in tertiary Hospital of Makkah, where more sick patients are visiting. It described the epidemiology, clinical and laboratory parameters of influenza A (H1N1) infection on hajj occasion among residents, citizens, pilgrims and military personals in Makkah city during 2018.

MATERIALS AND METHODS

This was a prospective observational study that was carried out at security Forces Hospital at Hajj occasion 2018 after institutional ethical committee approval.

All patients admitted in isolation were included in study according to following inclusion criteria;

1. Both sexes.
2. Admitted in isolation with case definition of ILI (influenza like illness); fever of > 38c, cough with illness onset within the last 10 days.
3. Pregnant patients.

Exclusion criteria was:

1. Patients with active malignancy with cancer therapy.
2. Patients with organ transplant with immunosuppressive therapy.

All patients were reviewed regarding their clinical features, clinical signs and laboratory parameters after patients consent and stratified random sampling technique was adopted. All patients were initially screened by serological methods and confirmed positive for novel influenza through Real Time Polymerase Chain Reaction (RT-PCR) testing via nasal and throat swabs.

Data were collected and analyzed using a Microsoft Excel and Statistical Package for Social Sciences (SPSS version 24).

RESULTS

The incidence of H1N1 positive patents was 08% in all admitted patients in isolation.

In this study age of the patients ranges from 2 years to 63 years (75% < 14 years) with 75% males and 25% females (Table-I). Hundred percent patients were citizens of Saudi Arabia. The most common presenting symptoms of these patients were fever (100 %), cough (100 %), breathlessness (75%), throat pain (50%), runny nose (75%), headache and lethargy (50%) as shown in Table-II.

Twenty five percent patients had comorbid condition like Diabetes Mellitus, Chronic kidney disease, ischemic heart disease, old ischemic stroke and bed ridden.

Twenty five percent H1N1 positive patients had hypoxia and 25% had anemia. Leukopenia was seen in 50% patients and thrombocytopenia was not documented in any patient.

Liver Function Tests were deranged in 75% patients and Renal Function Tests were normal in all patients as shown in Table-III.

Blood culture and sputum culture were negative in all patients. Twenty five percent (25 %) patients suffered from pneumonia but there was no death reported in these H1N1+ve patients and all patients were improved.

Demo-graphics	Years	H1N1 Positive	H1N1 Negative	Total
Age groups by years	0 - 14	3	0	03
	15-40	0	17	17
	41-60	0	9	09
	>60	1	20	21
Gender	Male	3	23	26
	Female	1	23	24
Co-morbidity	No	3	23	26
	Yes	1	23	24
Complications	No	3	28	31
	Yes	1	18	19
Outcome	improved	4	46	50
	Death.	0	0	0

Table-I. Demographic features and outcome of H1N1 +VE & H1N1 –VE cases:

Clinical Features		H1N1 Positive	H1N1 Negative	Total
Fever;	No	0	6	6
	Yes	4	40	44
Cough:	No	0	02	02
	Yes	4	44	48
SOB:	No	1	04	05
	Yes	3	42	45
Running Nose:	No	1	46	47
	Yes	3	0	03
Sore Throat;	No	2	37	39
	Yes	2	9	11
Headache/ lethargy:	No	2	42	44
	Yes	2	04	06
Nausea/ vomiting:	No	4	46	50
Loose stools:	No	4	46	50

Table-II. Symptoms in H1N1 positive versus negative cases.

Laboratory Parameters		H1N1 Positive	H1N1 Negative	Total
Hb. Anemia:	No	3	42	45
	Yes	1	4	05
Wbcs:	Leukopenia.	2	0	02
	Normal leukocytes	1	8	09
	Leukocytosis	1	38	39
Platelets:	Thrombocy-topenia	0	2	02
	Normal platelets	4	44	48
LFTS.	Normal	1	42	42
	Abnormal	3	4	08
RFTS.	Normal	4	42	46
	Abnormal	0	4	04
Spo2.	Normal	3	32	35
	Abnormal	1	14	15

Table-III. Laboratory investigation in H1N1 positive VS H1N1 negative patients.

DISCUSSION

It was an observational study of 50 cases that were admitted according to ILI (influenza like illness) definition and MOH (ministry of health) criteria.

H1N1+ve patients clinical presentation varied from subclinical illness to severe respiratory failure and resemble those observed in patients with seasonal influenza.[16,17,18] Some clinical features of H1N1+ve patients are different from those of seasonal influenza, such as younger age and less comorbidity.[19]

The clinical features (fever, cough, sore throat, headache, lethargy) of H1N1-positive patients were almost similar to that of H1N1-negative patients. Because of ILI criteria.

Climate has effect on H1N1 infection percentage. More cases were seen in the fall than in the summer season in KSA in previous study.[20]

In our study the number of H1N1 positive patients are less than previous years.[15] This can be

due to patients of only KSA residents (100%), vaccination status and seasonal variation.[20] The distribution of cases by age were predominantly young (75 % <14 years), that are almost similar to the distribution of cases observed worldwide and in Saudi Arabia.[10,15,20]

So, the clinical parameters were generally similar as the earlier reported cases of influenza in KSA[10,15] and USA.[20]

All patients in our study presented with fever and cough, which is almost similar to the patients in USA,[20] Japan,[21] Mexico.[22] and in KSA.[10,15]

Leukopenia was observed in 50% patients and thrombocytopenia was found (0 %), that was almost similar as in earlier studies.[10,15,20]

Patients found to be hypoxemic (25%) had an average oxygen saturation of 88%. Currently literature shows that clinically severity of disease can be judged by dyspnea presence.[23]
In our study, the fatality rate was 0 % as almost seen in USA and the United Kingdom.[20]

All our studied patients received Oseltamivir, and antibiotics on admission. Bacterial cultures in sputum or blood did not show significant growth and then antibiotics were stopped.

IDSA recommend the early use of antiviral drugs in patients who need hospitalization following influenza. Even antiviral therapy within 48 hours is the recommended.

This study was not without limitations. In our study the number of cases were small, was single centered experience, all patients were Saudi residents and vaccination status of patients was not evaluated.

CONCLUSION

Mostly patients presented with mild respiratory disease. Clinical features and serological characteristics of influenza positive patients were same as reports globally and in KSA.
Early antiviral therapy in patients with influenza infection is recommended.
Health education and public awareness regarding safety precautions are important pillars in addition to surveillance, mandatory vaccination and early provision of diagnostic facilities.
Large Multicenter studies are required for further evaluation.

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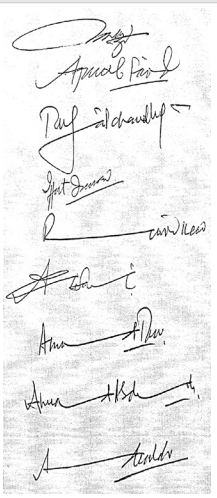
AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author(s) Full Name	Contribution to the paper	Author(s) Signature
1	Imran Nazir Ahmad	Main Author	
2	M. Ajmal Farid	Co-author	
3	Hammad Tufail Chaudhary	Co-author	
4	Iffat Imran	Co-author	
5	Rizwan Rasul Khan	Co-author	
6	Ali Saqib	Co-author	
7	Ahmad Turkistani	Co-author	
8	Ahmad Asiri	Co-author	
9	Abdullah Swida	Co-author	