



Peripheral Red Blood Cells in Covid-19 Patients: Morphology

Peter Smith*

Editorial Office, Annals of Experimental Biology, Uxbridge, United Kingdom

*Corresponding Author: Peter Smith, Editorial Office, Annals of Experimental Biology, Uxbridge, United Kingdom

E-mail: info@scholarsresearchlibrary

Received: 10-Sep-2022, Manuscript no. AEB-22-83861; **Editor assigned:** 12-Sep-2022, Pre QC no: AEB-22-83861 (PQ); **Reviewed:** 22-Sep-2022, QC no. AEB-22-83861 (Q); **Revised:** 24-Sep-2022, Manuscript no. AEB-22-83861 (R); **Published:** 29-Sep-2022

ABSTRACT

The Covid-19 pandemic has caused a global health disaster and made it extremely difficult to find effective ways to limit the disease. The disease's pathophysiology is still changing. The peripheral blood picture in patients with Covid-19 has not received much study in the quest to understand the etiology of the virus. This investigation has concentrated on the Geimsa-stained morphology of red blood cells. The findings revealed unique morphological modifications in RBCs, such as rouleaux formation. In 98.3% of the patients, it was found that the RBCs had ring-like stained bodies. None of the control smears contained any of these ring bodies. On the cell walls of the RBCs in some smears, stained particles could be detected. RBCs in the shape of tears and macrocytosis with central polar stomatocytes were seen. There have been reports of neutrophil nuclei with fetus-like organization, anisocytosis, and moderate poikilocytosis. Reticulocyte and platelet counts are low relative to controls in covid-19 patients. Blood smears from each patient revealed significant lymphocytopenia, thrombocytopenia, and a mild neutrophilia with fetus-like nuclei.

Keywords: Red Blood Cells, Covid-19

INTRODUCTION

The club-shaped glycoprotein-coated, single-stranded enveloped RNA corona virus is spherical or pleomorphic. Corona virus has four subtypes: alpha, beta, gamma, and delta. The spike, membrane, envelope, and nucleocapsid, which are encoded at the 3' end of the viral genome, are the four primary structural proteins that make up the virus. A fifth structural protein, the hemagglutinin esterase, which binds sialic acids on the surface glycoprotein and possesses acetyl-esterase activity, is also present in the subset of coronaviruses. These actions facilitate virus transmission through the mucosa and cell entrance mediated by the S protein.

In this investigation, peripheral blood smears were examined in order to confirm the cell morphology in individuals with Covid-19 positive diagnoses. Several diagnostic procedures have been recommended to screen Covid-19 individuals during this pandemic. Different amounts of serology, CT chest, and nasal swabs were all used. The peripheral blood image has not received much attention.

Recent results show that COVID-19 patients have acute respiratory distress infection with maintained lung gas volume. According to one study, the pulmonary inefficiency found in COVID-19 patients may not just be the result of lung cell destruction. This hypothesis is backed by the unique presentation of Acute Distress Respiratory Syndrome (ARDS).

A recent thorough investigation found that the corona virus protein ORF10, in particular, shares conserved domains with Heme Oxygenase (HO), an important enzyme in the heme breakdown process, and that the viral protein ORF1ab may have a role in trapping the released porphyrin. Because porphyrins function as energy transporters and have higher cell membrane permeability than other compounds, they may make it easier for the corona virus to enter cells and spread infection. This work supports this theory.

In conclusion, the Giemsa stained smears of peripheral blood seem to be a predictable, simple method to establish the diagnosis of Covid-19. Ring form stained inclusions found within RBCs are a strong indicator of Covid-19. These characteristics could alter our understanding regarding Covid-19's pathophysiology.