

Study of Variations of Swine Flu Virus Infection in Southern Rajasthan (Udaipur) at MBGH, R.N.T. Medical College, Udaipur

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Abstract: *Introduction:* The H1N1 is a novel strain of influenza A virus that has evolved by genetic reassortment. Following its emergence in March 2009 in Mexico, the H1N1 virus spread rapidly throughout the world. The pandemic influenza A H1N1 virus is now circulating as seasonal influenza A H1N1 virus. *Methodology:* The prospective study conducted on 1635 swine flu suspected patient of different age group in year [2017 - 2018]. *Result:* The cases of Swine flu in Southern Rajasthan was found to be 40.06 %, with highest numbers in the month of September 2017 followed by August 2017, Most commonly affected age group was 0 - 5 years of age & geographically maximum patient samples came from Udaipur followed by Chittorgarh & Rajsamand districts. *Conclusion:* In this study, we found that no change has been observed since last 10 years except in infection rate in different age groups by comparing various studies.

Keywords: Genetic reassortment, PCR Amplification

1. Introduction

The H1N1 is a novel strain of influenza A virus that evolved by genetic reassortment. Following its emergence in March 2009 in Mexico, the H1N1 virus spread rapidly throughout the world. The WHO declared H1N1 as a pandemic on 11th June 2009. The pandemic influenza A H1N1 virus is now circulating as seasonal influenza A H1N1 virus. The state of Rajasthan which is the largest state in India, reported its first case of H1N1 infection on 23rd July 2009. Soon the disease spread to other parts of the state.

2. Material and Method

2.1 Study Design

Epidemiological characteristics of Influenza A H1N1 cases in Southern Rajasthan from August 2017 to August 2018 were prospectively analyzed using data from the swine flu laboratory at R.N.T. medical college Udaipur

2.2 Collection of Specimen

Clinical samples (throat swabs) collected in VIRAL TRANSPORT MEDIUM (VTM) and immediately transported to Microbiology Laboratory in a Vaccine carrier box, kept at 4°C during transport upto 4 days, thereafter at -70°C.

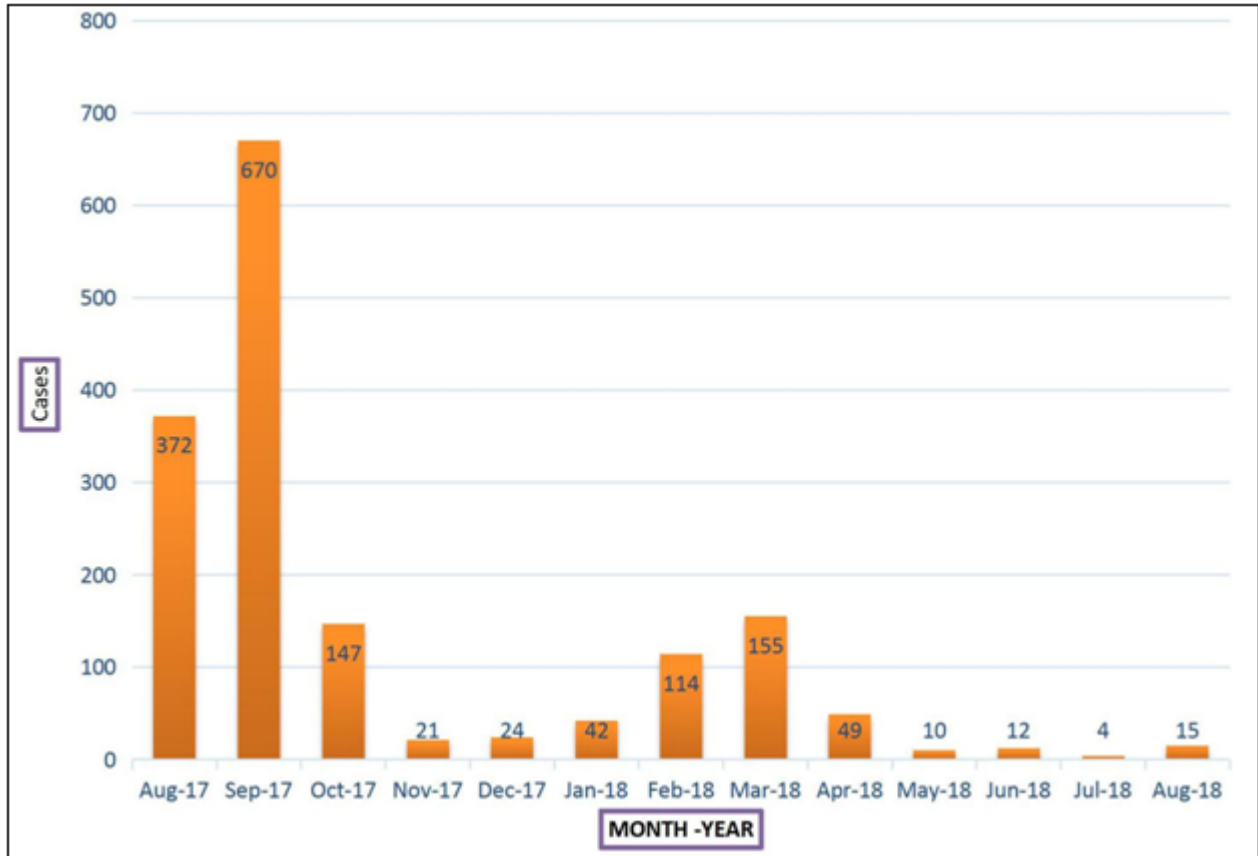
The samples were collected with proper sterile precautions.

2.3 Processing of Samples

- At first the throat swabs in VTM samples were processed in a Biosafety level II B cabinet and stored at -80°C in deep freezer.
- Viral RNA was extracted from clinical samples using spin column based ViralRNA minikit.
- Then Real-time reverse transcriptase polymerase chain reaction was performed by using a Step One Real Time PCR instrument.
- Then a master mix of 20ul was prepared in a 48 well PCR plate and the plates were placed in the AB Step One Real-time PCR instrument using cycling conditions of 50°C for 30 min. of reverse transcription followed by Taq inhibitor inactivation at 95°C for 10 min. and PCR amplification (45 cycles) which involves Denaturation at 95°C for 15 sec and Primer annealing at 55°C for 30sec.

Month wise distribution of Influenza A:

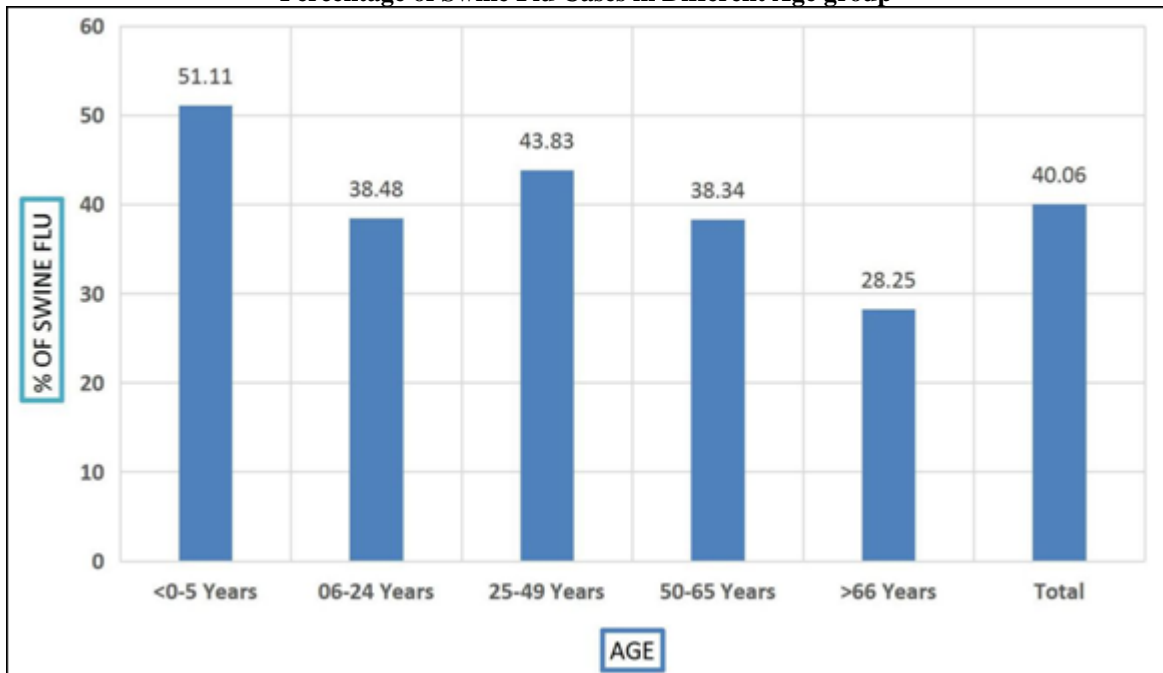
Month	Cases
August 2017	372
September 2017	670
October 2017	147
November 2017	21
December 2017	24
January 2018	42
February 2018	114
March 2018	155
April 2018	49
May 2018	10
June 2018	12
July 2018	04
August 2018	15



Percentage of Swine Flu Cases in Different Age Group

Age in Years	No. of Patient	Swine Positive	% Of Positive
<0-5 Years	90	46	51.11
06-24 Years	343	132	38.48
25-49 Years	689	302	43.83
50-65 Years	326	125	38.34
>66 Years	177	50	28.25
Total	1635	655	40.06

Percentage of Swine Flu Cases in Different Age group



Relation of Swine Flu in Male and Female 2017-2018

Sex	Total Patients	Swine Flu Positive	% Of Positive
Male	850	341	40.11
Female	785	314	40.00



3. Result

At RNT medical college from August 2017 to August 2018 , a total of 1635 patients were tested for Influenza A H1N1 of which 40.06% (655) were found to be positive for Swine flu. Maximum cases (40.98%) were detected in the month of September 2017 and patients of 0-5 years of age accounted for 51.11% of the cases . Males accounted for 40.11% and females 40.00%.

4. Discussion

The present study was conducted on 1635 swine flu suspected patients of different age groups (in 2017-2018).The cases of Swine flu in Southern Rajasthan was found 40.06%.The cases of Swine flu was highest in the month of September 2017 (40.98%) followed by August 2017 (22.75%). In the tropics, epidemic influenza tends to occur frequently in the monsoon season. The people in 0-5 years age group were maximum affected. The percentage in this age group was highest (51.11%). The immunity status of the children are comparatively low so that they are more likely to be infected. The percentage of the males and females out of 1635 patients were 40.11% and 40.00% respectively i.e. the gender pattern of the disease was found almost same in males and females.

5. Conclusion

Such surveillance data are important in global influenza vaccine preparation and for any pandemic preparedness activity. Such study gives guidance regarding seasonal variation in Epidemic trend thus helping in preparedness for the Epidemic.