

-2 Polio-

// Definition:-

Polio myelitis, commonly known as polio, is an infectious disease caused by poliovirus.

// Explanation:-

Polio occurs naturally only in humans. It is highly infectious, and is spread from person to person either either through fecal-oral transmission (e.g., poor hygiene, or by ingestion of food or water contaminated by human feces) or via the oral-oral route.

// Symptoms:-

In most people with a normal immune system, a poliovirus infection is asymptomatic.

In about 25% of cases,

the infection produces minor symptoms which may include sore throat and low fever. These symptoms are temporary and full recovery occurs within one or two weeks.

In about 1% of infections the virus can migrate from the gastrointestinal tract into Central nervous system (CNS). Most patients with CNS involvement develop ~~non~~ non-paralytic aseptic meningitis, with symptoms of headache, neck, back, abdominal pain etc.

About one to five in 1000 cases progress to paralytic disease. The weakness most often involves the legs, but may less commonly involve the muscles of the head, neck and diaphragm.

// Causes:-

The disease is caused by infection with a member of the genus Enterovirus known as poliovirus.

⊙ Structure:-

Its structure is quite simple, composed of a single sense RNA genome enclosed in a protein shell called a capsid.

⊙ Incubation period:-

The incubation period ranges from three to 6 days for nonparalytic polio. If the disease progresses to cause paralysis, this occurs within 7 to 21 days.

// Preventive measures:-

i. Passive immunization:-

In 1950, William Hammon purified the gamma

globulin component of the blood plasma of polio survivors. It did reduce severity of the disease but due to limited supply of blood plasma gamma globulin was later deemed impractical for widespread use and the medical community focused on the development of a polio vaccine.

ii.

Vaccines:-

Two important vaccines ^{that} help to prevent polio, are:-

i. Oral polio vaccine:-

It is given with just two drops into the mouth of a child. A single dose of oral polio ^{virus} vaccine produces immunity to all 3 poliovirus serotypes in about 50% of recipients.

ii. Inactivated polio virus vaccine:-

This vaccine is given with an injection.

// How these vaccines work?

(i)

The oral polio vaccine builds protection in the child's intestine.

This vaccine not only protects the child who receives it but also ~~protects~~ protects others around the vaccinated child.

Several doses of the oral polio vaccine should be given to every single child.

(ii)

The injectible vaccine builds protection and the block instead of the gut. It helps

to boost immunity. However, it does not stop polio spreading between children. So, it is not useful in places where the virus is still circulating. Once polio has been stopped everywhere the inactivated polio virus vaccine will be used on its own to keep operations effective.

// Treatment:-

There is no cure for polio, but there are treatments. The focus of modern treatment has been on providing relief of symptoms, speeding recovery and preventing complications.