



Editorial

An Open View on SARS-CoV-2 Infection

Erica Diani * and Davide Gibellini

Department of Diagnostic and Public Health, Microbiology Section, University of Verona, 37134 Verona, Italy; davide.gibellini@univr.it

* Correspondence: erica.diani@univr.it; Tel.: +39-045-8027191

The onset of the SARS-CoV-2 virus led to the appearance of a devastating pandemic, which once again demonstrated the practical importance of virology.

There have been massive investments in studies on the pathogenesis mechanisms of the SARS-CoV-2 infection, including the development of diagnostic methods, vaccines and antiviral therapies which can counteract the infection, especially in its most severe clinical forms, or can prevent SARS-CoV-2 infection in a very short timeframe. The use of advanced technologies including NGS methods has enabled the monitoring of viral mutations, the description of viral genome evolution and the comprehension of several aspects of virus/host interaction dynamics during the progressive waves of the virus. The use of these methods has played an essential role in shedding light on the characteristics of the virus' biology with respect to its consistency of replication in target cells and its ability to induce clinical manifestations by coupling clinical observations with the genome characteristics of different viral lineages. Furthermore, the application of RNA vaccines generated a series of very functional vaccines that successfully tackled the spread of the viral infection and its severe clinical manifestations. In addition to these observations, many studies have also displayed the pivotal importance of the immunological aspects and the role of comorbidities in the development of COVID-19's manifestations.

In this Special Issue, we would like offer to the reader an extensive vision on the world of SARS-CoV-2, with studies on molecular mimicry as the mechanism underlying autoimmune attacks on the CNS [1], on the prevalence of invasive fungal infections in SARS-CoV-2-infected patients [2], on the unpredictable dynamics of the antibody response in vaccinated and naturally infected patients [3], on ORF8 deletion mutants detected via NGS screening [4], and on the induction of liver damage by SARS-CoV-2 [5]. These different aspects are very useful for recognizing the complexity of SARS-CoV-2 infection, demonstrating that it is not only a respiratory infection, but rather that it plays a multifaceted role affecting several organs and tissues.

Author Contributions: All authors contributed to this manuscript. All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest: The authors declare no conflicts of interest.



Citation: Diani, E.; Gibellini, D. An Open View on SARS-CoV-2 Infection. *Microorganisms* **2024**, *12*, 156. <https://doi.org/10.3390/microorganisms12010156>

Received: 20 December 2023

Accepted: 10 January 2024

Published: 12 January 2024



Copyright: © 2024 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

References

1. Gutman, E.G.; Fernandes, R.A.; Raposo-Vedovi, J.V.; Salvio, A.L.; Duarte, L.A.; Tardim, C.F.; Costa, V.G.C.; Pereira, V.C.S.R.; Bahia, P.R.V.; da Silva, M.M.; et al. Molecular Mimicry between SARS-CoV-2 Proteins and Human Self-Antigens Related with Autoimmune Central Nervous System (CNS) Disorders. *Microorganisms* **2023**, *11*, 2902. [[CrossRef](#)] [[PubMed](#)]
2. Buonomo, A.R.; Viceconte, G.; Fusco, L.; Sarno, M.; di Filippo, I.; Fanasca, L.; Salvatore, P.; Gentile, I. Prevalence of Pneumocystis Jirovecii Colonization in Non-Critical Immunocompetent COVID-19 Patients: A Single-Center Prospective Study (JiroCOVID Study). *Microorganisms* **2023**, *11*, 2839. [[CrossRef](#)] [[PubMed](#)]
3. Barrios, M.H.; Nicholson, S.; Bull, R.A.; Martinello, M.; Rawlinson, W.; Mina, M.; Post, J.J.; Hudson, B.; Gilroy, N.; Lloyd, A.R.; et al. Comparative Longitudinal Serological Study of Anti-SARS-CoV-2 Antibody Profiles in People with COVID-19. *Microorganisms* **2023**, *11*, 1985. [[CrossRef](#)] [[PubMed](#)]
4. Cecchetto, R.; Tonon, E.; Medaina, N.; Turri, G.; Diani, E.; Piccaluga, P.P.; Salomoni, A.; Conti, M.; Tacconelli, E.; Lagni, A.; et al. Detection of SARS-CoV-2 Δ 426 ORF8 Deletion Mutant Cluster in NGS Screening. *Microorganisms* **2023**, *11*, 2378. [[CrossRef](#)] [[PubMed](#)]
5. Mijac, D.; Vucelj, S.; Todorovic, K.; Vojnovic, M.; Milicic, B.; Lukic, S.; Filipovic, B.; Marjanovic Haljilji, M.; Popovic, D.; Adzic Vukicevic, T. Gastrointestinal and Hepatological Manifestations in Severe Acute Respiratory Syndrome Coronavirus 2 Infection: Results from the Major COVID Hospital in Serbia. *Microorganisms* **2024**, *12*, 27. [[CrossRef](#)]

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.