

Ebola Virus Disease: an Emerging Threat to Pakistan

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Received date: Jan 17, 2017, Accepted date: Jan 19, 2017, Published date: Jan 24, 2017

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Editorial

Ebola virus disease (EVD) is considered as the prototype pathogen of viral haemorrhagic fever and a reason of high mortality rates. The high fatality, coupled with the lack of treatment options and vaccination, causing this virus an imperative community health pathogen and bioterror pathogen of category A [1]. EVD virus consequences in a deadly acute febrile hemorrhagic illness revealing several clinical manifestations ranging initially, from fever and fatigue prior to descending into headaches, vomiting, violent diarrhea, followed by multiple organ failure and massive internal bleeding [2].

EVD is caused by Ebola virus species in humans and nonhuman primates (gorillas, monkeys and chimpanzees) [3]. EVD belongs to the family Filoviridae, genus Ebolavirus, and has five recognized species, among which first four can cause infections in humans, namely Zaire ebolavirus, Sudan ebolavirus, Tai Forest Ebolavirus, Bundibugyo ebolavirus and Reston ebolavirus [4]. The virus was for the first time discovered in 1976 when two unrelated Ebola haemorrhagic fever (EHF) outbreaks occurred in northern Zaire (Yambuku) and southern Sudan. It was given the name 'Ebola' after the small river in the vicinity of the catholic mission of Yambuku, the epicenter of the 1976 EHF outbreak [5]. Since 1976, there have been 885,343 suspected and laboratory confirmed cases of EHF in West Africa making this part of the world persistently facing the disease [6].

Ebola virus is not limited to Africa. Specie, Reston ebolavirus (REBOV), was depicted in cynomolgus monkeys (*Macaca fascicularis*) imported from the Philippines (Manila) to a quarantine facility in Reston, USA in 1989. Consequently, REBOV has been re-isolated from cynomolgus monkeys and familial pigs in the Philippines [4]. The current March 2014 outbreak in West Africa is the biggest and multifaceted Ebola outbreak since the Ebola virus was first recognized in 1976. More cases and mortalities have been reported in this epidemic than all others collective mortalities due to EVD. It has also broaden between countries preliminary in Guinea then distributing across land borders to Sierra Leone and Liberia [7]. On 8 August 2014, the World Health Organization (WHO) affirmed the EVD outbreak to be a community health disaster of global concern and the spread of the disease demands a synchronized response [8]. On September 30, 2014, the Center for Disease Control and Prevention (CDC) confirmed the first Ebola case in the United States (US), with three further cases being widely reported thereafter [9]. EHF outbreaks have a case fatality rate of 50-90%, so far no specific drug or vaccine is available for people and/or animals hosts [10]. First time in the history of world a disease has been so dreaded that it has threatened the existence of any nation, as told by Liberian defense minister to the United Nations Security Council in Liberia where, more than 1000 person have died of Ebola HF including more than 80 health workers [11].

Ebola virus seems to penetrate the host through abrasions in the skin, mucosal surfaces, or by means of parenteral means. It is considered that Ebola spreads through human-to-human transmission by means of direct contact with the secretions, blood, organs or other bodily fluids of infected person, and with surfaces and materials (e.g., bedding, clothing) polluted with these fluids. The majority of human infections in outbreaks seem to occur by direct getting in touch with infected patients or cadaver [12]. Transmission in health care settings has found to be associated frequently with EHF outbreaks in Africa [13]. Maintaining a high index of suspicion should only be based on adequate knowledge of the disease among the care providers. Healthcare practitioners are at the maximum risk of contagion, as they could come into direct contact with patients' blood or fluids. Personal protective equipment (PPE) recommended by WHO including double examination gloves, medical mask/ face shield, impermeable gown, goggles, shoe and head covers can protect the role in protecting from infection. Efforts should be made by the government to issue guiding principles concerning the personal protective practices of healthcare professionals and clinical case management of EVD, including treatment approaches and prevention of EVD in hospital settings.

The public health significance of EHF lies not only in its potential to cause significant mortality and morbidity, but also its potential for nosocomial spread. Being an extremely communicable infection EHF can stretch to other parts of the world due to continuous movement of people in different areas of the world. WHO Representative in Pakistan Dr Michel Thieren said "Ebola virus a big threat; since Ebola virus is spreading faster across the world, Pakistan is also at a high risk of it. Pakistan government should take speedy precautionary measures and steps against the deadly disease. As per WHO, there are no Ebola affected patients in Pakistan right now, however, if even a single affected patient entered in country without screening can cause the outbreak."

Keeping in view the threat of reaching this fatal infection to Pakistan, the Federal Ministry of Health has issued recommendation to take preventive measures against it [14]. It has notified that it may reach Pakistan owing to regular movement of people to the African countries and this danger of import of virus needs urgent preventive actions. The Government of Pakistan has set forth the screening facility at the airports for the persons arriving from Africa. It is also significant to remind the Crimean-Congo hemorrhagic fever occasionally called the "Asian Ebola virus" which is prevalent in specific parts of Pakistan with small epidemics in different period of time [14].

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