

Infectious Disease Causes and New Drugs

Elham Khalesi*

Certifies Engineer, Iran

***Corresponding author:** Elham Khalesi, Certifies Engineer Tehran, Iran

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ABSTRACT

In this paper, I try to propose a kind of new and more influence methods for cure of infectious diseases. In this kind of new drugs we can consider Antigens for kill of viruses or bacteria's.

Keywords: Infectious Diseases; Drug; Viruses; Bacteria; RNA; DNA; Antigens

Introduction

In this paper, I will try to discuss causes of infectious diseases and introducing the methods for removing these illnesses from the human body by introducing the methods for production drugs to have effect on this kind of diseases. Infectious diseases are disorders caused by organisms such as bacteria, viruses, fungi, or parasites. There are many organisms that live in and on our bodies. They are usually harmless or even beneficial. But some of them may cause illness under certain conditions. Some infectious diseases can be transmitted from person to person. Some of them are transmitted by insects or other animals. Others are transmitted by consuming contaminated food or water or by exposure to environmental organisms. Signs and symptoms vary depending on the organism causing the infection, but they often include fever and fatigue. Mild infections may respond to rest and home remedies, while some fatal infections may require hospitalization and a visit to the best infectious disease specialist. Many infectious diseases, such as measles and chickenpox, can be prevented with vaccines. Frequent and thorough hand washing also helps protect against infectious diseases.

Infectious Diseases Causes

Every infectious disease has its own signs and symptoms. General signs and symptoms that are common to a number of infectious diseases include:

- Fever

- Diarrhea
- Fatigue
- Muscle aches
- Cough
- Cause of infectious diseases

Infectious diseases can be caused by:

1. Bacteria

These unicellular organisms are the cause of diseases such as microbial sore throat, urinary tract infections, and tuberculosis. Bacteria are deceptively simple in structure. They are prokaryotic organisms, which are simple unicellular organisms with no nuclear membrane, mitochondria, Golgi bodies, or endoplasmic reticulum, that reproduce by asexual division. Most bacteria have either a gram-positive cell wall with a thick peptidoglycan layer, or a gram-negative cell wall with a thin peptidoglycan layer and an overlying outer membrane. Bacteria, such as *Mycobacterium tuberculosis* have more complex cell walls and others lack this cell wall structure and compensate by surviving only inside host cells or in a hypertonic environment. The size (1 to 20 μm or larger), shape (spheres, rods, and spirals), and spatial arrangement (single cells, chains, and clusters) of the cells are used for the preliminary classification of bacteria, and the phenotypic and genotypic properties of the bacteria form the basis for the definitive classification.

2. Viruses

Viruses are even smaller than bacteria, causing numerous illnesses, from the common cold to AIDS. Viruses are smallest infectious particles, ranging in diameter from 18 to 600 nm (most viruses are 200-300 nm and can not be seen with a light microscope) [1]. The genome of human viruses consists of either deoxyribonucleic acid (DNA) or ribonucleic acid (RNA). The viral nucleic acids required for replication are enclosed in a protein shell with or without a lipid membrane envelope. Viruses are true parasites, requiring host response to the infection dictate the nature of the clinical manifestation. More than 2000 species of viruses have been described, with approximately 650 infecting humans and animals. Infection can lead either to rapid replication and destruction of the cell or to a long term chronic relation with possible integration of the viral genetic information into the host genome. The factors that determine which of these takes place are partially understood.

Viral disease can range from the benign common cold to life-threatening Ebola, with acute, chronic, and even cancer-promoting presentations. The immune response provides both protection and pathology and may be the primary cause of illness. Often initiated with nonspecific flulike symptoms caused by host responses to the virus in the blood, [2] viral disease is characterized by the target tissue(s) infected by the virus. Classic symptomatology guides diagnosis with confirmation by isolation in cell culture, detection of viral components, or antiviral immune responses with a prominent role for genetic detection and sequencing. Treatment has advanced so that there is now a tolerable cure for hepatitis C virus and lifelong maintenance of human immunodeficiency virus (HIV) infections. New vaccines have reduced the risk for several viruses, and vaccines for human papilloma virus and hepatitis B virus are also preventing cancers.

3. Fungi

Many skin diseases such as ringworms and athlete's feet are caused by fungi. Other types of fungi are capable of infecting the lungs or nervous system.

4. Parasites

The causative agent of malaria is parasitism, which is transmitted by mosquito bites. Other parasites may be transmitted from animal feces to humans.

- All the headings in the main body of your paper are numbered (automatically).
- Methods of diagnosing an infectious disease
- Your doctor may order lab tests or imaging scans to determine the cause of your symptoms.

5. Laboratory Tests

Many infectious diseases have similar signs and symptoms. Sometimes a sample of body fluids can show evidence of a specific microbe

causing the disease. This helps the doctor in the treatment process.

- i. **Blood Tests.** A technician takes a blood sample by inserting the needle into a vein, usually at the site of the arm.
- ii. **Urine Test.** This painless test requires urinating in a container. To prevent possible contamination of the specimen, it may be instructed to first clean the genital area with an antiseptic and then collect urine.
- iii. **Throat swabs.** Samples obtained from the throat or other moist areas of the body may be taken with the help of a sterile swab.
- iv. **Stool Sample:** You may be taught how to take a fecal sample to present to a laboratory in order to examine samples of parasites and other organisms. Spinal cord (lumbar puncture). This procedure is performed to take a sample of cerebrospinal fluid through a needle carefully inserted between the bones of the spine. Usually, the patient is asked to stretch his knees towards his chest and lie on his side.
- v. **Biopsy:** During a biopsy, a small tissue sample is taken from the internal organ for testing. For example, a lung tissue biopsy can be used to check for the types of fungi that lead to a specific type of pneumonia.

6. Ways to Treat Infectious Diseases

Knowing the type of microbe causing the disease facilitates the choice of the most appropriate treatment option for the doctor.

i. Antibiotics: Antibiotics are grouped into similar families. Bacteria are also classified into groups containing similar types (such as Streptococcus or E. coli). Certain types of bacteria are sensitive to certain classes of antibiotics. If the doctor is aware of the type of bacteria that causes the disease, treatment can be more targeted. Antibiotics are commonly used for bacterial infections, as these types of drugs have no effect on diseases caused by viruses. But sometimes it's difficult to tell which type of germ is involved in the disease. For example, pneumonia can be caused by bacteria, viruses, fungi, or parasites. Excessive use of antibiotics has led to the development of a variety of bacteria resistant to one or more types of antibiotics. This makes it much more difficult to treat these bacteria.

ii. Antiviruses: Drugs have been developed to treat some, but not all, viruses. Examples include viruses that have:

- HIV/AIDS
- Herpes
- Hepatitis B
- Hepatitis C
- Flu

iii. Antifungals: Topical antifungal medications can be used to treat skin or nail infections caused by fungus. Some fungal infections, such as those that affect the lungs or mucous membranes, can be

treated with an oral antifungal medication. More severe fungal infections of internal organs, especially in people with weakened immune systems, may require intravenous antifungal medications.

iv. Antiparasitic Drugs: Some diseases, including malaria, are caused by tiny parasites. Although there are drugs to treat these diseases, some types of parasites have shown resistance to these drugs. DNA or RNA oligonucleotides (generally less than 50 nucleotides in length) labelled with reporter signal molecules bind to specific complementary microbial nucleic acid sequences for the detection of the organism in a clinical specimen or for the identification of the organism isolated in culture. Large numbers of the target sequence must be present for these probes to be useful. Generally these are not used for the direct detection of organisms in clinical specimens because the test sensitivity is too low (i.e., too few organisms are present for reliable detection). However, they can be used to identify organisms isolated in culture such as mycobacteria, dimorphic fungi, and viruses because large numbers of organisms will be present. Another use of molecular probes is to detect specific sequences amplified by the methods listed next. In this section I declare my idea for cureness of

infectious diseases is removing the viruses and bacterias from body by using antigens in drugs in style of antigens. In my view and study, every virus and bacterias has RNA and DNA in the cell. By removing and killing RNA in the bodies, we can kill viruses and bacterias in the body. Maybe by discovering viruses and bacterias each of infectious illness and the details of each of them, we can discover genes of these and then publish their antigens.

I declare the laboratory is not in my hand and by laboratory experiment we can work in this idea more.

Acknowledgments

I declare that this subject was one of my favourite major for research without having sponsorship or fund from any association.

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