Research on Human viruses

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Abstract

Viruses are small germs (pathogens) that can infect you and make you sick. Viral infections in humans can cause no symptoms or make you severely ill, types of diseases they cause are respiratory illnesses, diarrhea and vomiting, sexually transmitted infections, and skin conditions. In this research, the main focus is on 5 human viruses, from the first virus to the most recent virus. What causes them, what part of the human body becomes infected and is there a cure or prevention?
Introduction

1. Yellow fever virus
2. Covid-19
3. Pneumonia
4. Influenza (flu)
5. Human immunodeficiency virus (HIV)
Yellow fever virus

- The first human virus to be discovered in humans in 1901.
- The yellow fever virus originated in Africa and was brought to the western hemisphere during the slave trade era.
- It was the most lethal and feared disease. Before the 1900, the etiology and mode of transmission of yellow fever were enigmatic.
- In 1881, Carlos Finlay advanced in the field when he suggested Cluex cubensis as the mosquitos responsible for the virus.
- He displayed many attempts to prove his theory, but it served as a basis for Reed’s research.
At the end of the 19th century, the U.S had invaded Cuba during its war with Spain. During the war, 13 soldiers died of yellow fever.

Surgeon general George Sternberg sent Walter Reed, Aristides Agramonte, James Carroll, and Jesse Lazear to Cuba to investigate the cause of yellow fever.

Reed’s work proved that *Aedes cubensis* mosquitoes were the primary mode of transmission for the disease and that yellow fever virus was caused by a filterable agent found in the blood of infected patients.

Reed’s work led general William Gorgas to institute a campaign in Havana against the urban mosquito vector, eliminating the virus in 1902.
A virus that started in December of 2019, and till this day is being spread, originated in Wuhan City, Hubei Province, China.

Covid-19 symptoms typically include fever, dry cough, fatigue, and often with pulmonary infection.

The first patient to be isolated and identified with Covid-19 was exposed at a seafood market in Wuhan City, Hubei Province, China in December of 2019.

Covid-19 was said to be deadly to people who suffered from asthma and the elderly.

An autopsy report of a 50 year old male revealed the conditions of the lungs due to Covid.

The patient had died due to acute respiratory disease.
The Chinese Center for Disease Control and Prevention (CDC) analyzed environmental specimens and animal samples from Huanan Seafood Market and other several samples from fresh markets in Wuhan City.

The results revealed that 94% of SARS-CoV-2 (coronavirus) nucleic acid samples (31/33 cases) came from the western part of Huanan Seafood Market.

It usually takes up to 2 weeks to cure from COVID.

In 2021, a vaccine was made to prevent COVID, the vaccine is called Pfizer-bioNTech.

Graph of COVID cases in the U.S in 2020.
Pneumonia

- An inflammation of the air sacs in the lungs and the surrounding tissue.
- Symptoms of pneumonia are, High fevers and chills, physical weakness, cough with phlegm (sputum), shortness of breath and rapid breathing and racing pulse.
- Pneumonia is usually caused by bacteria, so a cure would be taking antibiotics. Those who are healthy can recover within a few weeks but it should be taken serious it can last for a few months until you are strong.
- Pneumonia is dangerous for babies and the elderly, especially if you are already weakened by another illness.
- Lung diseases such as asthma and COPD, heart disease, smoking and certain viral infections such as the flu can make people prone to pneumonia.
- Pneumonia is a common disease especially in Germany, over 500,000 people develop pneumonia each year. A total of 20,000 die due to pneumonia.
Ways to prevent pneumonia are, practicing personal hygiene, like regularly washing hands, can be the best way to prevent respiratory infections.

When things are more complicated you can get vaccinated. Children can get vaccinated against the Haemophilus influenzae bacteria or pneumococci, the bacteria that is usually found in pneumonia.

-Graph of populations of death
In women and men of ages 65 and up.
Influenza (flu)

- A contagious respiratory illness caused by influenza viruses infecting the nose, throat, and sometimes the lungs.
- Fever, cough, runny or stuffy nose, muscle or body ache, headaches, fatigue or tiredness, and lost of appetite.
- Some people may have diarrhea or vomit but it is common in more children than adults.
- A CID study found that children are more likely to get sick with influenza and elderly of age 65 and up.
- The flu and a common cold might get mistaken when one is sick but they have different signs and symptoms. A cold starts gradually while the virus that causes the flu strikes quickly and more severe symptoms.
- There are hundred of flu viruses. Influenza A and Influenza B are the most dangerous.
The flu is spread by droplet infection. When someone who is in infected coughs or sneezes, droplets containing the virus are released in the air. So washing your hands and stopping the spread the flu is a way for prevention.

- Everyone to go to treatment is at home remedies and chicken broth, which are helpful but they don’t speed up the cure when it comes to the flu.
- Antibiotics won't help against the flu because it isn't bacteria.
- The best way to prevent the Flu is by getting a flu shot every year.

- Flu cases in The U.S from 2010 to 2012 (In millions)
Human immunodeficiency virus (HIV)

- Attacks the body's immune system, HIV has no cure but does have a treatment that gives patients a long healthy live and can protect their partners.
- It destroys the infection-fighting CD4 cells. The loss of these cells makes it difficult for the body to fight off infections, diseases, illnesses and certain cancers.
- If HIV is untreated it can lead to AIDS (acquired immunodeficiency virus).
- HIV is transmitted from one person to another when certain body fluids are shared between people, for example blood, semen, pre-seminal fluid, vaginal fluid, rectal fluid, and breast milk.
- Antiretroviral therapy (ART) is the medicine used to treat HIV infected.
- ART prevents HIV from multiplying, which reduces the amount of HIV in your body. Having less HIV in your body protects the immune system and prevents HIV from leading to AIDS.
ART can reduce a person's viral load to an undetectable level. An undetectable viral load is the level of HIV in the blood is too low to be detected by a viral load test. Those with HIV who maintain an undetectable viral load have no risk of transmitting HIV to their negative HIV partner. Those who don't have HIV can prevent HIV by using protection during intercourse.

Graph of cases of people living with HIV, newly infected, and death due to HIV.
In conclusion, viruses can severely infect the human body with no symptoms or extreme illness or sometimes even death. Human virus not only infect our bodies but they also affect society, for example during the pandemic of covid-19 in 2020 many stores and business closed, including schools close down. It is important to be informed of these viruses and to seek medical help if infected.
Bibliography


Thank you!!!!