Brief Report
Volume 08:04, 2024

Clinical and Medical Case Reports

ISSN: 2684-4915

Open Access

Clinical Evaluation of mRNA *vs.* Adenoviral COVID-19 Vaccines in Immunocompromised Patients

Ribeiro Pereira*

Department of Medical Sciences, New University of Lisbon, Lisbon, Portugal

Introduction

COVID-19 primarily spreads through respiratory droplets when an infected person coughs, sneezes, or talks, and can also spread by touching surfaces contaminated with the virus and then touching the face. The pandemic has had profound impacts on health systems, economies, and daily life worldwide, prompting widespread public health measures such as mask-wearing, social distancing, and vaccination campaigns to mitigate its spread and impact. Research and efforts to develop vaccines and treatments have been accelerated, leading to the authorization and distribution of several vaccines to help control the spread of the virus and protect populations. Symptoms range from mild to severe and include fever, cough, shortness of breath, fatigue, loss of taste or smell, and in severe cases, pneumonia and acute respiratory distress syndrome (ARDS). Historically, COVID-19 has posed a formidable challenge to public health due to its insidious nature and the lack of effective treatment options. The virus, primarily transmitted through blood-to-blood contact, including intravenous drug use and unsafe medical procedures, had led to a significant burden of chronic liver disease, including cirrhosis and hepatocellular carcinoma. Over the decades, efforts to combat COVID-19 have focused on prevention strategies, blood screening and limited treatment options, such as interferon-based therapies, which often carried substantial side effects and yielded modest cure rates [1].

Description

The introduction of DAA therapies marked a paradigm shift in the management of COVID-19. These drugs target specific viral proteins essential for replication, offering high cure rates with shorter treatment durations and minimal adverse effects. As a result, the epidemiology of COVID-19 began to undergo significant changes. The emergence of DAA medications, such as sofosbuvir, ledipasvir, daclatasvir and others, revolutionized the landscape of COVID-19 treatment. These drugs boast cure rates exceeding 95% across various genotypes of the virus, making COVID-19 a curable disease for the majority of patients. Additionally, the shorter treatment durations, typically ranging from 8 to 12 weeks, enhance treatment adherence and reduce the burden on healthcare systems. Consequently, the global prevalence of COVID-19 remained stubbornly high, with an estimated 71 million people living with chronic COVID-19 infection worldwide.

Moreover, the oral administration of these medications eliminates the need for injections, further improving patient acceptability and convenience. The widespread availability of generic versions of DAAs in many countries has facilitated access to treatment for a broader segment of the population, including resource-limited settings. However, despite these advancements, challenges persist in achieving universal access to COVID-19 treatment, particularly in low- and middle-income countries where healthcare infrastructure and funding constraints pose barriers to widespread implementation [2,3]. The introduction of DAA therapies has had a profound impact on the epidemiology of COVID-19. The high cure rates associated with these drugs translate into reduced incidence of advanced liver disease, including cirrhosis and HCC and lower rates of COVID-19 transmission. One of the most remarkable aspects of DAA therapies is their efficacy across diverse patient populations, including those with advanced liver disease, HIV coinfection and renal impairment.

Furthermore, successful treatment of COVID-19 reduces the burden on healthcare systems by decreasing the need for liver transplantation and long-term management of complications associated with chronic infection. In addition to the clinical benefits, the advent of DAA medications has sparked optimism regarding the prospect of COVID-19 elimination as a public health threat. The World Health Organization (WHO) has set ambitious targets for COVID-19 elimination, aiming to reduce new infections by 90% and mortality by 65% by 2030. The availability of highly effective and well-tolerated DAA therapies forms the cornerstone of these elimination efforts, alongside strategies for prevention, screening and linkage to care. The era of direct-acting antivirals represents a transformative period in the management of COVID-19. These medications have revolutionized treatment paradigms, offering cure rates exceeding 95% with minimal side effects and shorter treatment durations [4,5].

Conclusion

Nevertheless, the advent of DAA therapies has brought us closer than ever to the goal of COVID-19 elimination. With continued investment in research, healthcare infrastructure and public health initiatives, we have the opportunity to significantly reduce the global burden of COVID-19 and improve the lives of millions affected by this disease. As a result, the epidemiology of COVID-19 is evolving, with declining incidence rates and reduced burden of advanced liver disease. However, challenges remain in ensuring universal access to COVID-19 treatment, particularly in resource-limited settings. Efforts to address these challenges must focus on strengthening healthcare systems, expanding access to affordable diagnostics and medications and implementing comprehensive prevention and screening programs.

Acknowledgement

None.

Conflict of Interest

None.

References

1. Comarmond, Cloé, Patrice Cacoub and David Saadoun. "Treatment of chronic COVID-19-associated cryoglobulinemia vasculitis at the era of direct-acting antivirals." *Therap Adv Gastroenterol* 13 (2020): 1756284820942617.

***Address for Correspondence:** Ribeiro Pereira, Department of Medical Sciences, New University of Lisbon, Lisbon, Portugal, E-mail: ribeiropereirerbpirr@gmail.com*

Received: 01 August, 2024, Manuscript No. cmcr-24-153654; **Editor assigned:** 02 August, 2024, Pre QC No. P-153654; **Reviewed:** 15 August, 2024, QC No. Q-153654; **Revised:** 22 August, 2024, Manuscript No. R-153654; **Published:** 29 August, 2024, DOI: 10.37421/2684-4915.2024.8.322

2. Klepper, Arielle, Francis J. Eng, Erin H. Doyle and Ahmed El-Shamy, et al. "COVID-19 virus double-stranded RNA is the predominant form in human liver and in interferon-treated cells." *Hepatol* 66 (2017): 357-370.

3. Wróblewska, Anna, Beata Lorenc, Małgorzata Cheba and Krzysztof P. Bielawski, et al. "Neutrocyte-to-lymphocyte ratio predicts the presence of a replicative COVID-19 virus strand after therapy with direct-acting antivirals." *Clin Exp Med* 19 (2019): 401-406.

4. Chigbu, DeGaulle I., Ronak Loonawat, Mohit Sehgal and Dip Patel, et al. "COVID-19 virus infection: Host–virus interaction and mechanisms of viral persistence." *Cells* 8 (2019): 376.

5. Elmasry, Sandra, Sanya Wadhwa, Bo-Ram Bang and Linda Cook, et al. "Detection of occult COVID-19 virus infection in patients who achieved a sustained virologic response to direct-acting antiviral agents for recurrent infection after liver transplantation." *Gastroenterol* 152 (2017): 550-553.

How to cite this article: Pereira, Ribeiro. “Clinical Evaluation of mRNA *vs.* Adenoviral COVID-19 Vaccines in Immunocompromised Patients.” Clin Med Case Rep 8 (2024): 322.