Hajj and Swine Flu Pandemic (H1N1, 2009): What Is Expected and What Should Be Done?

We are now witnessing the evolution of the first infectious pandemic in the twenty first century. This pandemic seems to be one of the most rapid growing pandemics ever recognized. Since confirmation of the disease by World Health Organization (WHO), all continents were involved in less than 6 weeks. The number of cases has increased dramatically (millions in some counties) and it is now estimated that for every reported case, nearly 140 other undetected cases should have occurred. In October 2009, more than 5700 deaths were attributed to the disease worldwide, but many believe that the true figure might be much higher even we are not in the coolest months of the year in the north hemisphere yet. It is probable that we may confront with a second pandemic wave of the disease which may occur in late winter or early spring of the new year. It may be more contagious, include more cases and with a higher mortality rate and hospitalization and need for admission in intensive care units.

Although swine flu vaccine has been introduced by several pharmaceutical companies, there are still shortages of resources to provide vaccine to the neediest populations. Treatment of swine flu with oseltamivir is now possible but there are still increasing number of resistance to this drug. Zanamivir is an alternative but it is more expensive. Currently from more than 10,000 virus isolates worldwide, only 39 viruses were oseltamivir resistant, all with identical H275Y mutation while none were resistant to zanamivir.

Therefore, the question is that are we ready enough to confront an ongoing pandemic flu and thoroughly predict the future consequences? We just know that a pandemic flu has happened but the entire impact and the evolution of the disease are not clear yet. Hajj is one of the largest religious gatherings in the world including about 3 million people who attend this holy event. One third of attendees are inhabitants of Kingdom of Saudi Arabia (KSA) and others are Muslims from more than 90 other countries. This event would take place at the end of November 2009, a time that we expect a rise of new cases because of colder weather. The question is that the Hajj can affect the world pandemic and lead to an increase in its dimensions?

Current data indicates the increased risk of transmission of the disease in large gatherings such as Hajj ceremony. In gatherings like Hajj, people are very close to each other and their separation is not possible. Social personal contacts like hand shaking are very common in this ceremony. Attendants might be exhausted during the last part of this holy ceremony which also might decrease their immunity and increase the possibility of acquiring infections. All these factors may increase the risk of infection in attendees and also increase the risk of transmission to others after their return to their homelands.

In July 2009, more than 70% of cases of swine flu which were noticed in Islamic republic of Iran (IRI) were either related to visits to KSA or from direct contacts to such visitors. At that time the policy was to prevent people from visiting KSA. The result was a dramatic decrease in number of new cases from more than 50 to 10 cases per week. Tunisia may probably be the only Islamic country that will not allow anyone to participate in the new coming hajj ceremony but other nations will attend hajj ceremony from all over the world.

Would hajj pilgrim result into a rise in new cases is dependent on the local activity of disease. Till late October 2009, more than 9000 affected cases with 35 deaths of swine flu were reported in KSA which is one of the highest figures in the region. The related data were not updated in the last month and the current situation in KSA is not clear yet. As was mentioned during Hajj people from more than 90 countries attend the pilgrim. Many of these countries are now experiencing a very rapid surge in the number of cases with swine flu and it is quite possible to have many patients with the disease coming to the event. Considering the mentioned points and the suggestion of WHO officials that the risk of swine flu transmission might be increased during hajj we should answer the question that: What we can do?

One of the major decisions in this regard was preventing the attendance of high risk people in hajj ceremony including children less than 5 years, adults older than 65 years, pregnant ladies, patients on immunosuppressive drugs and those with uncontrolled diabetes and severe obesity. This was approved in special meeting of ministers of health of eastern
Mediterranean region of WHO, in August 2009. As more than 60% of deaths due to swine flu are among patients aged between 25-40 years with no underlying condition, this recommendation would not eliminate the risk of death among attendees but probably would decrease the number of cases who need hospitalization and intensive care.\textsuperscript{13,14}

People with any febrile disease should not attend hajj ceremony. Vaccination for swine flu would be wise for attendees of the pilgrim, but in reality there is not enough available vaccine especially for incoming hajjis from poor countries. Although published data revealed few severe adverse events from vaccination, public debate on safety of vaccine still continues and preference for vaccination is not as high as expected.\textsuperscript{4} Seasonal vaccine is much more available but has no effect on swine flu. Nowadays, in almost every country, the most common circulating virus causing flu is the pandemic flu. In October 2009, WHO reported that from a total number of 151070 specimens which were positive for influenza viruses, 93,450 (61.9\%) were pandemic H1N1, 6821 (4.5\%) were seasonal A (H1), 19,800 (13.1\%) were A (H3), 26,461 (17.5\%) were A (Not subtyped) and 4538 (3\%) were influenza B. The only rule for a seasonal vaccine might be the theoretical decrease in the chance of the new virus gene reassortment.\textsuperscript{4}

Chemoprophylaxis with oseltamivir during hajj is another possibility. Many western countries have used oseltamivir prophylaxis in their summer camps for children and adolescents in this year. It was effective in decreasing the number of new cases but at the same time oseltamivir resistance increased in circulating virus. As most cases of swine flu are subclinical, health impact of chemoprophylaxis is not clear. Cost effectiveness of chemoprophylaxis is not proved and there are data against it.\textsuperscript{15} In general such an approach is not considered to be cost effective.

More importantly, education of hajjis for respiratory and hand hygiene precautions is necessary. Hajj attendance in many instances is the first foreign travel of the attendees. Many are from far rural areas and quite a large number of them are illiterate. Education and maintaining the highest possible level of awareness in this group of population is not easy but is of utmost importance. Even literate hajjis may not understand Arabic well and use of pictorial warnings is probably more effective. Many of these future hajjis attend special classes to be educated about the way to perform the pilgrim correctly. These religious classes are a good opportunity to convey hygienic messages at the proper time. To accomplish this goal, getting the support and cooperation of clergymen and clergywomen is mandatory. There are many successful experiences on this type of cooperation in health promoting activities in IRI and this year it was used for promoting respiratory hygienic precautions among future attending hajjis. Availability of understandable consultations which could be provided by nonprofessional but educated volunteers could also help to reduce the irrational fears and share the hygienic precautions with hajjis.

Wide availability of hand washing facilities including soap, running water, hand sanitizers and preferably tissues are other important issue. Those who have attended hajj would surely recognize the difficulties in maintaining hygienic removal of garbage and cleaning of toilets especially during the most crowded days such as in Arafat Sahara, Mashaar al Haram and Mena.

Although the main route of transmission of swine flu is from person to person,\textsuperscript{16} the rule of publicly used objects such as door handles, stair guards, steel counters, table tops, light switches cannot be ignored. The virus can survive on these surfaces for up to 24 hours.\textsuperscript{17} The importance of maintaining cleanliness of these possible transmitting routes could not be more emphasized. At least, daily cleansing of these objects are highly recommended. Having a personal praying map could be also helpful. Use of face mask for those who have flu is recommended to reduce the possibility of disease transmission to others but wearing of mask in healthy people to prevent disease acquisition has not been proved to be effective. If masks are used, they should be removed when they start to become wet and should be discarded in a plastic bag to avoid further viral dissemination.

Access to health care providers when needed is also an important issue. Iranian Red Crescent Organization employs a physician for every 120 hajjis population. This physician stays with the hajjis all the day during pilgrim. More or less, similar facilities are provided by several other countries, but many hajjis especially those who attend personally on their own expenses and those who come from poor countries do not have access to such facilities.

For those who become sick during pilgrim, it may be a good strategy to establish isolation rooms in the hotel and inns. These people should receive care at their residence place and not to go around for care except in an event of severe form of disease mandating hospitalization.

Arrangement of crowded welcome parties is a common tradition after their return to their country. In
these gatherings again, hand shaking and face kissing and other personal contacts are very common. Both hajjis and their relatives should be advised to postpone these gatherings especially if the hajji has influenza like symptoms and personal contacts should be minimized. Again respiratory precautions should be promoted among hajjis and their relatives through educating programs. In this setting it is recommended that by the entrance of Hajjis to their countries a complete evaluation should be done especially in suspicious cases. Such cases should be advised to restrict their social communications at least for 7 days.

In conclusion, as the first infectious pandemic of the world is evolving, every effort should be made to mitigate the pandemic flu. Hajj pilgrim has the potential to increase the dimensions of this disease if we do not cooperate on health promotion, preventive and therapeutic measures. It is possible to make such cooperation as a real happening. Special session of meeting of health ministers of the Eastern Mediterranean Region was a good beginning but this should be continued and reaffirmed. Other countries especially the members of Organization of Islamic Countries (OIC) should also be involved. The religious leaders and hajjis themselves should also be informed and brought to the fight against this disease.

Keywords: Hajj; Swine Flu; Pandemic; H1N1

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