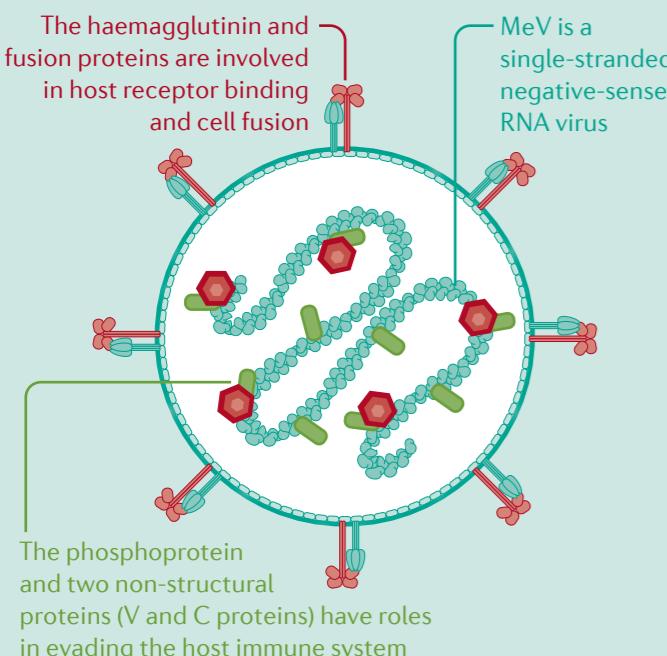


→ Measles is an infectious disease caused by an airborne, highly contagious pathogen: measles virus (MeV). Although an effective vaccine to prevent measles exists, measles remains a considerable cause of childhood mortality worldwide.

MECHANISMS

When inhaled, MeV infects alveolar macrophages and dendritic cells by binding to signalling lymphocyte activation molecule (SLAM; also known as CD150). Following local infection, the virus spreads and systemic infection of lymphoid tissues occurs throughout the body. MeV-infected lymphocytes and dendritic cells migrate to and infect epithelial cells using nectin 4 (also known as PVRL4) as a host receptor. Infection of the respiratory epithelium leads to the release of a large amount of progeny viruses into the respiratory tract, which are released into the environment when coughing. Although MeV infection leads to general immune suppression that can last for weeks or even years, a robust primary immune response establishes lifelong immunity.



DIAGNOSIS

Clinical symptoms of measles range from fever, cough, rhinitis, conjunctivitis, rash and local inflammation to systemic immunosuppression that can cause severe complications and death.

The incubation period is ~10 days to the onset of fever and ~14 days to the onset of rash. Patients are infectious from 4 days before to 4 days after the development of rash.

- Diagnosis is based on clinical signs and laboratory tests, including the detection of antibodies against MeV and viral RNA

Clustered white lesions on the mucosa lining the cheeks – Koplik spots – are pathognomonic for measles

Rx MANAGEMENT

Treatment of uncomplicated measles involves supportive care, including antipyretics and hydration. Antiviral therapies are not effective.

Proper nutrition and vitamin A supplementation protect against the development of more-severe symptoms. MeV can continue to replicate for

many years, leading to rare but severe central nervous system complications, including incurable subacute sclerosing panencephalitis.

EPIDEMIOLOGY

Prior to the introduction of the measles vaccine in 1963, an estimated 30 million cases of measles with >2 million deaths occurred each year globally. Efforts have been initiated to eliminate measles worldwide by 2020 through the implementation of vaccination programmes accompanied by sensitive surveillance systems to guide immunization efforts. Although substantial progress has been made to increase global vaccination coverage to 85% and reduce the number of measles-associated deaths, >100,000 children still die from measles each year. Case fatality ratio estimates in developed countries are <0.01% but can be >5% in developing countries.

PREVENTION

Because of the availability of an effective, safe and inexpensive vaccine, the monotypic nature of MeV and the lack of an animal reservoir, measles is considered a candidate for eradication. All current measles vaccines contain a live attenuated strain of MeV. Effective immunization requires routine two-dose vaccine coverage and mass immunization campaigns to capture children who have not been vaccinated or did not develop protective immunity after the first vaccine.

Maternally derived antibodies might hamper immunization in infants up to 9 months of age

