

# Knowing Ebola

2016, March 4th

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In June of 1976, a factory worker in Nazara, Sudan was found with a mysterious fever. He was admitted in a hospital immediately but unfortunately he died within 12 days. In the same year more than 280 people were found with the same case and got died about 150 in Sudan. When Sudan authorities were trying to identify the reason behind the deadly disease, Zaire of Congo got affected by the same disease. But this time the outbreak was more devastating than the previous one. In initial report the infected number was 318 and 280 were deaths, which indicates 88 percent fatality rate. After this alarming incidence the health authorities took the issue seriously and started investigating on the cause of that mysterious death. After different studies a Virus was found as the culprit, which has quite similar identity as the Margburg Virus which was another reason of hemorrhagic fever, but the new virus had some differences from the Margburg. This virus was named after the location of the rapid incidence. 'Ebola' a river passing by Zaire was selected then. Basically the river's name was selected so that people can recall the first devastating outbreak of the Virus. This virus took 100 lives in Gabon from 1994 to 1997, 250 lives again in 1995 in Democratic Republic of the Congo; in 2000 to 2001 in Uganda it took 224 lives. In total from the beginning to 2012, more than 1500 deaths were recorded in different countries for the virus.

In March 2014, the disease got out of control and WHO formed an emergency committee to prevent Ebola to be the next pandemic. Surprisingly the number of infected and death from Ebola rose to 28,638 suspected cases and 11,315 deaths till 17 February 2016 in Africa. This data is only recorded one but actual data is quite more than it.

Now come to the point, what actually Ebola is? Ebola is basically a virus which matches with the Margburg Virus but having genomic and some structural difference than Margburg.

Ebola is also known as Sudan Virus or Zaire Virus. This highly contagious RNA virus spreads by body fluid like blood, lymph or vomit. Ebola disease also known as the 'Care Giver's Disease' as the care givers are playing the most risky role and very prone to get affected by the victim. This virus also carried by different primates like monkey or chimpanzees and also spreads by fruit bats. There are five known listed strains of Ebola Virus till recent days. Ebola enters to the human or other primates' body through two proteins, cholesterol transport protein and TIM 1. Within 20 days the host (affected patient) dies from over bleeding from hemorrhagic rashes in body.

Sign and symptoms of Ebola are divided according to days like, day 7 to 9 the suspected symptoms are fever, headache, and fatigue. After 10th day the vomiting with blood is reported, in day 11 brain damage with bleeding from nose, mouth is seen. And after 12th day massive internal bleeding causes death.

The major problem of EVD is, it is difficult to distinguish from other contagious and infectious disease like malaria or yellow fever. But WHO has mentioned some specific procedure to identify or investigate the disease, like RT-PCR assay (reverse transcriptase polymerase chain reaction), ELISA (antibody-capture enzyme-linked immunosorbent assay), serum neutralization test, antigen-capture detection tests and electron microscopy.

About the prevention and cure, there is another bad news. There is no vaccine or cure for Ebola disease so prevention is the only way to save one from this horrific death. From the previous decade there are some researches going on to find a solution to save the affected victims. Until 2014 there were some vaccine developed against Ebola but none of those were approved by the USFDA as those vaccines were showing some lethal (deadly) side effects on other primates. But in July of 2015 the vaccine VSV-EBOV (Vesicular Stomatitis Virus-Ebola Virus) showed some positive effect on one Ebola victim in a clinical trial. This vaccine was created by the National Microbiology Laboratory of Canada.

This topic didn't stay only in the public health issue rather it took the concern of the national security system as it can be a terrific bioweapon. Ebolavirus is listed in biosafety level 4 agent, and categorized in Category A bioterrorism agents. This categorization is done by the Centers for Disease Control and Prevention. All the agents of Category A are highly risky for any nation as it can spread very rapidly and can be used for mass death. There were different controversial points rose in 2015 on this issue throughout the world.

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