

**Original Research Article**

Knowledge about swine flu (H1N1) among pregnant women attending antenatal care clinic in a tertiary care hospital in central India

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Abstract

Background: In India the first positive case of pandemic H1N1 was reported in May 2009 and by end of the year 2010, 20604 cases with 1763 deaths were reported. Since 2010 Maharashtra has been reporting cases of Swine flu year after year. According to the state health department, 2010 saw 6,118 swine flu cases and 669 fatalities. For pregnant women influenza may have severe clinical course leading to complications and a risk to pregnancy. Effective prevention depends on knowledge of the community regarding the causative agent, modes of spread and remedial measures about swine flu.

Methodology: This cross sectional study was conducted among obstetrics out-patient attendees of a tertiary care hospital in central India, wherein 100 pregnant women were interviewed to assess their knowledge about swine flu.

Results: 42 % study participants correctly knew that the swine flu is caused by a virus. 44 % participants correctly knew that it is an airborne infection. Most common symptoms as told by participants were Cough 57%, Fever 42%, Shortness of breath (14 %). Other symptoms known to participants were joint pain, body ache, throat Pain. 97% subjects weren't aware of the correct method of diagnosis while knowledge about preventive measures was also deficient in majority of study subjects.

Conclusions: The knowledge regarding swine flu among study subjects was inadequate. There is need to orient the preventive programmes including information, education and counselling to educate the pregnant females about swine flu (H1N1).

Keywords: Health education, Knowledge, Human H1N1 influenza, Pregnant women, Swine flu.

Introduction

Despite significant medical gains, the danger posed by emerging infectious diseases in the form

of epidemics or pandemics has become even greater. The most recent e.g., H1N1 influenza, and its dramatic spread also reminds us that we have

entered into a new age of global pandemics, largely because of the rapidity with which newly emergent pathogens are capable of being transmitted around the world.⁽¹⁾ The pandemic strain of Novel H1N1 Influenza virus, generally referred as "Swine Flu", had spread immediately to almost all the continents, since it was first recognised in early 2009. Hence, World Health Organisation (WHO) had raised the pandemic alert to Phase 6 by June 2009.⁽²⁾ 2009 H1N1 strain has been identified as the cause of a widespread outbreak of febrile respiratory infection worldwide.

In both seasonal influenza epidemics and previous pandemics, the mortality and morbidity rate from influenza infection was higher in pregnant women than in non-pregnant women.⁽³⁾ For pregnant women, certain infectious diseases, such as influenza and varicella, may have a more severe clinical course, increased complication rate, and higher case-fatality rate. Influenza infections cause more severe illness and higher mortality rates for pregnant women.⁽⁴⁾ Mechanical, immunologic, and hormonal changes in pregnancy contribute to this increased risk. More pregnant women than non-pregnant women are hospitalized due to acute respiratory diseases and cardiopulmonary cases.⁽³⁾ Women beyond the first trimester of pregnancy have increased numbers of acute cardiopulmonary hospitalizations during influenza season.⁽⁴⁾ Linda Dodds L et al conducted a 13-year (1990–2002) population based cohort study involving pregnant women in Nova Scotia. They compared rates of hospital admissions and physician office visits because of respiratory illness during the influenza season in each trimester of pregnancy with rates during the influenza season in the year before pregnancy and with rates in non-influenza seasons. Their study provides robust, population based data showing that all pregnant women are at increased risk of influenza-associated respiratory illness.⁽⁶⁾

In India the first positive case of pandemic H1N1 was reported in May 2009 and by end of the year 2010, 20604 cases with 1763 deaths were

reported. The country experienced three waves during the period of pandemic of 2009-2010, first one in 2009 September, followed by second wave in December, and the third peak in August 2010 when the end of pandemic was declared.⁽⁷⁾ While declaring the Pandemic to be over in August 2010, World Health Organization conveyed that Pandemic Influenza A (H1N1) virus that caused Pandemic [2009-2010] would circulate as Seasonal Influenza virus and would continue to do so for years to come.⁽⁸⁾

Since 2010 Maharashtra has been reporting cases of Swine flu year after year. According to the state health department, 2010 saw 6,118 swine flu cases and 669 fatalities. The first swine flu death in India—a 14-year-old girl—was recorded in Pune in 2009. 53 persons died of swine flu in Mumbai from January till August 2015, the second highest in Maharashtra after Nagpur city (70). Considering high incident cases in Nagpur, it becomes imperative to assess the knowledge of swine flu in general public and particularly pregnant women about swine flu to facilitate the changes in service provision.

Understanding the knowledge will help in designing appropriate public health education interventions to increase awareness and knowledge of the Swine flu among pregnant women.

With this background, a study was carried out to assess knowledge about swine flu among pregnant females.

Materials & Methods

The present cross sectional study was conducted in obstetrics outpatient clinic of a Government medical college and hospital in central India during July 2016 to December 2016. Study subjects were pregnant women receiving antenatal care, in these clinics, who were recruited in study after explaining purpose of study and taking written consent. For calculation of sample size, a pilot study was conducted on sample of study subjects. After analysing results from pilot study, Sample size of 98 was estimated. A total of 100 study subjects were finally included in the study.

Around 90 pregnant women daily came for antenatal care (ANC), we used simple random technique for selection of study subjects. We recruited first pregnant women who attended the ANC clinic every day. Next pregnant female was taken if first study subject did not consent for the study. Information regarding socio-demographic characteristics like age, occupation, marital status, and knowledge regarding Swine Flu disease, like cause, spread, body part involvement, symptoms, diagnosis, cure, preventive measures and source of information; was recorded in a pre-designed and pre-tested questionnaire. This knowledge was assessed by 10 factual statements that participants responded to with “yes” or “no.” A scoring system was applied to assess the level of knowledge of each subject: 1 point was given for each correct answer, and 0 point was given for each incorrect answer. The study was conducted via face to face interview using structured questionnaire in Hindi language. Data was entered and analyzed using statistical software Epi Info 7. Descriptive statistics (percentage, mean, standard deviation, range) were used to summarize baseline characteristics of the study subjects. Association between two categorical variables was analysed

by using Chi-square test and p value < 0.05 was considered to be statistically significant. The study was approved by Institutional Ethics Committee, Government Medical College, Nagpur.

Results

Socio demographic characteristic of the study population and Knowledge about Swine flu are depicted in Table.1 and 2. The mean age of study subjects was Mean age: 24.79 yrs, range being 20-34years. 42% and 58% of participants were in second and third Trimester of pregnancy respectively during the time of interview.

Majority of study subjects (83%) had heard of swine flu. Mass media (television, newspaper, internet) was most common source of knowledge for the study subjects (84%), followed by healthcare provider. 42 % study participants correctly knew that the swine flu is caused by a virus. 44 % participants correctly knew that it is an airborne infection. Most common symptoms as told by participants were Cough 57%, Fever 42%, Shortness of breath (14 %). Other symptoms known to participants were joint pain, body ache, throat Pain.

Table 1: Distribution of study subjects by socio demographic variables

Variables	Study subjects (n = 100)	
	No.	%
1. Age of study subject		
20 – 24	47	47.00
25 – 29	40	40.00
≥ 30	13	13.00
Mean age: 24.79 yrs, range: 20 - 34		
2. Educational status of study subjects		
Professional Degree / PhD	2	2.00
Graduate or Postgraduate	15	15.00
Intermediate or Post High School Diploma	50	50.00
High School Completion	30	30.00
Middle School Completion	2	2.00
Primary School or Functional Literate	0	0.00
Illiterate	1	1.00
3. Occupational status of study subjects		
Profession	0	0
Semi profession	0	0
Clerk, shop owner, farm owner	0	0
Skilled worker	0	0
Semi-skilled worker	0	0
Unskilled worker	8	8.00
Homemaker	92	92.00

4. Husband's educational status		
Professional Degree / PhD	1	1.00
Graduate or Postgraduate	9	9.00
Intermediate or Post High School Diploma	46	46.00
High School Completion	27	27.00
Middle School Completion	17	17.00
Primary School or Functional Literate	0	0.00
Illiterate	0	0.00
5. Husband's Occupational status		
Profession	15	15.00
Semi profession	10	10.00
Clerk, shop owner, farm owner	23	23.00
Skilled worker	16	16.00
Semi-skilled worker	13	13.00
Unskilled worker	21	21.00
Unemployed/retired	1	1.00
6. Socioeconomic status*		
I	2	0.89
II	2	0.89
III	13	5.78
IV	74	32.89
V	134	59.55
7. Type of family		
Nuclear	41	41.00
Three generation	1	1.00
Joint	58	58.00
8. Source of knowledge (n=100)		
Television, Newspaper, Internet	84	84.00
Healthcare Provider	37	37.00
Family member	3	3.00
9. Current trimester		
Second	42	42.00
Third	58	58.00
* - Modified Prasad's Classification (Corrected as per current CPI, Sep 2016 = 809, Base year 1986-1987)		

Table 2 Knowledge about swine flu disease

Cause		
Correct	42	42.00
Incorrect	58	58.00
Spread		
Correct	44	44.00
Incorrect	56	56.00
Organ involved		
Correct	33	33.00
Incorrect	67	67.00
Symptoms (n=100)		
Fever	45	45.00
Cough	57	57.00
Joint pain	12	12.00
Bodyache	4	4.00
Throat pain	4	4.00
Shortness of breath	14	14.00
Vulnerable Group(n=100)		
Infants	69	69.00
Old	23	23.00
Pregnant	63	63.00
Diagnosis		
Blood Investigations	65	65.00
Throat Swab	3	3.00

Don't Know	32	32.00
Is swine flu Curable ?		
Yes	70	70.00
No	12	12.00
Don't know	18	18.00
Free treatment Available		
Yes	73	73.00
No	2	2.00
Don't know	25	25.00
Preventive measures(n=100)		
Regular hand washing with soap	61	61.00
Use of face mask	57	57.00
Avoiding infected persons	14	14.00
Stop eating poultry	17	17.00
Vaccination	24	24.00
Use of handkerchief	11	11.00

Discussion

Nagpur is winter capital of Maharashtra, with a population of 2,405,421. Nagpur has been reporting regular outbreaks of swine flu. Considering the regular outbreaks of Swine flu in the study area, continuous evaluation of knowledge of general population and pregnant women in particular assumes significance. Very few epidemiological studies on swine flu are available in India. This is the first of its kind study among pregnant women in India with the objective to assess knowledge of swine flu amongst them.

In present study, 83% of study subjects had heard of swine flu which is higher than the study by Damor R et al(71%) conducted on OPD patients in Surat,Gujarat.¹⁰ and lower than that conducted by Kawanpure H et al (85.2%) conducted on rural population in Kerala.⁽¹¹⁾

In the present study mass media (television, newspaper,internet) was most common source of knowledge for 84 % of study subjects. This is similar to finding by Kawanpure H et al⁽¹¹⁾ and Chaudhary V et al⁽¹²⁾

48 % of the respondents had knowledge about the causative agent of swine flu being virus. 44% subjects correctly responded that swine flu spreads through infected droplets when an infected person coughs or sneezes. This is less than the findings reported by Kawanpure H et al (56.33%)⁽¹¹⁾, Chaudhary V et al (77.2%)⁽¹²⁾ and Rathi S et al (82%)⁽¹³⁾ .

Most common symptoms as reported by respondents were cough (57%), fever (45%), joint Pain (12%), while study subjects in study by Kawanpure H et al reported fever (71.40%) as most common symptom , followed by cough (62.40%). In our study 61% study subjects mentioned hand washing as a mode of prevention of swine flu which is less that reported on telephonic survey by Rubin et al in(87.8%)⁽¹⁴⁾ but higher than that reported by Kawanpure H et al (31.9%)⁽¹¹⁾

Knowledge about diagnosis of swine flu was very poor among respondents. Knowledge about preventive measures related to swine flu was not adequate among pregnant women.

Since pregnancy makes women vulnerable to infections, the preventive measures taken by pregnant women to protect themselves and prevent nosocomial spread to others will depend upon their level of knowledge on swine flu. It is essential to keep them informed about swine flu. Health care personnel and policy makers need to orient the preventive programmes to educate the pregnant females about swine flu (H1N1).

Strength

Major strength of the present study was targeted population group. These participants can be considered as representative of similar pregnant females utilizing antenatal services in majority of big cities of India.

Limitations

One of limitation of the present study is that it was performed in a short time during a single influenza season and in a single tertiary healthcare centre.

Conclusion

In conclusion, the present study gives a tertiary health care facility based data showing the knowledge of swine flu among pregnant females. This findings of this study imply need for introduction of information education and counselling for pregnant females.

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References

1. Nafra AK, Jacob BM, Kaur J. Knowledge of Swine Flu amongst nursing personnel. (4):172–7.
2. Mahajan PB et al. Knowledge about swine flu among patients seeking health care in a tertiary and primary health care facility in Puducherry. Heal Agenda. 2013;1(3):57–63.
3. Ozer A, Arikan DC, Kirecci E, Ekerbicer HC. Status of Pandemic Influenza Vaccination and Factors Affecting It in Pregnant Women in Kahramanmaras , an Eastern Mediterranean City of Turkey. 2010;5(12):1–5.
4. Jamieson DJ, Theiler RN, Rasmussen SA. Emerging Infections and Pregnancy. 2006;12(11).
5. Neuzil KM, Reed GW, Mitchel EF, Simonsen L, Griffin MR. Impact of Influenza on Acute Cardiopulmonary Hospitalizations in Pregnant Women. 1998;148(11):1094–102.
6. Dodds L, Mcneil SA, Fell DB, Allen VM, Coombs A, Scott J. Impact of influenza exposure on rates of hospital admissions and physician visits because of respiratory illness among pregnant women. Research. 2007;176(4):463–8.
7. Mishra B. 2015 Resurgence of Influenza A (H1N1) 09: Smoldering Pandemic in India? J Glob Infect Dis. 2015;7(2):56–59.
8. Seasonal Influenza: Guidelines for Vaccination with Influenza Vaccine. 2016.
9. <http://nagpur.gov.in/>
10. Damor R et al. Knowledge, Attitude and Practices Regarding Swine Flu among OPD Attendees of Tertiary Care Hospital, Surat IOSR Journal of Dental and Medical Sciences (IOSR-JDMS) 2015;14(7):60-64.
11. Kawanpure H, Ugargol AR, Padmanabha B.V. A study to assess knowledge, attitude and practice regarding swine flu. Int J Health Sci Res. 2014;4(8):6-11.
12. Chaudhary V, Singh R K, Agrawal V K, Agarwal A, Kumar R, Sharma M. Awareness, perception and myths towards swine flu in school children of Bareilly, Uttar Pradesh. Indian J Public Health 2010;54:161-4
13. Rathi S, Gandhi H, Francis M; Knowledge and Awareness about H1N1 Flu in Urban Adult Population of Vadodara, India. http://www.academia.edu/2848942/Knowledge_and_Awareness_about_H1N1_Flu_in_Urban_Adult_Population_of_Vadodara_India
14. Rubin GJ, Amlot R, Page L, Wessely S. Publicperception, anxiety and behaviour change in relation tothe swine flu outbreak: cross sectional telephone survey.BMJ 2009;339:2651.