

## A Mini Review in Laboratory Findings of Patients with COVID-19

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### Introduction

Coronavirus is a zoonotic virus, RNA virus of the order Nidovirales, of the family Coronaviridae [1]. This is a family of viruses that cause respiratory infections, which were isolated for the first time in 1937 and described as such in 1965, due to their profile under microscopy resembling a crown [2]. The types of coronavirus known to date are: alpha coronavirus HCoV-229E and alpha coronavirus HCoV-NL63, beta coronavirus HCoV-OC43 and beta coronavirus HCoV-HKU1, SARS-CoV (causing severe acute respiratory syndrome or SARS), MERS-CoV (causing Middle East respiratory syndrome or MERS) and SARS-CoV-2, the new coronavirus, described with the first case in December 2019 in Wuhan, Hubei province, and spread very quickly to many provinces in China and other countries [2,3].

A characteristic of SARS-CoV-2, which has contributed to it becoming a worldwide public health problem, is its high transmission rate, which occurs through fomites and respiratory droplets from coughing and / or sneezing. This transmission can happen, depending on the concentration of viral particles in the environment, having been demonstrated viral viability in aerosol dispersion for three hours or more [4-6].

The clinical spectrum of coronavirus infection is very wide, ranging from a simple cold to severe pneumonia. The initial clinical picture of the disease is characterized as a flu-like syndrome. COVID-19 patients usually develop signs and symptoms, including mild breathing problems and persistent fever, on average 5 to 6 days after infection. The fever is usually persistent, in contrast to the decrease observed in cases of influenza [7,8]. Fever may not be present in some cases, for example, in young, elderly, immunosuppressed patients or in some situations that may have used antipyretic medication [8,9]. The disease in children appears to be relatively rare and mild, with cases reported among individuals under 19 years of age [9,10]. High lethality was one of the main characteristics that differentiated SARS and MERS coronavirus outbreaks from the other four species known to cause common cold symptoms [11-13]. In Brazil, on February 26, 2020, the first patient with COVID-19 was diagnosed. A resident of the city of São Paulo who had recently returned from a trip to Italy. Five days after the first case, another positive case is confirmed in the country and in just 11 days the sum of confirmed cases reaches 25 people, currently, in July 2020 there are more than two and a half million cases [14-16]. On March 11, the World Health

Organization (WHO) characterized COVID-19 as a pandemic. However, until now, the virus is not fully known and scientific publications on the prognosis, diagnosis and monitoring of patients are also superficial [17]. Thus, a pattern of the most representative laboratory abnormalities found in patients with COVID-2019 infection is missing.

Laboratory diagnosis plays an essential role in the early detection, diagnosis and treatment of many diseases. COVID-2019 is no exception to this rule, in which the polymerase chain reaction with real-time reverse transcription (RT-PCR) allows for the direct identification of the virus [18]. However, the role of laboratory diagnosis goes far beyond etiological diagnosis and epidemiological surveillance, but it also has the function of assessing the severity of the disease, defining the prognosis, monitoring patients, guiding treatment and monitoring their therapy [19-23]. The role of clinical laboratory data in the differential diagnosis of severe forms of COVID - 19 has not yet been established and knowing the prognosis of the disease through hematological, biochemical and immunological statuses is crucial for the timely treatment and increased survival of critically ill patients [24].

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