

A Study On Epidemiological Profile Of H1N1 Tamilnadu

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ABSTRACT:

Influenza A virus is a common pathogen that had caused respiratory illness , pandemics and death over the past century. The emergence of a novel influenza A virus in 2009 focused attention on influenza capabilities worldwide. A lesson learnt from this influenza outbreak is that any emergency can be dealt with if a well established public health and surveillance program is available, that allows an appropriate response..

Key words: H1N1, Influenza, Tamilnadu.

INTRODUCTION:

Influenza continues to be a significant cause of morbidity and mortality globally. Genetic re-assortments in the virus can cause fast and unpredictable changes leading to recurrent epidemics of febrile respiratory disease. Surveillance is the foundation of all efforts to understand and control influenza. Effective case detection and treatment as per WHO guidelines is necessary to reduce the mortality from influenza [3] Flu pandemics are caused by new influenza viruses that have recently adapted to humans and resemble major natural disasters both in terms of recurrence and magnitude. The influenza virus, known to be circulating as a pathogen in the human population since 16th century is notable for its unique ability to cause recurrent epidemics and global pandemics. Genetic re-assortments in the influenza virus cause fast and unpredictable changes leading to recurrent epidemics of febrile respiratory disease every 1 to 3 years consistently necessitated the development of new vaccines. Each century has seen some pandemics rapidly progressing to all parts of the world due to emergence of a novel virus strain (A/California/07/2009) to which the overall population holds no immunity[1].

Influenza like Illness caused by Influenza A [H1N1], a quadruple re-assorted influenza virus, was reported from Mexico on 18th March'2009 and rapidly spread to neighboring United States and Canada. Subsequently the disease spread to all the

continents. [2-4] World Health Organization [WHO] has raised the level of Influenza pandemic alert from Phase 5 to 6 on 11th June 2009. As per WHO, India has experienced the start of 2009 Influenza pandemic. The overall severity of Influenza pandemic was moderate, implying that most people recovered from infection without the need for hospitalization or the medical care. India reported its first case on 16th May 2009 in Hyderabad. Most of the cases reported subsequently were travel related cases among those traveling to India from affected countries. Substantial number of cases reported from Maharashtra (Mumbai and Pune), Karnataka (Bangalore) and Tamil Nadu (Chennai) were indigenous cases[8]. The magnitude of the problem of Swine flu is ever increasing in India. The qualitatively and quantitatively effective case detection and treatment as per WHO guidelines is necessary to reduce the mortality from Influenza A H1N1 virus. The present study was carried out to find out the proportion of swine flu “cases” in relation to total suspected swine flu cases in one calendar year and also to study the clinic-demographic profile of the swine flu cases.

MATERIALS AND METHODS:

Study setting and design

Tamilnadu (n = 72138958) is one of the south Indian states. We reviewed the surveillance data on influenza A (H1N1) cases, which occurred during Jan2012 and December 2012. The State integrated disease surveillance project (IDSP) unit, Tamilnadu, received information regarding all diseases including A (H1N1) from all the 32 districts in Tamilnadu.

CASE DEFINITIONS

A suspected case of influenza like illness (ILI) was defined as the occurrence of acute febrile respiratory illness (fever $\geq 38^{\circ}\text{C}$) with the onset within seven days of close contact with a person who is a confirmed case of pandemic influenza A (H1N1) virus infection or within seven days of travel to areas where there are one or more confirmed pandemic influenza A (H1N1) cases, or resides in a community where there are one or more confirmed pandemic influenza cases. A suspected case of ILI with laboratory confirmed influenza A (H1N1) virus infection in an accredited laboratory through RT-PCR[6-10] was considered to be laboratory confirmed case. Death due to A (H1N1) was considered when the infection was confirmed by laboratory testing, either before or after death. All the case patients who were residents of Tamilnadu reported to IDSP from all districts, between Jan 2012 and December 2012 were included in the analysis.

DATA SOURCE, COLLECTION AND ANALYSIS:

Active and stimulated passive surveillance was set up through IDSP across all the districts in the state. Cases and deaths of A (H1N1) were notified to state surveillance unit using structured data collection tool developed by Ministry of Health and Family

Welfare. Pharyngeal or nasopharyngeal swab samples of suspected case-patients were sent to Institute of Preventive Medicine (IPM) from all treatment sites across the state. The samples were processed and analyzed using RT-PCR assay in accordance with the National protocol.¹⁵ The surveillance data available at the state IDSP cell (abstract line list of all cases and individual death reports) and IPM (line list of all samples received) was collected, collated and reviewed. Death reports had information on demographics, results of laboratory tests for A (H1N1), cause of death, time course of illness (date of symptom onset, hospital admission, start of antiviral drugs), and underlying medical conditions.

DESCRIPTIVE EPIDEMIOLOGY OF H1N1 CASES:

During the first wave of influenza A, H1N1, 750 cases were reported between Jan 2012 and December 2012 and a total number of 40 deaths in Tamilnadu as in Table 1 and the Figure 1 and Figure 2. All patients were referred to public and private hospital.

Month	Confirmed cases	Death cases
Jan-Apr 2012	58	2
May 2012	72	1
Jun 2012	85	3
Jul 2012	50	0
Aug 2012	62	0
Sep 2012	79	1
Oct 2012	86	2
Nov 2012	88	6
Dec 2012	170	25
Total	750	40

FIGURE 1

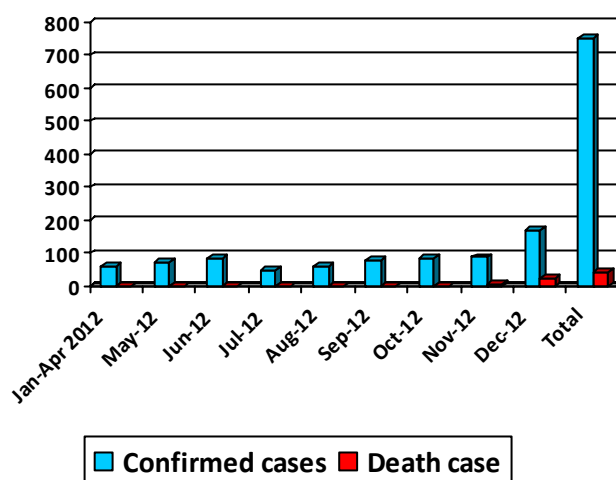


Figure 2 (The number of confirmed cases and death cases in Tamilnadu)

DISCUSSION

The maximum H1N1 2012 positively was seen during the month of August to December 2012 when the rainfall was high, as well as the temperature was low, favoring the easy spread of virus.

Unlike conventional seasonal flu which commonly affects the extremes of age. H1N1 cases were equally distributed in both the sexes. Fever was the most common clinical manifestation followed by cough, breathlessness and sore throat. Bronchial asthma and tuberculosis were found to be risk factors for the occurrence of H1N1 influenza. Pneumonia was the most common complication documented in both adult and pediatric age group.

RECOMMENDATIONS:

1. Early detection of cases can reduce the burden of disease, so the health system should be strengthened to detect the suspected cases in early stage of disease. International Journal of Health Sciences & Research (www.ijhsr.org) 38 Vol.2; Issue: 2; May 2012 Voluntary early reporting of cases should be encouraged through various health campaigns.
2. As there is a risk of cases in monsoon season, special measures should be taken during “pre-monsoon season” in the community.
3. “High alert” should be declared during monsoon season for community as well for Health system.
4. As the large numbers of cases were reported from rural area, primary health care infrastructure should be strengthened.
5. Referral system from primary- secondary- tertiary care should be strengthened.
6. Health education and preventive measures can reduce the disease transmission and overall disease burden in community.

CONCLUSION:

In Tamilnadu, the transmission of influenza H1N1 peaked during August-December months and affected individuals of all age groups with high attack rate in those aged 25-49 and 0-4 years. Most of the cases were from Coimbatore and Chennai. The case fatality was high in the age group greater than 65 years. A history of chronic comorbid condition and presentation with Pneumonia lead to poor outcomes and deaths.

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