

Top Killer Viruses

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Abstract: *Infections are what viruses are. Viruses can infect people. They are not retrained by bacteria. proof filters because of their small size, which makes them ultrafilterable. a virus has order own; intracellular parasites. a virus frequently damages the host by killing the host cell in process. Examples of well-known viruses that can infect humans are COVID-19, AIDS, measles, and smallpox. Long term effects can potentially heighten the susceptibility illnesses contribute to Almost all viruses have that envelops known as a capsid. Almost all viruses have that envelops the nucleic acid in a shell known as a capsid. Prion's humans, and are remarkably resistant to inactivation. Viral mRNA must be translated into viral proteins by the virus using the ribosomes of their host cell.*

Keywords: Killer Viruses, wildlife diseases, Ecosystem impact, Emerging pathogens, Infectious Disease, zoonotic disease , Public health

I. INTRODUCTION

WHAT IS A VIRUS?

A virus is a microscopic, contagious organism that replicates within All of the genes are made of either DNA or RNA and include the biological information of the virus that has been encoded. There are numerous ways for viruses to spread. All virus species have a specific if many are about the host species of tis sue they.

Structure and function:

Viral structure and function Smaller and smaller are viruses. The virus's primary function is to transfer its genome—either DNA or RNA—to the host cell so that it The following are the characteristics of viruses: • with a protective envelope around them.

- Spikes aid in the viruses' ability to adhere
- These viruses replicate but do not develop, respire, or metabolise.
- Their nucleic acid core, which consists of DNA or RNA, is encased in a c capsid protein covering.
- They are regarded as both nonliving and living entities. When these viruses are not within host cells, they are dormant; but, when they are, they become active. These viruses use in the host cell to multiply and create many infections.

II. RESEARCH METHODOLOGY

The research methodology employed in this study involved an extensive review of literature on each of the top killer viruses, spanning historical records, scientific journals, and public health reports. Data was collected and analyzed to understand the origins, transmission patterns, and the human response to each virus. The methodologies used in studying these viruses included epidemiological studies, molecular biology techniques, genomic sequencing, and mathematical modeling to predict the spread of the viruses.

TYPES OF KILLER VIRUSES:

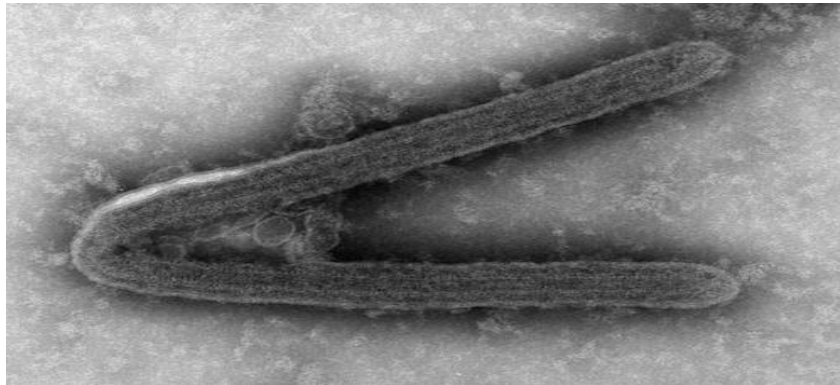
1. Murburg virus

Humans can get haemorrhagic fever, which is a serious and frequently fatal illness. Human-to human transmission is the means by which the Marburg virus spreads from humans to fruit bats. In humans, it results in severe viral haemorrhagic fever. The MVD takes two to nine days to incubate. There is no transmission during the incubation

phase. A patient must be in close contact with another person for the virus to spread from one person to another. bodily fluids (vomiting, urine, saliva, respiratory secretions, and faeces) that contain high virus concentrations can result in infection, particularly if the fluids contain blood. Affected semen can spread following clinical recovery.

The onset of symptoms is abrupt and is characterized by myalgia, headache, chills, and fever. a maculopapular rash appear following it is noticeable on the trunk (chest, back, and stomach). Then, symptoms like diarrhoea, vomiting, could manifest. worsen pancreatic severe weight bleeding, and malfunctioning of multiple organs. Marburg haemorrhagic does not currently have Early combined and increases survival. Although a number of bloods, immunological, and pharmacological l therapies are being developed, there is currently no approved treatment that has been shown to neutralise the virus.

Since research on Marburg virus is still ongoing, preventive measures a against infection are not well defined. However, one strategy to guard against infection is to stay away from fruit bats Africa. Similar to other haemorrhagic fevers, prevention measures are employed here. In cases where a patient's diagnosis of Marburg haemorrhagic fever is suspected or confirmed, barrier nursing techniques ought to be employed to avoid making .



Negative stained transmission electron microscopic (TEM) image of Marburg virus virion. Source: CDC PHIL 7219/ Fred A. Murphy

Clinical phrases

The following describes the presentation Marburg hemorrhagic fever. Take note that becausecases phases overlap.

Incubation: 2– 21 days, with a 5–9 day average.

Oversimplification

Phase: From the day of clinical symptoms to the fifth day. A high fever of 104 °F (~40°C) and an abrupt, intense headache are the symptoms that MHF presents with. Additional symptoms include chills, exhaustion, nausea, vomiting, diarrhoea, pharyngitis, a maculopapular rash, abdominal pain, conjunctivitis, and malaise.

3. Initial Organ Phase: From Day 5 to Day 13. In addition to conjunctival, viral exanthema, prostration, edoema, and C NS symptoms like encephalitis, confusion, delirium, apathy, and aggres sion, there are other symptoms as well. Usually manifesting late, hemorrhagic symptoms signal the end of the early organ phase and can either eventually lead to improvement or wor sening and death. Bloody stools, ecchymoses, and blood leakage are among the symptom Day 13 through is the The symptoms of both split constellations.

After entering a convalescence phase, survivors may experience psychosis, ocular symptoms, asthenia, hepatitis, myalgia, and fibromyalgia. Death usually happens between days 8 and 16. Fatal cases worsen furt her, with symptoms including persistent fever, obtundation, coma, convulsions, diffuse coagulopathy, metabolic disturbances, shock, and death . Two viruses—the Morburg viruses and the Filoviridae family— cause MVD.

CAUSES:

Marburg viruses are native to equatorial Africa's dry forests. The majority of Marburgvirus cases involved mines. It that had been successfully isolated from a healthy Egyptian fruit bat t

hat had been captured in a cave. This isolation clearly indicates that visiting caves infested with bats increases the risk of contracting a play role of Marburg viruses. To determine whether Egyptian roulettes are the true hosts of MARV an

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d RAVV or if they only act as intermediate after contracting virus from more research is required. Interaction however, cause 1967). Unlike Ebola, which has been linked to prolonged spells followed by conditions that cause spread to humans have not yet been identified. The majority of marburgvirus infections were frequently linked to individuals who worked visited caves.

A 2009 report detailed the successful isolation of infectious MARV and RAVV from a healthy Egyptian fruit bat that had been captured in a cave. This isolation strongly implies that visiting caves infected with bats is a risk factor for contracting marburgvirus maintenance. To determine if Egyptian roulette's are the real hosts of MARV and RAVV or if they contract the infection through contact with another animal, more research is required.

TRANSMISSION:

Uncertainty surrounds the specifics of MVD's original human gearbox. Although the precise pathways and bodily happens bats or another natural host, such as nonhuman eating When a human comes into close contact with bodily fluids like blood that are infected, they can contract motor neuron disease (MVD). Transmission events are comparatively uncommon; were known one of which combined MARV and RAVV.

PREVENTION:

(needles, as well as medical supplies).

- Steer clear customs require interacting with a deceased person whomay have had suspected or confirmed MVD.
- Steer clear of Egyptian roulette bats, their natural habitats (mines, caverns, infested buildings, etc.), nonhuman primates (chimpanzees and monkeys), and any bodily that have been prepared from these or other unidentified animals. Steer clear of places (like where reside as well as supplies). Steer clear of funeral or burial customs that entail interacting with the body of deceased person may have had *suspected or confirmed MVD*.

Steer clear of natural caverns, any raw meat or bodily fluids that may have been handled by other unidentified Steer clear of places (like mines or caves) where fruit bats are known to reside.

TREATMENT:

The Marburg virus disease a specific treatment. The patient should supportive hospital therapy, which includes blood pressure and oxygen status maintenance, replacement of lost blood and clotting factors, treatment for any complicating infections, and fluid and electrolyte balance.

2. Ebola Virus

A virus is of severe and disease Ebola. Fever, vomiting, diarrhoea, bleeding, and frequently even death are among the symptoms. Both humans and other primates (chimpanzees, gorillas, and monkeys) can contract Ebola. The greatest hemorrhagic viral epidemic in in March 2014 the the Ebola outbreak in West Africa. Almost 40% of those infected with Ebola during this outbreak perished. The Ebola virus is the cause the but disease as Ebola virus disease (EVD)

. The virus known in five strains. People four of them. One solely affects pigs and nonhuman primates, such as gorillas, chimp anzees, and monkeys. Near the Ebola River in the Democratic Republic of (formerly Zaire), EVD was first discovered in and Liberia in West in The Centres for Di sease Control and Prevention (CDC) during the 2014– 2016 outbreak, 11 individuals received treatment in In the Democratic Republic of the Congo, EVD is still a problem With recurring outbreaks.



Ebola: Johns Hopkins Medicine

SYMPTOMS:

Eight to ten days after an individual contracts the virus, symptoms of EV D typically start to appear. manifest, the virus cannot be transferred individual.

- Fatigue are examples of early symptoms.
- Cough
- Ankle pain
- Deficiency Later indications may consist of:
 - Sickness
 - Discharge
 - Abdominal pain
 - Unexplained bruises, including nosebleeds, urine, or diarrhoea

CAUSES:

The Ebola virus is the cause of EVD. Its beginnings or how it came to be are unknown.

According spread by notably bats, who in turn spread it to animals. There is no evidence that be spread by like mosquitoes. A person can infect others and spread the virus to others.

Compared to common viruses like the It does not spread via food, drin k, or the air. The virus is transferred by coming into close contact with:

- The virus-infected person's blood
- virusinfected bodily including their breast milk, stool, saliva, semen, sweat, rine, or vomit
- Items
- Animals carrying including When someone comes into direct contact with contaminated blood, fluids, or an it could be through their A cut, scrape, abrasion, or an open wound can all have broken skin. The majority have a very chance contracting virus. The danger rises if you:
 - Visit a location where known of happened.
 - Assist in providing care for a person who has the virus.

TREATMENT:

As of right now, EVD cannot be treated with medication. There certain medications being tested. Managing your symptoms is the primary aim of treatment. Among the options are:

- Drinking fluids to stay hydrated
- Managing and replenishing salts and other chemicals
- Sustaining blood pressure levels
- Taking medication to treat pain, nausea, diarrhoea,

Hantavirus

The hantavirus family of viruses, which is primarily transmitted by rodents, can cause a wide range of illness symptoms in people all over the world. contract from infection. "New World" hantaviruses those found and are thought to be the cause of hantavirus pulmonary syndrome (HPS). can be caused by sometimes referred to which primarily found in Europe and Asia. All ages and genders are susceptible to infection. Individuals who come into contact with materials run the risk of becomi ng infected. inadequately (such as grain bins, sheds, barns, garages, ventilation systems, trailers, lifts, that have the majority of When vehicles or stored equipment like may come into contact with it.

SYMPTOMS:

Since there are so few HPS cases, it is impossible to determine the "incubation time" with certainty. However, based on the scant information available, could appear one to eightweeks after coming into contact with newly contaminated rodent saliva, droppings, or urine. Initial Symptoms Fatigue, fever, and muscle aches, particularly (thighs, hips, back, and occasionally shoulders), are some of the initial symptoms. These are universal symptoms. In addition, headaches, lightheadedness, chills, and stomach issues like nausea, vomiting, diarrhoea, and pain are possible. Approximately 50% of patients with HPS encounter these symptoms. Late-Stage Signs The late symptoms of manifest four to ten days

following the initial phase lungs fill with fluid, these symptoms include coughing and shortness of breath, as well as what one survivor described as a "...tight Why do infections occur? class of viruses known as hantaviruses is capable seriously infecting people. person may contract a hantavirus when they:

- Touch items or consume by occur during Breathe or saliva that have been released into air.
- carrying a hantavirus (a rare occurrence). All viruses, with the possible do not spread through direct contact between individuals.

TREATMENT:

A specific vaccine, treatment, or cure for hantavirus infection We do know, that infected may better if they are identified quickly and receive treatment in an intensive care unit. Patients in critical care receive oxygen therapy and are intubated to help them through severe respiratory distress. is to admit the patient to care less likely that a patient will respond well

to treatment if in distress. Thus, consult your if you have been around rodents and fever, muscle aches, or severe Telling your doctor that you have been around rodents help them monitor like may be carried by rodents.

Lassa Virus

A virus that is prevalent in West African nations can cause Lassa fever. One kind of viral haemorrhage fever that can result in uncontrollably bleeding is called Lassa. The majority of Lassa fever patients only experience mild symptoms like headaches, fatigue, and fever.

However, 20% or so of those who contract it have severe illness. There is an increased risk of miscarriage and other major women. that have excrete urine and faeces. Additionally, spread through bodily fluid contact with an infected individual. Every year, between 100,000 and 300,000 people in West African countries contract Lassa fever. have been in the or other of the world. Acute viral fever, or Lassa Fever, is endemic in West countries. Benin, Ghana, Guinea, Liberia, Mali, Sierra Leone, and Nigeria a Lassa fever a 1% case-fatality rate overall.

estimated 100,000 to 300,000 people in West Africa contract the Lassa virus annually, in 5,000 Unfortunately, because disease surveillance is not always conducted, these estimates are There is a 2–21 day incubation period for Lassa fever. Humans contract it by coming into contact with food tainted rodent urine or When a person comes into contact with a blood, tissue, secretions, or excretions, the virus may spread from person to person. Person-to-person infections are hospitals that do not have sufficient.

Lassa virus shows below :

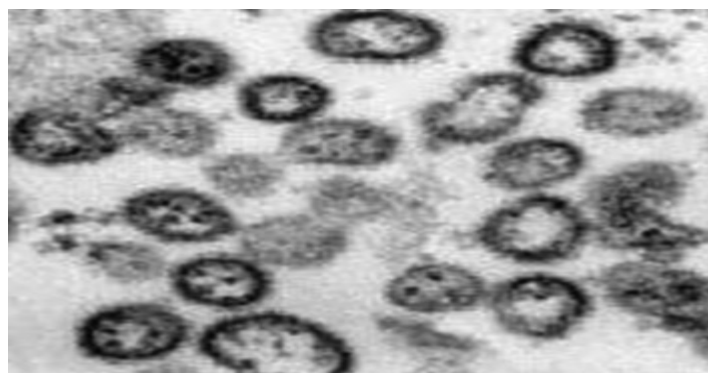


Photo by: Sciencedirect.com

SYMPTOMS:

- Lassa fever symptoms and signs to weeks after the patient to the virus. Approximately 80%of Lassa fever virus infections mild symptoms undiagnosed. A slight fever, general weakness and malaise, and mild symptoms. However, in 20% of infected individuals, the disease progress to more serious symptoms as (in the nose, gums, or eyes, example),

respiratory distress, vomiting swelling of the back, chest, and abdomen pain, and shock. have also been neurological encephalitis, tremors, and hearing loss.

- Deafness is the most of Lassa fever. About onethird of infections in degree of deafness, and hearing loss is frequently irreversible. As far as is known, the severity of the illness no on this complication; deafness in mild severe cases. The illness the of 15% 20% of patients for Lassa fever. That being said, only 1% of Lassa virus infections are fatal. Pregnant women in their third trimester have a notably high death rate. With an estimated 95% mortality rate in foetuses of infected pregnant mothers, spontaneous abortion is a serious infectionrelated complication.
- Clinical diagnosis of Lassa fever is to the and of symptoms.epidemics linked to Lassa fever can in a 50% casefatality rate patients.

PREVENTION:

- The primary goal of prevention is to manage the rat population through "community hygiene." This entails:
 - frequent hand washing
 - keeping food in with seals
 - Keeping trash outside of the house
 - owning cats as pets
 - Staying away from blood and other bodily fluids when tending to ailing family members. • adhering to safe burial practises
 - wearing well other gear when working
 - It is not possible to completely eradicate the *Mastomys* rat due to its extensive distribution. Therefore, keeping these rodents away from human habitation is the primary goal.
 - In regions where Lassa fever poses Organisation organisations endeavour to increase public awareness.
- ~Some other deadliest virus in the world :

The bird flu Virus

The fact that cases result death may help to explain the frequent panic caused by the different strains. However, the chance of catching one of the most wellknown strains, H5N1, is actually very low. Only coming into close expose to the infection. It's said that this explains why the majority of cases occur in Asia, where hens are a commonplace sight.

2. TheCrimea-Congo fever

Ticks are the vector of the virus that causes Crimea-Congo fever. way it spreads is similar to that of the Marburg and Ebola initial stages patients exhibit haemorrhages throat.

3. The Machupo virus

Black typhus, or Bolivian hemorrhagic fever, is linked to results severe and like that causes spread person person is frequently carried by.

4. Kyasanur Forest Virus (KFD)

In 1955, researchers found in forests on India's southwest coast. Though hard to identify any carriers, it is spread by ticks. Boars, birds, and rats are thought to be potential hosts. Those who contract the virus experience severe headaches, high fevers, and sometimes evenhaemorrhaging in their muscles.

III. CONCLUSION

The study of top killer viruses in zoology emphasizes how vitally important conservation, research, and monitoring are. It is essential to develop measures for the prevention and control of these viruses since they continue to represent major hazards to wildlife and the ecosystem. Working together, scientists, wildlife experts, and policymakers can effectively address these new viral threats. To protect the fragile balance of biodiversity on our world, more investigation and attention to detail are required.

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