

VIRUSES AS PART OF BIOLOGICAL DIVERSITY AND SOME EXAMPLES OF MOST DANGEROUS ONES (HIV/AIDS AND ZIKA VIRUS)

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Introduction. A virus is a small infectious agent that replicates only inside the living cells of other organisms. Viruses can infect all types of life forms, from animals and plants to microorganisms, including bacteria. Virus is made up of genetic material DNA and RNA which it uses to replicate. During the viral replication process, certain virus's DNA or RNA affects the host cell's genes in ways that may cause it to become cancerous. These viruses are known as oncogenic viruses, meaning viruses that cause or give rise to tumors.

Aim. The aim of the study was to investigate the role of viruses as non-cellular organism and their medical roles on example of some of them.

Materials and methods. Scientific literature and publications of last years were used for analysis.

Results and discussion. A viral disease (or viral infection) occurs when an organism's body is invaded by pathogenic viruses, and infectious virus particles (virions) attach to and enter susceptible cells. Viral diseases can also be defined as extremely widespread infections caused by viruses, a type of microorganism. There are many types of viruses that cause a wide variety of viral diseases. The most common type of viral disease is the common cold, which is caused by a viral infection of the upper respiratory tract (nose and throat).

Viral diseases has been among one of the most troubling and dangerous disease in human history. Signs and Symptoms of Viral diseases: Viral infections come with a variety of symptoms ranging from mild to severe. Symptoms may vary depending on what part of the body is affected, type of viruses and overall health of the affected person. These symptoms can include: Fever, Muscle aches, Coughing, Sneezing, Runny nose, Headache, Diarrhoea, Vomiting, Weakness and Rash. More severe symptoms include: Personality changes, Neck stiffness, Dehydration, Paralysis of the limbs, Seizures, Confusion, Back pain, Loss of sensation, Impaired, bladder and bowel function, Sleepiness that can progress into a coma or death.

Treatment of viral infections: Several antiviral drugs that are used to treat viral infections have been developed over the past two decades. Many of these are focussed against HIV. These do not cure HIV infection but stop the virus from multiplying and prevent the progress of the disease. Another notable antiviral drug is

Ribavirin against hepatitis C. Viruses in general are notoriously difficult drug targets as they modify and adapt themselves rapidly.

HIV/AIDS is a spectrum of conditions caused by infection with the human immunodeficiency virus (HIV). Following initial infection, a person may not notice any symptoms or may experience a brief period of influenza-like illness. Typically, this is followed by a prolonged period with no symptoms. As the infection progresses, it interferes more with the immune system, increasing the risk of common infections like tuberculosis, as well as other opportunistic infections, and tumors that rarely affect people who have working immune systems. These late symptoms of infection are referred to as AIDS. This stage is often also associated with weight loss.

Transmission: HIV is transmitted by three main routes: sexual contact, significant exposure to infected body fluids or tissues, and from mother to child during pregnancy, delivery, or breastfeeding (known as vertical transmission).

Zika virus is an emerging mosquito-borne virus that was first identified in Uganda in 1947 in rhesus monkeys through a monitoring network of sylvatic yellow fever. It was subsequently identified in humans in 1952 in Uganda and the United Republic of Tanzania. Outbreaks of Zika virus disease have been recorded in Africa, the Americas, Asia and the Pacific.

The incubation period (the time from exposure to symptoms) of Zika virus disease is not clear, but is likely to be a few days. The symptoms are similar to other arbovirus infections such as dengue, and include fever, skin rashes, conjunctivitis, muscle and joint pain, malaise, and headache. Zika virus disease outbreaks were reported for the first time from the Pacific in 2007 and 2013 (Yap and French Polynesia, respectively), and in 2015 from the Americas (Brazil and Colombia) and Africa (Cabo Verde). In addition, more than 13 countries in the Americas have reported sporadic Zika virus infections indicating rapid geographic expansion of Zika virus. Zika virus diagnosis can only be confirmed by laboratory testing for the presence of Zika virus RNA in the blood or other body fluids, such as urine or saliva.

Mosquitoes and their breeding sites pose a significant risk factor for Zika virus infection. Prevention and control relies on reducing mosquitoes through source reduction (removal and modification of breeding sites) and reducing contact between mosquitoes and people. Travellers should take the basic precautions described above to protect themselves from mosquito bites. Zika virus disease is usually relatively mild and requires no specific treatment. People sick with Zika virus should get plenty of rest, drink enough fluids, and treat pain and fever with common medicines. If symptoms worsen, they should seek medical care and advice. There is currently no vaccine available.

Conclusions. Viruses play a very important biological and medical role due their world distribution and influence on principal human activities.