



A review on viral infection diseases

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Abstract

Virus is the tiny organisms that causes infections in human body. It exist almost everywhere. Many types of viruses that cause various infection diseases. Especially Ebola virus diseases, Zika virus and Swine influenza virus are running in the world. The spreading of disease mainly through the transmission of blood and body fluids from one to other person due to inadequate hygienic procedures. These viral infection can cause a systemic inflammatory response and immune suppression finally that leads to body organs failure due to the damage of the blood vascular systems immune systems. According to the World Health Organization, Extensive research investigations are needed to develop vaccines and drugs for the treatment of above viral infection diseases.

Keywords: virus, ebola, zika, swine flu, vaccine

Introduction

Viral infection occur when an organism body is invaded by virus and virions (virus particles). After it enters the human body, the virus attaches to the cells and produce new virions and causes diseases. Virus are looking like tiny organisms and exist almost everywhere. Many types of viruses that cause various infection diseases. Now this time, mainly three viral infection diseases are running in the world. Especially Ebola virus diseases, Zika virus and Swine influenza virus. Ebola is a viral hemorrhagic fever disease of humans and enter in to the body through skin breaks and infect to human cells (immune cells, epithelial cells and blood cells). It virus

contain single-stranded, non-infectious RNA genomes ^[1]. It is one of the most virulent and deadly diseases. Zika virus is a mosquito-borne flavivirus ^[2]. Its genome is single-stranded RNA which has nucleotides encoding with amino acids ^[3]. It infect to human dendritic cells and lymph nodes through bloodstream ^[4]. Swine influenza virus is also called pig influenza and influenza A (H1N1). In pigs, three influenza-A virus subtypes (H₁N₁, H₁N₂ and H₃N₂) are the most common strains are infected to human body ^[5]. The H number is a viral hemagglutinin protein, while the N is a type of neuraminidase enzyme on the surface of the virus. Both the hemagglutinin and the neuraminidase are involved in the infection process.

History

Table 1

Title	Ebola virus	Zika virus	Swine influenza virus
Common Names	Ebola hemorrhagic fever (EHF)	Mosquito-borne flavivirus (ZIKV)	Swine-origin influenza virus (S-OIV)
Family	Filoviridae	Flaviviridae	Influenza
Spread	Bats and fruit bats	Female <i>Aedes aegypti</i> mosquito	Pig
Year	1976 in Zaire	1947 in Uganda	1918 in North American

Classification

Table 2

Ebola virus	Zika virus	Swine influenza virus
<ol style="list-style-type: none"> Zaire Ebolavirus (ZEBOV) -1976 in in Yambuku. Sudan Ebolaviruses (SUDV) – 1976 in Nzara and Sudan. Reston Ebolaviruses (RESTV) – 1989 in Covance. Tai Forest Ebolaviruses (TAFV) – 1994 in Africa. Bundibugyo Ebolaviruses (BDBV) – 2007 in Bundibugyo. 	<p>For ZIKV, a variety of mosquitoes from the genus <i>Aedes</i> are viable vectors. These include <i>A. africanus</i>, <i>A. aegypti</i>, <i>A. vitattus</i>, <i>A. furcifer</i>, <i>A. apicoargenteus</i>, and <i>A. luteocephalus</i>.</p>	<ol style="list-style-type: none"> Influenza-A subtype H1N1, H1N2 4, H2N35, H3N16. Influenza –C

How It Spread

Table 3

Ebola virus	Zika virus	Swine influenza virus
Ebola virus is transmitted in human from monkeys, gorillas, baboon, chimpanzees and fruit bats ^[6, 7] . The incubation period: Symptoms will be appear within 5 to 7 days.	Zika virus is transmitted in a human - mosquito - human transmission cycle. It can be transmitted from the mother to the fetus during pregnancy ^[8] . Incubation period: Approximately 12 days	Swine flu is spread from person to person through close contact and direct and indirect touch, or Cooking pork of Mexico. Symptoms will be appear within 10 days ^[9] . Incubation period: Approximately 10 days

Symptoms

Table 4

Ebola virus	Zika virus	Swine influenza virus
Weakness, muscle pain, fever, vomiting, headache, breathingless, abdominal pain, chest pain, decreased blood clotting, vomiting of blood, Bleeding into the whites of the eyes ^[10] .	Fever, headache, joint pain, red eyes, rash on the skin. Infection during pregnancy causes microcephaly, undevelopment brain of some babies ^[11] .	Fever, body aches, cough, sore throat, difficulty breathing, diarrhea and vomiting ^[12] .

Treatment and Prevention

Table 5

Ebola virus	Zika virus	Swine influenza virus
People who care for those infected with Ebola should wear protective clothing including masks, gloves, gowns and goggles ^[13] . Giving either oral rehydration therapy (slightly sweet and salty water to drink) or intravenous fluids, maintaining their oxygen status and BP (blood pressure) and treating them for any complicating infections.	Vaccination, Antiviral Therapy and Ayurvedic Treatment ^[14] . Avoiding mosquito bites, reducing sexual transmission, and controlling the mosquito vector.	Nose and mouth must be covered with disposable tissues while coughing or sneezing. Touching the eyes, nose or mouth without washing hands must be totally avoided. Vaccination treatment is mostly control the diseases ^[15] .

Conclusion

Ebola, Zika and Swine influenza viral infection has been a tremendous threat to human individuals due to its highly infectious. The spreading of disease mainly through the transmission of blood and body fluids from one to other person due to inadequate hygienic procedures. There is an immediate requirement of conveying the information to the public and conducting training programmes for health care professionals and other hospital members. Extensive research investigations are needed to develop vaccines and drugs for the treatment of above viral infection diseases.

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