COVID-19 AND THE IMMUNE RESPONSE

Agnes Moreira da Silva[1]
Samylla Camargo G. Da Silva[2]
Stephanie Lorrane Fernandes Melo[3]
Tábita Ferreira Rosa Oliveira[4]
Thalys Nuryel Rodrigues Barreto[5]
Poliana Lucena Nunes[6]

The aim of this study was to explore aspects of Coronavirus Disease 2019 (COVID-19) through the investigation of immune system reaction, disease development and pandemic control strategies. This was a bibliographic review of the narrative type carried out from a search of scientific articles published in the last three years in the databases SciELO, PubMed and google scholar. The natural immune response has been found to play a vital role in the fight against SARS-CoV-2, with an emphasis on abnormal neutrophil activation and the formation of NETs, which contribute to inflammation and severe cases of the disease. In addition, SARS-CoV-2 infection is not restricted to the respiratory system alone, affecting various organs such as the gastrointestinal tract, nervous system, liver, and heart. This systemic spread is associated with dysregulation of the immune system and can result in various clinical symptoms. At the same time, vaccine development is a key piece to responding to the pandemic. The British Oxford vaccine uses a biomolecular technology based on the so-called 'viral vector', which consists of using a modified virus to stimulate the immune system in the production of antibodies against the coronavirus. CoronaVac, a vaccine against the new coronavirus produced by the Chinese laboratory Sinovac and tested in Brazil by the Butantan Institute, follows a different approach, being developed based on the inactivated virus itself, which is a more common strategy for immunizers. However, it is essential to highlight that vaccines cannot completely replace public health measures. The relationship between biological and social aspects in the context of Public Health is crucial to comprehensively addressing the pandemic. Research continues to expand our knowledge of the immune response to SARS-CoV-2 and improve prevention and treatment strategies. In short, these articles reveal the complexity of COVID-19 with a delicate immune response, manifestations in various systems of the human body, and the importance of vaccines as part of a set of measures to control the pandemic.

Keywords: COVID-19; Immune Response; Pathogenesis; Vaccination.

[1] Undergraduate student of Biomedicine, Universidade Evangélica de Goiás – Campus Ceres, E-mail: agnesmoreira2020@gmail.com
[2] Undergraduate student of Biomedicine, Universidade Evangélica de Goiás – Campus Ceres, E-mail: samyscamargo@gmail.com
[3] Undergraduate student of Biomedicine, Universidade Evangélica de Goiás – Campus Ceres, E-mail: stephaniefernandes541@gmail.com
[4] Undergraduate student of Biomedicine, Universidade Evangélica de Goiás – Campus Ceres, E-mail: tabitarosa@icloud.com
[5] Undergraduate student of Biomedicine, Universidade Evangélica de Goiás – Campus Ceres, E-mail: tnuryel02@gmail.com
[6] PhD in Sciences – Tropical Medicine and Infectology, Universidade Evangélica de Goiás – Campus Ceres, E-mail: poliana.nunes@unievangelica.edu.br