

Morbidity pattern amongst Haj Pilgrims attending vaccination OPD in Tertiary care Hospital of Central India: A cross sectional study

¹Dr. Swarna Ramteke, WHO National Tuberculosis Elimination Program Consultant, Jabalpur

²Dr. Manjusha Dhoble, Assistant Professor in Department of community medicine, Indira Gandhi Government Medical College, Nagpur

³Dr. Priya Dhurve, Junior resident in Department of community medicine, Indira Gandhi Government Medical College, Nagpur

Corresponding Author: Dr. Manjusha Dhoble, Assistant Professor in Department of community medicine, Indira Gandhi Government Medical College, Nagpur

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Abstract

Background: Once in a lifetime every Muslim is expected to undergo a holy pilgrimage, known as Hajj. Every year an estimated two million Muslim pilgrims gather from all around the world to perform the holy pilgrimage .Hajj is one of the most crowded annual mass gatherings on the planet.

Objectives

- 1) To study morbidity pattern among Haj pilgrims.
- 2) To study vaccination pattern among Haj pilgrims.

Methods: The cross-sectional study was conducted in the tertiary care centre of central India during a year 2019. There were around 1082 participants who were willing to go for haj during year 2019.

Results: The age range of participants was between 12-91 years. There were only 6(0.57%) adolescents which were below 16 years of age. Maximum no. of participants were females (50.15%) as compared to

males (49.80%). Participants received only two vaccine in immunization OPD i.e. Meningococcal and Influenza. Meningococcal vaccine was received by all participants 1042(100%) whereas only 319(30.61%) received Influenza vaccine.

Conclusions: Overwhelming surge of Haj pilgrims facilitates transmission of communicable infections such as meningococcal, influenza and other respiratory infections. For the preventive measures everyone should be vaccinated with the basic vaccines which are recommended by the Ministry of minority affairs.

Keywords: Haj pilgrims, Meningococcal, Influenza, morbidity

Introduction

Once in a lifetime every Muslim is expected to undergo a holy pilgrimage, known as Hajj, which takes place in the 12th month of the Islamic lunar calendar. Every year an estimated two million Muslim pilgrims gather from all around the world to perform the holy

pilgrimage [1]. With another 0.5 million pilgrims from the host country, the Hajj is one of the most crowded annual mass gatherings on the planet [2], [3], [4].

As Hajj has to be completed in a specified period of time many of the pilgrims use their lifetime savings for this purpose. They are often reluctant to seek early medical advice, as this might affect their tight time schedule. When they do seek medical advice, they are always in a hurry to leave the hospital so as to avoid missing any of the Hajj rituals [5].

Hajj imposes a great deal of physical and mental stress on pilgrims. The physical stress comes from travel and walking during performance of Hajj rituals. This mass migration entails some of the world's most important public-health and infection control problems. Although distances are small, congestion of the Hajj poses high physical, environmental, and health-care demands [6].

Prolonged close contact, physical exertion and overcrowding in a semi-closed setting increase the susceptibility of pilgrims to airborne infections, including Meningococcal disease and Influenza [4], [7].

The Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices (ACIP) and the American Academy of Family Physicians now recommend that all adults above age 50 be routinely offered the vaccine, in addition to younger people with chronic medical conditions. Influenza vaccinations may significantly reduce mortality and morbidity in patients who suffer from chronic conditions like congestive heart failure (CHF), diabetes mellitus (DM), chronic obstructive pulmonary disease (COPD), chronic renal failure (CRF), immunosuppressive conditions like malignancies, alcoholism, asthma, emphysema, rheumatic diseases and ischemic heart diseases and therefore the vaccine is recommended in these conditions. Influenza

vaccination is recommended annually [8], [9], [10], [11].

The Meningococcal vaccine can be used in selected populations in certain situations such as during an outbreak, during inter epidemic periods to persons living in dormitories and immune-compromised individuals, to travelers, pilgrims, people attending fairs and festivals in large numbers. In these situations a single dose of bivalent vaccine is recommended 10-14 days before the scheduled visit. However for Hajj pilgrims, as a national policy, NICD Delhi is administering the quadrivalent polysaccharide vaccine to fulfill the requirements of the Government of Saudi Arabia [12]. Along with the recommended vaccination the high risk group including diabetes and cardiovascular diseases has been reported as a rising leading cause for morbidity and mortality amongst pilgrims. Hajj is arduous even for healthy adults—for those with pre-existing cardiac disease, the physical stress can easily precipitate ischemia. The onus is on the pilgrim to avoid the Hajj if their cardiac status is precarious, and clinicians must encourage this preventative stance. Cardiac patients planning for the Hajj should consult with their doctors before the journey; ensure sufficient supply of, and compliance with, medications. They should avoid crowds, perform some rituals by proxy, and report to the closest health centre [13].

Objective

- 1) To study morbidity pattern among Hajj pilgrims
- 2) To study vaccination pattern among Hajj pilgrims.

Materials and Methods

- 1) Study type and setting

The cross-sectional study was conducted in the tertiary care centre of central India IGGMCH Nagpur during a year 2019

2) Study population

The study populations were all Haj pilgrims attending vaccination OPD under department of community medicine Indira Gandhi government medical college Nagpur.

3) Sampling technique and sample size

Sampling was done through convenient sampling method. Those who reported for vaccination in immunization OPD were included. There were around 1082 participants who were willing to go for Haj during year 2019.

4) Data collection tools and techniques

After taking consent all Haj pilgrims were interviewed and data were collected on pre tested questionnaire.

Two vaccine were mainly given through OPD were Meningococcal and Influenza. Meningococcal vaccine was given to almost all pilgrims willing for haj. Influenza vaccine was given to certain pilgrims those who were at risk including old age and those were having morbid conditions in form of hypertension, diabetes and asthma.

5) Data analysis

Data were entered and analysed by Microsoft Excel and Epi Info(7).

Results

According to table no.1 total 1042 participants willing to go for Haj attended immunization OPD during year 2019, Out of which maximum participants belonged to age group 45-64 years contributing 56.14%. Participants were belonged to 12-91 years age group. There were only 6(0.57%) adolescents in our study which were below 16 years of age. In our study maximum no participants were females (50.15%) as compared to males (49.80%). Meningococcal vaccine was received by all participants 1042(100%) whereas only 319(30.61%) received Influenza vaccine.

According to the morbidity pattern of participants, more than half participants i.e. 60.46% were not having any kind of morbidity while 13.91%, 9.50%, 2.11%, 2.11% were having Hypertension, Diabetes, Thyroid disorders and others respectively. In others the participants reported Asthma, Heart disorders. Total 124(11.90%) of participants reported combined morbidity i.e. Hypertension and Diabetes

According to fig.no.1 which shows the distribution of study participants according to morbidity and vaccination pattern, out of total 630 participants who were not having any morbidity amongst those 559 participants received Meningococcal while only 71 received Influenza vaccine depending upon the age pattern. The most common morbidity which was Hypertension, 145 participants reported hypertension alone whereas 124 participants were Hypertensive along with Diabetes. Amongst those participants who were having Hypertension only 71 received Influenza vaccine. Similarly for the second most common morbidity Diabetes, which were reported by 99 participants, among those 70 participants received Influenza vaccine.

Table no.2 shows association between Hypertension and vaccination status. It shows that participants those having Hypertension 65.51% received Meningococcal where as 34.48% received Influenza which was more compared to participants without morbidity. Similarly in table no 3 which shows association between diabetes and vaccination status, amongst all diabetic 70.70% participants received Influenza vaccine which was more compared to non-diabetic participants or the participants without morbidity. The association between hypertension and diabetes with vaccination status was found to be statistically significant with p value-0.00 for both.

Table 1: Distribution of study participants according age, gender, and vaccination status and morbidity pattern

Variables	Number	Percentage
Age (years)		
<16	6	0.57
16-44	290	27.83
45-64	585	56.14
>64	161	15.45
Gender		
Male	519	49.80
Female	523	50.19
Vaccination status		
Meningococcal	723	69.38
Influenza	319	30.61
Morbidity pattern		
No morbidity	630	60.46
Hypertension	145	13.91
Diabetes	99	9.50
HTN/DM	124	11.90
Thyroid disorders	22	2.11
Others	22	2.11

Figure 1: Distribution of study participants according to morbidity and vaccination pattern

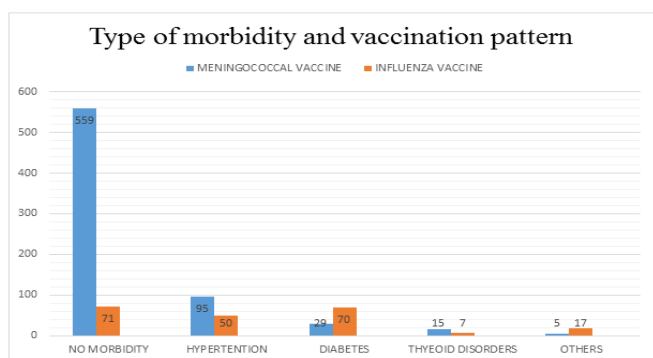


Table 2: Association between most common morbidity Hypertension and Vaccination status

Vaccination status	No morbidity	Hypertension	Significance (P*)
Meningococcal	559(88.73)	95(65.51)	Chi-square =48.207 df =1 P = 0.000
Influenza	71(11.26)	50(34.48)	

Table 3: Association between most common morbidity Diabetes and Vaccination status

Vaccination status	No Morbidity	Diabetes	Significance (P*)
Meningococcal	559(88.73)	29(29.29)	Chi-square =193.742 df =1 P = 0.000
Influenza	71(11.26)	70(70.70)	

Discussion

The present study was an attempt to assess the pre-existing medical conditions and vaccination status among the haj pilgrims who were willing to go for Haj during year 2019. According to table 1, majority (56.14%) of the participants belonged to age groups 45-64 years. Similar study done by Rashid H et al, shows that the maximum participants belonged to the age group 16-44 years. This difference may be due to study carried out on different geographic settings. The study done by Bakhsh R et al[14], shows that near about 59% of study participants were belong to age group 45-64 years which are comparable with our study findings. For all participants ages ranged from 12 to 91 years which are slightly comparable with the study done by Yousuf M et al [15] i.e. 20-104 years. In our study maximum no. participants were females (50.15%) as compared to males (49.80%), this can be comparable with study done by Meysamie A et al [16], reveals that 49% were female and 51% male participants. Another similar studies done by the Al-Ghamdi SM et al[17], Bakhsh R et al, Badahdah AM et al[18], shows that the male participants were more in number i.e.62%,55%,69% respectively.

In our study we found most common morbidity in haj pilgrims as hypertension followed by diabetes and thyroid disorders. The prevalence of hypertension in our study was 14% which is comparable with study

done by Yousuf M et al, where they found 14.9%. Similarly the study carried out by Yousuf M et al, and Al-Ghamdi SM et al shows the higher prevalence of hypertension i.e.24% and 17.5% respectively. The prevalence of 8% was found in study done by Meysamie A et al, which was lower as compared to our study. For the second most common morbidity which was diabetes we found 9% prevalence. The study done by Beshyah SA et al[19], Al-Ghamdi SM et al and Yousuf M et al shows the diabetes prevalence as 19%,15% and 21% respectively which was higher as compared to our study. On the other hand the study carried out by the Meysamie A et al and Khan ID et al [20], shows lower prevalence i.e.3% and 4%. The prevalence of thyroid disorders was found to be 2.11% in our study, when compared with similar study done by Khan ID et al which shows prevalence of 0.19% which is lower as compared to our study. The reason for higher thyroid disorders prevalence may be the maximum number of female participant's i.e. 50.19%. In our study 100% participants received Meningococcal vaccine whereas only 30.61% received Influenza vaccine. The vaccination rate was lower for the Influenza because it was preferable given to those who were having morbidity or extreme age. The study carried out by Meysamie A et al and Badahdah AM et al, shows the Meningococcal and Influenza vaccination rate as 99.8%, 74% and 76%, 29% respectively which is somewhat comparable to our study. The similar studies done by Rashid H et al and Nabeth P et al [21], shows the Influenza vaccination rate as 37% and 36% which are comparable with our study. The study on Influenza vaccination done by m Razavy SM et al shows the vaccination for Influenza was 75% which is higher as compared our study

Conclusion and Recommendations

Overwhelming surge of Haj pilgrims facilitates transmission of communicable infections such as meningococcal, Influenza and other respiratory infections. This mass gathering can lead to Influenza pandemic as many participants from different country gather at one place. For the preventive measures everyone should be vaccinated with the basic vaccines which are recommended by the Ministry of minority affairs. On other hand most of Haj pilgrims belong to old age and having one or more morbidity, so before going for Haj everyone should do basic routine examination.

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