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Introduction

Ebola Virus Disease (EVD), also known as Ebola hemorrhagic fever, is a severe and often fatal illness caused by the Ebola virus. It gained worldwide attention during the devastating outbreak in West Africa from 2013 to 2016, which claimed thousands of lives [1]. Timely and accurate diagnosis of Ebola is crucial for effective disease management and containment. Additionally, the development of therapeutic approaches has played a significant role in improving

at the patient's bedside or in remote areas. These devices often employ nucleic acid amplification techniques or antigen detection methods to provide quick and accurate results, facilitating prompt decision-making and patient management [6].

Therapeutic approaches

Supportive care

Currently, there is no specific antiviral treatment for Ebola virus disease. Supportive care focuses on managing symptoms and maintaining vital organ functions. Intravenous fluid replacement, electrolyte balance, and the treatment of secondary infections are crucial in the management of EVD patients [7].

Experimental therapeutics

Several experimental therapies have shown promising results in preclinical and clinical trials. These include monoclonal antibody-based treatments, such as ZMapp and REGN-EB3, which target the Ebola virus and neutralize its effects. Other approaches involve using antiviral drugs, such as remdesivir, to inhibit viral replication [8].

Vaccines

The development of Ebola vaccines has been a significant breakthrough in preventing and controlling outbreaks. Vaccines like rVSV-ZEBOV have demonstrated efficacy in clinical trials, providing protection against Ebola virus infection. Mass vaccination campaigns have proven successful in curbing the spread of the disease in affected regions [9].

Convalescent plasma therapy

Convalescent plasma, obtained from individuals who have recovered from EVD, contains antibodies that can neutralize the virus. Transfusing this plasma into infected patients may boost their immune response and aid in recovery. However, further research is needed to establish its effectiveness [10].

Conclusion

The diagnostic techniques for Ebola virus disease have advanced significantly, enabling early detection and prompt response. Polymerase Chain Reaction (PCR), rapid diagnostic tests (RDTs), and serological assays contribute to accurate diagnosis and surveillance.

On the therapeutic front, supportive care remains the cornerstone of management, while experimental therapeutics and vaccines offer hope for effective treatment and prevention. Continued research and collaboration are vital to developing improved diagnostic tools and expanding therapeutic options to combat Ebola virus disease and mitigate its impact on public health worldwide. Ebola virus disease is arguably considered as one of the highly severe and fatal diseases of primates with great economic losses. Lack of access to rapid diagnostic tools has proven to be a setback to early identification, isolation, and management of the disease. This is further complicated by the non-specificity of symptoms presented during early stages of Ebola disease infection. With such nonspecific symptoms and the virus being highly contagious with high mortality rate, the need importance of developing a rapid diagnostic assays that can be deployed to resource-limited regions to be used at the point of care for diagnosis and identification of the disease cannot be overemphasized.

References

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