

## **To Study the Morbidity and Mortality Pattern In Influenza A (H1n1) Positive Children At A Tertiary Care Hospital**

<sup>1</sup>Dr. Vishnu Agarwal, Associate Professor, Department of Pediatrics, J K Lon Hospital, SMS Medical College & Hospital, Jaipur

<sup>2</sup>Dr. Kusum Devpura, Senior Professor and Unit Head, Department of Pediatrics, J K Lon Hospital, SMS Medical College & Hospital, Jaipur

<sup>3</sup>Dr. Mukesh Solanki, Junior Resident, Department of Pediatrics, J K Lon Hospital, Jaipur, SMS Medical College & Hospital, Jaipur

<sup>4</sup>Dr. Tikam Chand Kumawat, Senior Resident, Department of Pediatrics, J K Lon Hospital, Jaipur, SMS Medical College & Hospital, Jaipur

**Corresponding Author:** Dr. Tikam Chand Kumawat, Senior Resident, Department of Pediatrics, J K Lon Hospital, Jaipur, SMS Medical College & Hospital, Jaipur

**Citation this Article:** Dr. Vishnu Agarwal, Dr. Kusum Devpura, Dr. Mukesh Solanki, Dr. Tikam Chand Kumawat, “To Study the Morbidity and Mortality Pattern In Influenza A (H1n1) Positive Children At A Tertiary Care Hospital”, IJMSIR- February - 2021, Vol – 6, Issue - 1, P. No. 11 – 14.

**Type of Publication:** Original Research Article

**Conflicts of Interest:** Nil

### **Abstract**

**Background:** This study was aimed to determine the morbidity and mortality pattern in Influenza A (H1N1) positive children.

**Methods:** This was a hospital based prospective observational study, conducted between June 2018 to March 2019 in Sir Padampat Mother and Child Health Institute (SPMCHI), Department of Paediatric Medicine, SMS Medical College, Jaipur

**Results:** In present study case fatality rate in H1N1 cases which is 3.03 %. Total number of survival cases were 128 (96.97%)

**Conclusion:** We concluded that the pre existing co-morbid conditions increases the mortality and morbidity in H1N1 patients.

**Keywords:** H1N1, Morbidity, Mortality

### **Introduction**

Influenza viruses are among the most common causes of human respiratory infections and among the most significant because they cause high morbidity and mortality. Influenza virus is a new virus which came up in late April 2009 in Kerala and probably originated in the pig farms in Mexico.<sup>1</sup> Hence, it was called swine flu. Inside the pigs a genetic re-assortment occurred to the usual influenza viruses resulting in the new H1N1 virus. The virus was introduced to human beings and thereafter spread from man to man. H1N1 pandemic had its significantly great impact in India from April 2009 to August 2010.<sup>2</sup> Influenza is an acute respiratory disease characterized in its full form by the sudden onset of high fever, coryza, cough, headache, prostration, malaise, and inflammation of the upper

respiratory tree and trachea. In most cases, pneumonic involvement is not clinically prominent. Acute symptoms and fever often persist for 7 to 10 days.<sup>3-5</sup> In the elderly, in infants, and in people with chronic diseases, influenza is associated with especially high mortality.

**Material & Methods**

**Place of study** – Department of Pediatrics, S. M. S. Medical College and attached Hospital Jaipur.

**Type of study** – Hospital based observational study.

**Study period** : June 2018 to March 2019.

**Sample Size**

The sample size was calculated at 95% confidence level alpha error 0.05% assuming 26% of the children with suspected Influenza were positive for H1N1 on throat swab specimen as per the reference article (Clinical profile and outcome of H1N1 influenza in children – a tertiary care experience).

At 8% absolute allowable error the require sample size would be 132 children with suspected Influenza illness.

**Inclusion criteria**

1. Children with confirmed H1N1 positive report.

**Exclusion criteria**

1. Age above 18 year
2. Refusal for consent.

**Methodology**

One hundred and thirty two patients with the diagnosis of H1N1 Flu were included in this study. Nature and the purpose of the study were explained fully to the parents / guardian and written consent was taken from parents or attendants of all enrolled children. A predesigned structural proforma was used to collect information. Basic demographic data e.g. age, sex, parents name, residential address was collected from all patients.

**Statistical Analysis**

Statistical analysis was performed using SPSS for Windows (Version 16.0, 2007; SPSS Inc, Chicago, IL, USA). Paired *t*-test (for continuous variables) was used to compare the variables. Statistical significance was assessed at 0.05 probability level. All the values are presented as mean ± standard error mean (mean ± SE) or numbers (%).

**Results**

Out of 132 H1N1 patients, maximum patients 71.97% were in between 0 – 5 years of age group. Other include 20.45% in between 6-10 yrs age group and 7.58% in >10yrs age group. Ninety four were males (71.21%) and 38(28.79%) were females.

Table 1: Clinical Feature of H1N1 Flu (Total number of H1N1 cases = 132)

	Fever	Cough	Coryza	SOB
Number of cases	132	131	89	37
Percentage	100%	99.24%	67.42%	28.03%

This table show clinical manifestation of H1N1 positive patients. Fever was present in all cases, cough in 99.24% cases, coryza in 67.42% cases and shortness of breath in 28.03% cases.

Table 2: Other Clinical features

Other	Number of Cases	Percentage
Diarrhoea	14	10.61
Vomiting	14	10.61
Throat pain	4	3.03
Seizure	2	1.52

This table show other less common manifestation of H1N1 patients in which diarrhoea & vomiting in 10.61% cases, throat pain in 3.03% cases, seizure in 1.52 % cases.

Table 3: Survival / Non Survival of H1N1 Cases

		Number of Cases (n=132)	%
Survival (N=128)	Only H1N1 Flu	110	83.33
	Co-Morbidity	18	13.64
Non Survival (N=4)	Only H1N1 Flu	0	0
	Co-Morbidity	4	3.03

This table shows case fatality rate in H1N1 cases which is 3.03 %. Total number of survival cases were 128 (96.97%).

**Discussion**

This was a hospital based prospective observational study, conducted between June 2018 to March 2019 in Sir Padampat Mother and Child Health Institute (SPMCHI), Department of Paediatric Medicine, SMS Medical College, Jaipur.

In our study the total no. of patients with co- morbid condition were 16.67% (n=22). The mortality rate was 18.18% in patients with pre existing co morbid condition. All non survivor cases presented with co – morbid conditions out of which one had Pancytopenia with bronchopneumonia, second had Severe anaemia with infantile tremor syndrome, third diagnosed as Septicaemia with meningoencephalitis and fourth case of Acute respiratory distress syndrome. The case fatality rate was 3.03%(n= 4) in our study probably due to higher incidence of pneumonia and other serious complications. Similarly, Chaitanya K et al.<sup>6</sup> show case fatality rate was 2.8%. Ashish Jain et al (2017)<sup>7</sup> conducted a death audit of H1N1 positive cases the case fatality rate was 6.6% (40/606) in this study.

Another retrospective descriptive study conducted by Malhotra B et al (2016)<sup>8</sup> in Rajasthan during January to March 2015, the case fatality rate was 6% in this study.

**Conclusion**

We concluded that the pre-existing co- morbid conditions increases the mortality and morbidity in H1N1 patients.

**References**

1. Taubenberger JK, Morens DM. Influenza: the once and future pandemic. Public Health Rep. 2010 Apr;125 Suppl 3:16-26
2. Jones KE, Patel NG, Levy MA, Storeygard A, Balk D, Gittleman JL, Daszak P. Global trends in emerging infectious diseases. Nature. 2008 Feb 21;451(7181):990-3. doi: 10.1038/nature06536.
3. Bhatt KN, Jethw SC, Bhadiyadar D, Patel D, Joshi K. Study of clinical profile in patients with H1N1 influenza in Surat district, June 2009 – March 2010. J Assoc Physicians India 2012;60:15-9.
4. Sharma R, Agarwal S, Mehta S, Nawal CL, Bhandari S, Rathore M, et al. Profiling the mortality due to influenza A (H1N1) pdm09 at a tertiary care hospital in Jaipur during the current season--January & February 2015. J Assoc Physicians India 2015;63:36-9.
5. Nadkar MY, Subramanian S, Ingole N. H1N1 influenza: An update. JAPI 2009;57:454-8.
6. Chaitanya K, Addanki A, Deshpande N, Karambelkar N (2018) Clinical Profile of Novel H1 N1 Influenza in Children at a Tertiary Care Centre: Pune. Pediatric Infect Dis Vol 3, No 1: 2.
7. Jain A, Sharma R, Nagar MK, Kaushik PB. A Death Audit of H1N1 Influenza Cases in a

Tertiary Care Hospital in Southern Rajasthan (Current Out Break - 2017). Natl J Community Med 2018; 9(5): 380-384

virus infections during 2015 epidemic in Rajasthan. Indian J Med Res 144, December 2016, pp 918-923.

8. Bharti Malhotra, Ruchi Singh , Pratibha Sharma, DeepaMeena, Jyoti Gupta , Aditya Atreya& B. R. Meena. Epidemiological & clinical profile of influenza A (H1N1) 2009