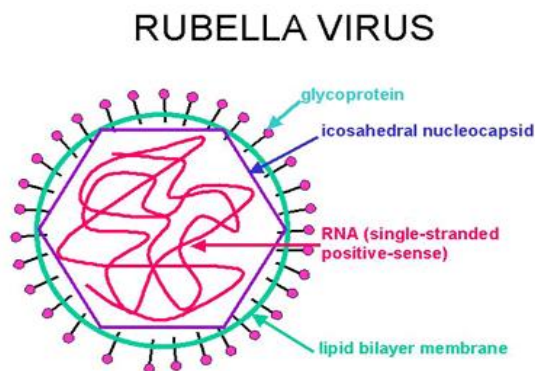


Rubella virus

General properties

- It belongs to Togaviridae.
- ssRNA
- Icosahedral nucleocapsid.
- Enveloped.
- H-protein.
- Virus multiply in the cytoplasm of infected cell.
- One serotype.



Source and Transmission

Humans are natural host and the virus is transmitted by respiratory droplets. It also transmitted from infected mother to her fetus via placenta. The virus is found in the blood 5 to 7 days after infection and spreads throughout the body.

Acquired rubella is transmitted via airborne droplet emission from the upper respiratory tract of active cases. The virus may also be present in the urine, feces and on the skin.

Pathogenesis & Immunity

The virus infects and replicates in nasopharynx and then spreads to local LNs, and cause lymphadenopathy, then disseminated via blood to internal organs (spleen, kidney, joints) and skin. In congenital, virus infects placenta and spread to fetus with multiple organs involvement. The rash is may result from Ab-Ag reaction that mediate vasculitis.

The infection confers lifelong immunity. Secondary infection of rubella does not occur.

Signs and Symptoms

After an incubation period of 14-21 days, the primary symptom of rubella virus infection is the appearance of a rash (exanthema) on the face which spreads to the trunk and limbs low fever , and lymphadenopathy joint pains, headache, conjunctivitis, and usually fades after three days.

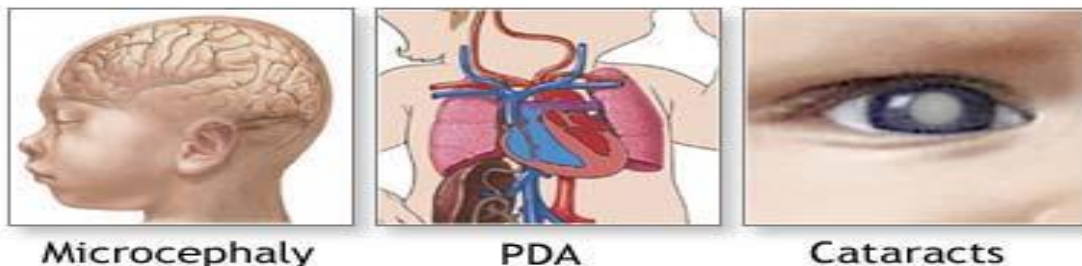
Main Clinical Events : The clinical events occurring in the neonatal age is more important and divided into two major groups

1. Post Natal Rubella: Occurs in Neonates and Childhood . Adult infection occurs through mucosa of the upper respiratory tract spread to cervical lymph nodes.
2. Congenital Rubella : It is occur in pregnant women who infected during the first three months of pregnancy may result in the baby being born with birth defects or congenital rubella syndrome which is characterized by malformation, cataract, deafness, cardiac abnormalities and mental retardation.

Congenital Manifestations (malformation)

- The heart (e.g., patent ductus arteriosus).
- The eyes (e.g., cataracts).
- The brain (e.g., deafness and mental retardation).

Rubella syndrome



* One attack of Rubella infection, protects for life .

Lec 4-----

Epidemiology

- Rubella is world wide in distribution.
- Occurs round the year.
- Epidemics occur every 20 – 25 years.

Laboratory Diagnosis

- The virus can be cultured on continuous cell lines, Rabbit Kidney Cells (RK 13) and Vero cells
- Detection of specific Abs by serologic tests.
- Detection of IgM in serum of pregnant or infant indicates recent infection.

Treatment & Prevention

- No specific treatment or Antiviral treatment is indicated.
- MMR vaccine is given to children at 15 months of age. The vaccine should not given for pregnant or immunocompromised individuals.

Good Luck