



Recent Advances in Diagnosis and Treatment of Measles

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DESCRIPTION

Measles, a highly contagious viral infection, has been a global health concern for decades. Recent advances in the diagnosis and treatment of measles have transformed the landscape of disease management, offering new hope in reducing its impact on public health. Accurate and timely diagnosis is essential for controlling measles outbreaks and preventing its spread. Traditionally, diagnosis depends on clinical symptoms and serological tests. However, recent advances have introduced more sensitive and specific diagnostic tools.

The advent of molecular techniques, particularly Polymerase Chain Reaction (PCR) assays, has revolutionized measles diagnosis. PCR can detect viral genetic material with high accuracy, allowing early identification of measles cases even before the appearance of clinical symptoms. This capability has proven invaluable in outbreak settings and has facilitated prompt intervention to contain the virus. While serological tests have been used for years, advancements in Enzyme-Linked Immunosorbent Assays (ELISA) and other serological methods have improved their reliability and specificity. These assays help distinguish between immunity due to vaccination and immunity acquired through natural infection, aiding in vaccination campaigns.

No specific antiviral treatment exists for measles, and management primarily involves supportive care to alleviate symptoms and prevent complications. Nevertheless, recent developments have paved the way for more effective management of the disease's progression. The introduction of antiviral drugs, such as ribavirin and favipiravir, has shown promise in limiting viral replication and disease severity in severe cases of measles. These drugs are especially important in vulnerable populations, such as immunocompromised individuals, where measles can lead to life-threatening

complications. The immune response plays an important role in measles pathogenesis. Researchers are investigating immunomodulatory therapies to counter the hyperinflammatory response associated with severe cases. Targeting specific immune pathways may help mitigate the damaging effects of the virus on the body. Monoclonal antibodies directed against the measles virus have shown potential in preventing or treating measles infection. These antibodies can neutralize the virus and reduce disease severity, particularly in high-risk individuals.

Vitamin A deficiency is a well-known complication of measles infection and can lead to severe ocular and systemic complications. Recent studies have underscored the importance of vitamin A supplementation as an adjunctive treatment, reducing mortality rates and improving overall outcomes. Prevention remains the important factor of measles control. Recent advances in immunization strategies have further enhanced our ability to combat the disease. In many countries, a second dose of the measles vaccine has been introduced to enhance population immunity and close immunity gaps. Measles-Containing Vaccine is a live attenuated vaccine that contains weakened measles virus. It is usually given as part of the MMR (Measles, Mumps, and Rubella Vaccine). The first dose of the measles vaccine is typically administered around the age of 12 to 15 months. A second dose, often referred to as the booster dose, is usually given between the ages of 4 to 6 years. This second dose is important for providing long-term immunity.

This strategy has proven effective in reducing measles transmission and preventing outbreaks. International organizations and health agencies are working to achieve global measles elimination. Advances in vaccine distribution, coverage monitoring and surveillance have been implemented to promoting these efforts forward. While challenges remain, these breakthroughs hold the promise of a future where measles becomes a preventable.

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