



## Polio virus

### GENERAL PROPERTIES:

- It belongs to family picornaviridae.
- It is spherical shape.
- Nucleocapsid is icosahedral.
- Genome is ssRNA.
- Non enveloped.

There are three serotypes poliovirus type-1 is most common and it causes most epidemics, poliovirus type-2 is usually associated with epidemics. Poliovirus type-3 occasionally causes epidemics.

### SOURCES AND TRANSMISSION

The infection naturally occurs only on humans it is transmitted by fecal oral route by ingestion of food and water contaminated with human feces the virus considered as enterovirus. poliovirus cause poliomyelitis most cases occur in children

### C/F

Incubation period 10-14days. Poliovirus causes direct pathological changes in CNS and is responsible for causing symptoms of the poliomyelitis disease most cases 95% are asymptomatic (no illness) 4% minor illness (abortive infection) with fever headache nausea drowsiness vomiting and sore throat 1% major illness with or without paralysis the non -paralytic poliomyelitis is characterized by flaccid paralysis occurs



## Medical Laboratory Techniques Department

Title of the lecture: Polio virus

Dr.: Marwa Fadhil Alsaffar

MarwaAlsaffar @mustaqbal-college.edu.iq



especially in lower limbs such as legs Respiratory paralysis can occur if brain stem is infected.

Poliomyelitis used to be feared disease worldwide but WH anticipates that by the year 2005 or soon thereafter it will be eradicated but it still continues to remain a public health problem in Afghanistan Egypt niger Nigeria Pakistan and india the motor nerve damage may permanent most patients recover spontaneously without CNS sequelae infection provides type specific immunity(acquired immunity)

### **DX:**

- Isolation of virus from throat stool and CSF.
- PCR tech.
- Detection of specific antibodies.

### **CONTROL:**

- No specific antiviral therapy are available.
- Mechanical ventilation for cases with respiratory paralysis.
- Two type of vaccine salk (killed IPV) and sabin (live OPV) recently, a new monovalent oral poliovirus-1vaccine(MOPV) has been introduced.



## RABIES VIRUS

### GENERAL PROPERTIES:

- It belongs to rhabdoviridae family.
- It is bullet-shaped.
- Genome is ssRNA.
- Nucleocapsid is helical.
- Enveloped and spiked.

### SOURCE AND TRANSMISSION:

The virus has a broad host range like dogs foxes wolves bats the virus is excreted in saliva of these infected animals infected animal has salivation lacrimation hydrophobia attack any things the virus is transmitted to human by bite of rabid animals or by contact of saliva with broken skin or with mucous membrane also human can infected with virus when expose to aerosolized secretion from infected animals or contact with un-pasteurized milk.

### C/F

Incubation period is variable (1-2 months) after bite exposure rabies is zoonotic disease and it-is almost always total infection three stages the **prodromal phase** of disease is characterized by fever nausea vomiting pain or itching at site of bite wound **hydrophobia (fear of water)**. During **neurologic phase** shows signs as hallucination bizarre behavior encephalitis this phase is followed convulsion or coma and death.



## Medical Laboratory Techniques Department

Title of the lecture: Polio virus

Dr.: Marwa Fadhil Alsaffar

MarwaAlsaffar @mustaqbal-college.edu.iq



### **DX:**

- Detection of inclusion bodies (Negri bodies) that formed in infected tissues.
- Detection of viral antigens in biopsy specimen from corneal scrapings or skin from nape of neck.
- Detection of viral N.A by PCR.

### **PREVENTION AND TREATMENT:**

- No specific treatment
- Washing of wound
- Vaccination : post –exposure by rabies vaccine also pre-exposure for high risk groups eg; veterinarians and animal handlers.