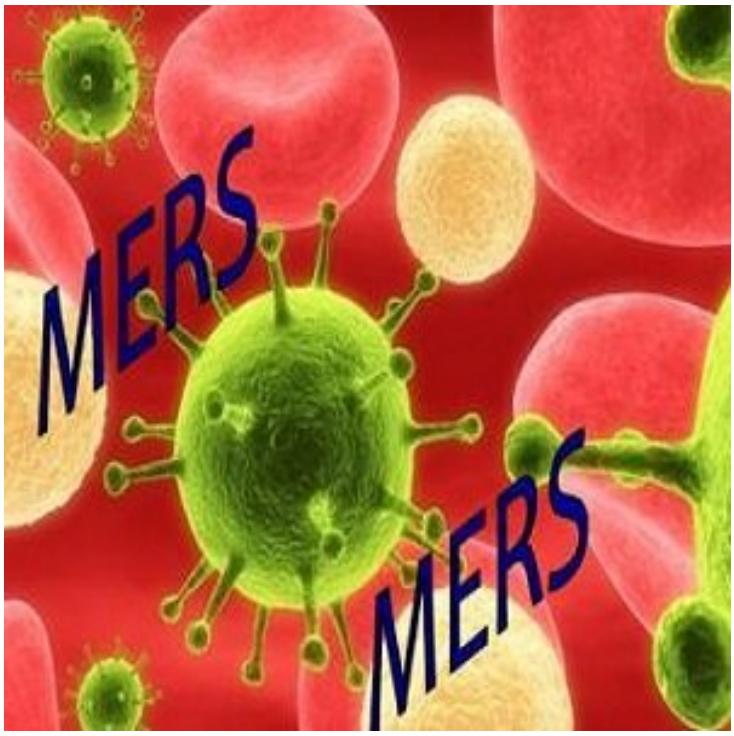
BioSpectrum
the business of Bio & Health Sciences
ASIA EDITION

A pandemic awaits!

April 24, 2013 | Analysis | By BioSpectrum Bureau



Singapore: With hajj pilgrimage nearing, the panic button is hit. As faithful Muslims over the globe gear up for their one- in-life-time pilgrimage, a prowling superbug worries experts. With 700 cases and 287 deaths MERS being the deadlier cousin of SARS, lays its icing hands on 18 countries including the US, Saudi being the epicenter. The holy city of Mecca witnesses around 7 million pilgrims during hajj and this paves the way for a pandemic with a potential to wash out the entire planet. As WHO, CDC and other scientists remain clueless about a vaccine or therapy, MERS multiplies, with soaring cases in April 2014.

"MERS is a threat to the entire world" warned Ms Margaret Chan, the Director-General of the World Health Organization (WHO).

The whole story started as an incessant common cold, in two patients in Saudi who then died of renal failure and shortness of breath in a hospital in Jeddah. Investigations, of the sputum samples showcased a new superbug to the world which was then called the novel corona virus 2012, later named as The Middle East respiratory Syndrome or MERS. Though the virus originated in Saudi, it could not be restricted to the borders due to cross border travel of Saudi citizens. Victims complain influenza-like symptoms with fever, cough, cold and shortness of breath.

WHO has not declared the disease as an international emergency, but has imposed a "level two" travel alert which includes guidelines and precautionary measures to people travelling to the infection prone areas.

"We see more cases, but we do not see increased evidence for person-to-person transmissibility. And so, that was the major reason for why they said we do not think this meets a public health emergency of international concern right now," said Mr Keiji Fukuda. Head of health security, WHO.

Ã?Â

The impact once a global outbreak occurs could be severe as scientists fear that, they have very little knowledge about the virus, or how it spreads. Testing methods have not been upto the standards and false positive cases are also reported that cause unnecessary panic. Speculations are made that the virus originated in camels and bats and that they are fuelling the spread, but no conclusive proof exists till date. Some studies indicate the presence of the virus in camel milk and meat products too, however this could not be nailed in as the etiology. Since the mode of transmission is still a mystery, there is a struggle to curb the spread of the virus.

The genome of the virus in not mutating as the SARS virus, however MERS is deadly and less treatable than SARS

Many mandates across the globe have begun their hunt to develop a potential vaccine to curtail the spread. However experts, worry that testing the safety and efficacy of the developed vaccine, can take well over six years and thus the current solution to the outbreak is not on developing a vaccine, but on identifying and blocking mode of transmission. Commercial incentives to develop a vaccine and study its efficacy too remain a challenge for companies.

"There are many things we still don't know about the virus and it remains a deadly mystery. This just highlights the need to learn more about the transmission, the route of infection" said WHO Media relations officer Tarik Jasarevic, to a news report.

Developments in Vaccine:

Nevertheless, scientists from US, China and Hong Kong are attempting a vaccine for the deadly disease. Studies published in a leading scientific journal reveal the findings of virus neutralizing antibodies which marks the initial step towards developing a vaccine.

Ã?Â

University of Maryland School of Medicine and Novavax, Inc. claimed that an investigational vaccine candidate was developed, and is currently under animal studies. The Chinese scientists, led by Mr Linqi Zhang declared the identification of two neutralizing antibodies (MERS-4 & MERS-27) to the virus which can serve as prophylactic and therapeutic interventions against MERS-CoV infection.

Ministry of health, Saudi has also announced that it is under the process of preparing a vaccine with the help of National Scientific Committee for Infectious Diseases and five international vaccine collaborators. Another concern, Pennsylvania-based Inovio Pharmaceuticals, is developing a synthetic DNA vaccine encoding the MERS "spike" protein, designed to mimic an infection and elicit an immune response. If it proves successful in animal studies, Inovio's vaccine could be ready for testing in humans within five years.

Negligance by Saudi Health officials:

WHO and all the member states potentially affected by the virus, are alarmed at the rate at which it is spreading. Experts commended that these infections could have been nipped at the bud, if Saudi authorities had a systematic approach to the issue. Even after 20 months of initial outbreak, the knowhow of the virus is still in dark, and apparently no case control study has been conducted by the Saudi officials to identify the mode of transmission or etiology.

Head of health security, WHO, Mr Keiji Fukuda, said, "There are critical gaps in information and in particular the continuing lack of a case-control study - an essential starting point for determining where a new disease is coming from, who it is infecting, and how. "In principle, everybody accepts that the studies are important to do, and that they may yield some of the critical information that is wanted, but ... it has been slow."

Ã?Â

Impact on Asia:
Though Asia has reported only a handful cases, Asian continent too is in the MERS radar. The first MERS death, was

witnessed in Asia, when a Malaysian man who went on pilgrimage to Mecca through Jeddah in March, was found to have been infected. Malaysia quarantined 64 people in southern village after this incident. Sporadic cases of infection have been reported in Philipines, Myanmar too.

"Being an air travel hub, the pandemic in Asia, is just a flight away" said a WHO spokesperson to a news report.

Since Asia has the largest population and a sizeable number of Muslims, the chances of a pandemic outbreak in Asia remains high. Also Asia being an air hub, has a huge number of people travelling across geographies for trade, business and tourism, the chances of importing the virus into its countries is substantial. A lot of developing countries in the continent too, is a concern as poor hygienic practices in those countries may result in a large population encountering the virus.

As a precautionary measure, many individual countries like India, Malaysia, Indonesia, Singapore and Vietnam have started their MERS surveillance check at airports, where travelers from the Middle East are screened for temperatures and other symptoms. As hospital acquired infections is more in MERS, member states have issued strict orders to scrutinize and quarantine patients with cough or MERS like symptoms. Asian countries are spreading MERS awareness by advertising guidelines on health ministry website and through newspapers.

Countries like Philipines, Egypt and many others are lecturing their Haj participants on preventive measuresÃ?Â

Singapore is a key Asian transport and a financial hub that welcomes around 53 million passengers a year. "If you have visited the Middle East region, particularly Jordan, Qatar, Saudi Arabia, United Arab Emirates (UAE) Oman or Kuwait, and develop fever and respiratory symptoms within 14 days after your return, you should see a doctor immediately," said Dr Jenny Low, Senior Consultant at the Department of Infectious Diseases, Singapore General Hospital (SGH).

Ã?Â

Centre for Disease Control and Prevention (CDC) has designed travel notices to equip the travelers with necessary travel related information. Countries, have urged their citizens to get vaccinated before travelling to critical areas.

Haj Pilgrmage:

As Saudi fails to contain the surging cases, there is a greater worry of exporting the virus to the globe through the Haj pilgrimage that begins in October this year. Mecca sees a constant stream of around 7 million pilgrims throughout the year from around the world, and their numbers swell during the holy month of Ramadan. Notably most of the international pilgrims travel to Mecca through port of Jeddah which has seen maximum number of cases.

More MERS cases in April, has raised eyebrows questioning, Saudi's preparation for the pilgrimage. The Hajj Ministry's website, which many international pilgrims refer to, for information, makes no mention of MERS or special precautions. Nations like Egypt, are thinking of banning its citizens from Haj pilgrimage.