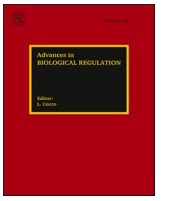
Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Advances in Biological Regulation 81 (2021) 100821

Contents lists available at ScienceDirect

Advances in Biological Regulation

journal homepage: www.elsevier.com/locate/jbior



Foreword

COVID-19 from a pharmacological perspective

Coronaviruses (CoV), a group of enveloped positive-strand RNA viruses, were discovered in the 1960s and were originally thought to cause only mild disease in humans, with several strains being responsible for the common cold (Cui et al., 2019). This view changed in 2003 with the SARS (severe acute respiratory syndrome) pandemic and in the 2012 with the Middle East respiratory syndrome (MERS) outbreak, two zoonotic infections that resulted in mortality rates greater than 10% and 35% respectively (Fung and Liu, 2019). From late 2019, the newly discovered Severe-Acute-Respiratory-Syndrome Coronavirus 2 (SARS-CoV-2) has continued to spread rapidly globally with pandemic proportions, and the related disease named coronavirus disease 2019 (COVID-19). As of 27 July 2021, there have been over 194 million cases of confirmed COVID-19 worldwide, and the death toll attributed to this viral infection has passed 4 million (Johns Hopkins, 2021). The clinical spectrum of SARS-CoV-2 infection is wide, encompassing asymptomatic infection, mild upper respiratory tract illness, and severe viral pneumonia with respiratory failure and even death (Zhou et al., 2020). In addition to the lung, COVID-19 often also affects other organs and tissues, including the kidneys, which accounts for the many extrapulmonary manifestations of the disease (Perico et al., 2021).

The scientific community has made an enormous effort, unparalleled in modern history, to better understand the nature and pathophysiology of COVD-19, with the hope that these advances will expedite the creation of safe and effective therapeutic interventions. Thus, in the past year we have witnessed a race to find drugs/biological treatments to save the lives of hospitalized, severely ill patients, as well as to develop vaccines. To this end, randomized clinical trials have been performed or are ongoing to test experimental drug candidates or repurposed medicines. Therapeutic approaches to the early, mild phase of COVID-19 are also being debated and here, too, there is an emphasis on the need for randomized clinical trials (Suter et al., 2021). However, due to the very large literature on the pharmacological approaches to COVID-19 that have become available so far, there is need to differentiate between anecdotes and evidence to limit the risk of sowing confusion among the physicians caring for COVID-19.

The present Special Issue of the Advances in Biological Regulation on “COVID-19 from a pharmacological perspective” is a contribution to make the point on our current understanding of the use of repurposed or innovative classes of drugs that would have major implications for patient care. The focus is on few topics, including the evidence of the risk/benefit of using nonsteroidal anti-inflammatory responses to viral infection, and on the debate around the timing and efficacy of glucocorticoids, mentioning the risks of secondary infections and other complications. Moreover, since COVID-19 patients are exposed to the risk of thromboembolic events, the rationale and considerations on the thromboprophylaxis in the various contexts of this disease is also addressed, with the aim of improving morbidity and mortality. In addition, the Special Issue explores the use of angiotensin-converting enzyme (ACE) inhibitors and angiotensin receptor blockers (ARBs), in the light of the interesting hypothesis on the role of renin-angiotensin system (RAS) in the pathophysiology of COVID-19, and proposes a pharmacological strategy with COVID-19 phase-specific inhibition of RAS enzymes. Whether complement inhibitors have a place in the prevention and/or treatment of inflammatory and vascular complications of COVID-19, is the topic that concludes this Special Issue.

Although not exhaustive, this collection will help physicians and in general all readers to get more insights on some relevant pharmacological approaches to COVID-19 patients with mild, moderate or severe illness.

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