Editorial

Ebola Virus Disease – Global Scenario & Bangladesh

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Ebola virus disease (EVD), caused by one of the Ebola virus strains is an acute, serious illness which is often fatal when untreated. EVD, previously known as Ebola hemorrhagic fever, is a rare and deadly disease. It first appeared in 1976 in two simultaneous outbreaks, one in Nzara, Sudan, and the other in Yambuku, Democratic Republic of Congo. The latter occurred in a village near the Ebola River, from which the disease takes its name.[1,2]

On March 23, 2014, the World Health Organization (WHO) was notified of an outbreak of EVD in Guinea. On August 8, WHO declared the epidemic to be a 'Public health emergency of international concern'.[3] The current 2014 outbreak in West Africa is the largest and most complex Ebola outbreak.[1]

It is to be noticed that the most severely affected countries, Guinea, Sierra Leone and Liberia have very weak health systems, lacking human and infrastructural resources and these countries recently emerged from long periods of conflict and instability.[1]

The virus family Filoviridae includes three genera: Cuevavirus, Marburgvirus, and Ebolavirus. Till date five species have been identified: Zaire, Bundibugyo, Sudan, Reston and Taï Forest. The recent outbreak belongs to the Zaire species which is the most lethal one, with an average case fatality rate of 78%.[1,4] Till 6 December 2014, total 17,834 suspected cases and 6,678 deaths had been reported; however, WHO has said that these numbers may be vastly underestimated.[5]

The natural reservoir for Ebola has yet to be confirmed; however, fruit bats of the Pteropodidae family are considered to be the most likely candidate species.[1,2,6] Ebola can be transmitted to human through close contact with the blood, secretions, organs or other bodily fluids of infected animals such as fruit bats, chimpanzees, gorillas, monkeys, etc. Ebola then spreads through human-to-human transmission via direct contact (through broken skin or mucous membranes) with the blood, secretions, organs or other bodily fluids of infected people, and with surfaces and materials (e.g. bedding, clothing) contaminated with these fluids.[1]

Health care workers have frequently been infected through close contact with patients with suspected or confirmed EVD while treating them and when infection control precautions are not strictly practiced.[1] This risk is particularly common in parts of Africa where health systems function poorly and where the disease mostly occurs.[7] In the United States the spread to two medical workers treating infected patients prompted criticism of inadequate training and procedures.[8]

Burial ceremonies in which mourners have direct contact with the body of the deceased person can also play a role in the transmission of Ebola.[1] Sixty nine percent of the cases of Ebola infections in Guinea during the 2014 outbreak are believed to have been contracted via unprotected or unsuitably protected contact with infected corpses during certain Guinean burial rituals.[9]

People remain infectious as long as their blood and body fluids, including semen and breast milk, contain the virus. Men who have recovered from the disease can still transmit the virus through their semen for up to 7 weeks after recovery from illness.[1]

The incubation period, that is, the time interval from infection with the virus to onset of symptoms is 2 to 21 days. Humans are not infectious until they develop symptoms. First symptoms are sudden onset of fever, fatigue, muscle pain,

headache and sore throat. This is followed by vomiting, diarrhoea, rash, etc. Laboratory findings include low white blood cell and platelet counts and elevated liver enzymes.[1]

It can be difficult to distinguish EVD from other infectious diseases such as malaria, typhoid fever and meningitis and it is not easy to diagnose. Confirmation that symptoms are caused by Ebola virus infection are made using the following investigations: enzyme-linked immunosorbent assay (ELISA), antigen-capture detection tests, serum neutralization test, reverse transcriptase polymerase chain reaction (RT-PCR) assay, electron microscopy and virus isolation by cell culture.[1]

Supportive care - rehydration with oral or intravenous fluids - and treatment of specific symptoms, improves survival. There is as yet no proven treatment available for EVD.[1]

Raising awareness of risk factors for Ebola infection and protective measures that individuals can take is an effective way to reduce human transmission. Risk reduction messaging should focus on several factors like reducing the risks of wildlife-to-human transmission and human-to-human transmission and also on outbreak containment measures.[1]

Health care workers caring for patients with suspected or confirmed Ebola virus should apply extra infection control measures to prevent contact with the patient's blood and body fluids and contaminated surfaces or materials such as clothing and bedding, wear face protection besides routine measures. Samples taken from humans and animals for investigation of Ebola infection should be handled by trained staff with utmost care and processed in suitably equipped laboratories.[1]

The infections of two health care workers in Dallas, USA and a nurse in Madrid, Spain have revealed the truth that even highly developed nations are not immune. Still, Asia has some advantages as it readies itself for Ebola. Flight patterns suggest that the influx of travelers from Ebola-stricken West African countries to the Asian continent is far less than it is to Africa, Europe or North America.[10]

The recent outbreak affecting several nations also alarmed the public health sector of Bangladesh. But virus and healthcare experts have assured that there is nothing to be anxious about Ebola in Bangladesh as it has been categorized as among the least threatened countries by the World Health Organization (WHO) on August 8, 2014 in its first Emergency Committee meeting.[11]

Bangladesh Government has already taken effective preventive measures suggested by WHO, which include careful screening of the people coming back home from Ebola affected countries and also giving adequate safety training on the threat of Ebola exposure to the people going to those countries.[11]

It is a matter of relief and contentment that the Institute of Epidemiology, Disease Control and Research (IEDCR) laboratory of Bangladesh has the capacity to primarily identify an Ebola patient but the identified samples need to be sent to the US Centers for Disease Control and Prevention (CDC) headquarters in Atlanta for a confirmed result which could take a couple of days.[11]

Moreover the WHO has promised all necessary technical support to Bangladesh and requested the government to increase vigilance and screening at ports. As part of an ongoing countrywide 90 day Ebola alert from October 2014, screening centres and health desks have been set up at 25 ports, including three international airports and two seaports of the country. Health directorate officials said 15 isolation wards at district hospitals near the ports have been kept ready to provide treatment if any suspected Ebola patient was found. A 20 bed specialized ward is also set to be opened soon at the Kurmitola General Hospital in Dhaka. Officials said 3,167 personnel - doctors, nurses and sanitary inspectors who work at the health desks at the ports - have been provided specialized training on Ebola detection, management and handling.[12]

Till date there is no effective treatment or no vaccine could be invented to fight against this lethal virus. Rather we have to surrender to the old dictum - 'prevention is better than cure'. The only tools at our hands are public awareness and strict maintenance of universal precaution and avoiding handling of remains of infected animals or persons.

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