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Study of Measles in Children and How to Eliminate It

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Abstract: Measles is a highly contagious disease caused by a virus. It spreads easily when an infected person breathes, coughs, or sneezes. It can cause severe illness, complications, and even death. Measles can affect anyone, but it is most common in children. However, the actual death toll may be higher. Measles affects the respiratory system and then spreads throughout the body. Symptoms include fever, cough, runny nose, and a rash all over the body.

Vaccination is the best way to prevent getting measles or passing it on to other people. The vaccine is safe and helps your body fight the virus.

Before the measles vaccine was introduced in 1963 and vaccination became widespread, major epidemics occurred roughly every two to three years and killed an estimated 2.6 million people each year.

An estimated 136,000 people died from measles in 2022 — most of them children under the age of five — despite the availability of a safe and cost-effective vaccine.

Introduction:

It is an infectious disease caused by the rubella virus and does not cause the child more discomfort than a cold. The incubation period of the virus after it enters the body lasts from 14 to 21 days, usually 18 days, then the symptoms of the disease begin to appear, such as a high body temperature during the first two days. The glands behind the ears and around the neck may swell, and the rash appears on the first or second day and consists of flat, bright red spots on the face, then spreads quickly to all parts of the body and all symptoms disappear on the fourth and fifth day. The infected person is contagious from a week before the rash appears until four days after it appears, and the person acquires permanent immunity after recovering from the disease. German measles is less common than measles, and does not cause any epidemic, but carries the risk of encephalitis in very rare cases. Measles is transmitted by droplet infection (i.e. inhaling air containing the disease viruses) from an infected person to a healthy person through respiratory secretions such as sneezing or nasal mucus. In the case of the fetus, the infection is transmitted to it through the placenta from its infected mother. The most common effect in adults who get measles is swelling and stiffness of the joints. Measles patients do not need special treatment, but this disease may affect the fetus while it is in the womb (such as the child being born deformed / suffering from heart disease / loss of sight or hearing / delayed mental and physical development or otherwise), so pregnant women should avoid contact with an infected person to avoid infection.

Measles pathogens.

The agent responsible for the development of measles is the measles virus, which is a very contagious virus, so that if a person is infected with this virus, he will transmit measles to approximately 90% of those around him who are not vaccinated against the virus and they will be infected with measles.

This virus lives in the sinuses and mouth of a child or adult infected with measles, as a person infected with measles can transmit it to those around him for a period ranging from four days before the rash appears until four days after it appears.

When a person infected with measles coughs, sneezes or speaks, small droplets of saliva carrying the virus are spread into the air, and thus everyone in the same place can inhale them.

These droplets carrying the virus can also fall on surfaces surrounding the infected person, where the virus remains active and contagious for up to 4 hours, and thus infection with the virus can occur by inserting fingers into the mouth or nose after touching a surface contaminated with the virus.

When the virus enters the body, it begins to multiply in the cells of the mucous tissue in the larynx and lungs. The virus then spreads throughout the body, including the respiratory system and skin.

Types of measles.

There are two main types of measles, which are:

1. Regular measles (in English: Measles), which is caused by the rubella virus
2. German measles (in English: Rubella or German Measles): It results from infection with the German measles virus or the rubella virus, and is not contagious, and its symptoms are less severe than the symptoms of regular measles, but it is dangerous if it infects a pregnant woman, as it poses a risk to the fetus if the mother is infected during pregnancy, but it is worth noting that the measles, mumps and rubella vaccine contains a vaccine that protects against infection with both types of measles

Symptoms of measles: There are many symptoms of measles, including the following:-

1:- High temperature for three days.

2:- Severe cold and runny nose.

3:- Dry cough.

4:- Sore throat.

5:- Redness and burning in the eyes.

6:- Muscle pain.

At the end of the third day, white spots appear inside the mouth and on the tongue that resemble salt particles.

On the fourth and fifth days, a red rash appears, which is the most common symptom of measles. It starts behind the ears, then spreads to the face, then the trunk, and finally covers the rest of the body. This rash may last for 7 days and usually disappears after 14 days of exposure to the virus

The most important complications of measles.

Measles infection lasts for a period ranging from 10 to 14 days, and in certain areas of the world measles is very severe and may even be fatal, but in developed countries the situation is completely different as those infected with measles suffer from severe illness but recover completely.

Complications of measles usually include:

1. Ear infections

Measles causes ear infections in one in 10 children who get it.

2. Meningitis

Approximately one in every thousand people infected with measles may develop meningitis, which is an inflammation of the brain due to a viral infection that causes vomiting, convulsions and seizures, and may lead in rare cases to coma.

Meningitis can appear shortly after measles or a few years later in adolescence as a result of a slow viral infection. Later-onset meningitis, called Dawson's encephalitis, is very rare.

3. Pneumonia

One in 15 people with measles will develop pneumonia, which can be fatal.

4. Diarrhea and vomiting

Such complications are more common in children and infants.

5. Bronchitis, pharyngitis or croup

Measles can cause laryngitis, or inflammation of the mucous membranes on the inside of the main bronchi in the lungs.

6. Pregnancy disorders

Pregnant women should be very careful about everything related to measles and be very careful not to be exposed to the virus, as this can lead to miscarriage or low birth weight babies.

7. Low platelet count

Measles can cause a decrease in the number of platelets, which are blood cells necessary for blood clotting.

Measles prevention.

The measles vaccine is generally given as a combination vaccine in a "triple vaccine" that also includes two vaccines against rubella, rubella and mumps.

This vaccine is made up of the most effective and safe combination of each of these vaccines. The vaccine is produced by taking the virus responsible for the development of measles from the throat of a person with measles and making it multiply in chicken embryo cells in the laboratory.

When the reconstituted measles virus is given to a child as part of the triple vaccine, it multiplies and causes a harmless infection even before the immune system tries to eliminate it. This harmless infection leads to the formation of immunity against the measles virus in 95% of children for life.

It is preferable to give a second dose of the vaccine a second time in order to vaccinate others who did not develop immunity in the first vaccination and to stimulate the immune system against measles in the other 95%

Antibiotics for measles.

Antibiotics do not work for measles because it is a viral disease and antibiotics do not work for measles, but there is Calamine lotion ointment to relieve measles.

Treatments for measles.

There is no specific treatment for measles. Care should focus on relieving symptoms, providing comfort, and preventing complications.

Drinking enough water and rehydration treatments can replace fluids lost from diarrhea or vomiting. Eating a healthy diet is also important.

Doctors may use antibiotics to treat pneumonia and ear and eye infections.

All children or adults with measles should receive two doses of vitamin A supplements, 24 hours apart. This restores low vitamin A levels that occur even in well-nourished children. It can help prevent eye damage and blindness. Vitamin A supplements may also reduce the number of deaths from measles.

Conclusion.

This study addressed measles in children and identified the most important pathogens of this disease and its symptoms. The study focused on the most affected age groups, which are children and pregnant women who suffer from malnutrition or weak immunity. Prevention strategies are limited to low rates of vaccination against measles, mumps and rubella appropriate for age, weak antibody responses to measles, mumps and rubella vaccine in older children infected with HIV, and seroconversion.

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